0268 MODERATELY HEAD INJURED PATIENTS: A PROSPECTIVE MULTICENTER STUDY OF 315 PATIENTS

C Compagnone[1], F Servadei[1], D D'Avella[2]
1 Maurizio Bufalini Hospital, Cesena, Italy; 2 Universita di Messina, Messina, Italy

Background: Most published papers, including guidelines, concern patients with a mild and/or a severe head injuries. Moderately head injured patients have receive little attention even in recent years
Objective: Aim of our paper is to study in a prospectively collected series of patients with an admission GCS from 9 to 13 the clinical and radiological factors predicting outcomes. Secondary end points were the study of the surgical interventions and of CT evolution-lesion progression in the same population.
Methods: A prospective multicentre Italian study was performed from August 1999 to December 2001. Inclusion criteria were: GCS between 9- 13, without age limit. Exclusion Criteria: Penetrating Head Injury, associated spinal cord injury and impossibility to obtain adequate follow up .A series of clinico- radiological parameters was collected in the data base. An univariate analysis of prognostic factors by using Chi square test and unpaired t-test was applied to our study population.
Results: 315 patients were included in the study. The mean age of the patients included was 46.9 ± 26.7 years. 72% (219 patients) were men. The median pre-Hospital GCS was 12 (IRQ 9-13). 192 patients (63%) had Diffuse Injury I-II (DI I-II), and 106 (35%) had an evacuated mass lesion or a non evacuated mass lesion (EML-NEML). 42% (127 patients) presented with traumatic subarachnoid haemorrhage (tSAH). 23% of the DI II had an evolution to EML-NEML. 14% of the patients had a delayed haematoma, and 4% seizures. 74% of the patients had a good outcome. Only 5% of the patients died during the acute hospital stay.
Using outcome as dicotomic variable (favourable outcome, GR and MD vs unfavourable outcomes, SD, PVS, D), prognostic factors were age (p≤0.0001), pre-hospital motor GCS (p=0.03), the presence of an admission hemiplegia (p=0.046), and presence of neuroworsening (p=0.0004). The main cause of neuroworsening was delayed hematoma (p=0.019). We divided our population into two groups by GCS (GCS 9-10 vs GCS 11-12-13), and we were able to identify different prognostic factors. (See tables 1)
Conclusions: In our setting, moderately head injury patients have a high rate of clinical and radiological evolution. Our patients had a poorer outcome than previously described. This may be due to the higher rate of secondary referrals in our population as compared with other studies. We also conclude that moderately head injured patients are an heterogeneous population with different prognostic factors for the two main subgroups (GCS 9-10 vs GCS 11-12-13).

Table 1: Prognostic Fattors. Univariate Analysis

GCS 9-10				
		Poor	**Good**	**p**
tSHA	n (%)	13 (72)	15 (40)	0.04
Motor GCS	n (%)	6 (32)	2/37 (5)	0.008
Age	mean ± SD	55.1 ± 28	40.5 ± 21.8	0.0349
GCS 11-12-13				
Seizures	n (%)	4 (10)	2 (2)	0.02
NeuroWorsening	n (%)	18 (54)	40 (28)	0.007
Medical Complications	n (%)	15 (38)	18 (13)	0.0006
Age	mean ± SD	59 ± 23.8	44.8 ± 22.7	0.0007

0269 PRETRANSPLANT MELD SCORE COMPARED TO SIX SEVERITY-OF-ILLNESS SCORES AS PREDICTOR OF INTRAHOSPITAL OUTCOME AFTER LIVER TRANSPLANTATION

CHP Ferrari, S Basto, LJU Cunha, RNF Vieira, JR Rocco
Hospital Universitário Clementino Fraga Filho, Universidade Federal Do Rio De Janeiro - Rio De Janeiro, Brasil

Background - The Model for End Stage Liver Disease (MELD) is a valuable system for ranking patients in greatest need of liver transplantation. However, its accuracy to predict postransplant mortality, as well as others severity-of-ilness scores (SIS), is not completely established.
Objectives -The aim of this study was to compare and evaluate the performance of MELD score and six general SIS [Sequential Organ Failure Assessment (SOFA), Acute Physiology and Chronic Health Evaluation II (APACHE II), the Simplified Acute Physiology Score II (SAPS II), the Mortality Probability Models at admission and at 24 hours of intensive care unit (ICU) (MPM IIO and MPM II24) and the Multiple Organ Disfunction Score (MODS)] in predict hospital mortality in patients submitted to orthotopic liver transplantation.
Methods - A prospective observational cohort study was performed in a surgical ICU of a universitary hospital. Data were collected just before the transplant and over 24 hours of ICU stay. Discrimination was assessed by the area under receiver operating characteristic curves and calibration was performed using the Hosmer-Lemeshow goodness-of-fit H-test [GOF(H)].
Results - A total of 112 patients were included from 1999 to 2004. Sixty were male and 52 were female, with age=47.3±14.8 years. The observed ICU mortality rate was 29.5% and the hospital mortality was 34.8%. Discrimination was good for all of the six general scores, but not for MELD score. The area under receiver operating curve (AUROC) was 0.633±0.059 (95% confidence interval (CI) - 0.518-0.747) for MELD score, 0.807±0.046 (95% CI - 0.716-0.898) for APACHE II, 0.808±0.045 (95% CI - 0.719-0.896) for MODS, 0.810±0.043 (95% CI - 0.725-0.894) for MPM IIO, 0.816±0.043 (95% CI - 0.732-0.901) for SOFA, 0.819±0.044 (95% CI - 0.733-0.905) for MPM II24 and 0.862±0.039 (95% CI - 0.786-0.938) for SAPS II. Calibration was uniformly sufficient (P>0.005) [GOF (H)=5.386;p=0.716;degrees of freedom (df)=8 for MELD, H=14.65;p=0.067;df=8 for APACHE II, H=6.843;p=0.0445;df=7 for MODS, H=7.196;p=0.0516;df=8 for MPM IIO, H=11.834;p=0.159;df=8 for SOFA, H=13.866;p=0.085;df=8 for MPM II24 and H=6.264;p=0.0618;df=8 for SAPS II].
Conclusions - All the general scores accurately predicted outcome in the present group. The best discrimination was observed with de SOFA score. Meld score was not adequated to predict hospital mortality.

0270 A COMPARISON OF TWO SCORING SYSTEMS FOR MORTALITY RISK (PIM AND PRISM I) IN A PEDIATRIC INTENSIVE CARE UNIT: PRELIMINARY RESULTS

V Radonsky, L Stuginski, E Zlochevsky, C Pacheco, T Carvalho, T Matsumoto
Hospital Municipal Infantil Menino Jesus da Prefeitura Municipal de São Paulo. São Paulo / Brazil

Background: Logistic regression models permit calculate risk of mortality for critical care patients. They are usually used to measure severity of disease and evaluate the efficiency of the Intensive Care Unit. The scoring systems have been available for assessment of pediatric intensive care unit patients for almost two decades. They are considered accurate for group of patients but not for decision to be made for an individual patient.
Objectives: To compare the performance of two different clinical scoring systems in a governmental Pediatric Intensive Care Unit in São Paulo, Brazil.
Methods: Data were collected prospectively on 546 children admitted to the Pediatric Intensive Care Unit over a 36-month period.
Results: There were 33 deaths (6%). Analyzing data from PIM, mortality risk greater than 30% was identified in 33% of deaths and mortality risk less than 5% in 2.7%. As for the PRISM, mortality risk greater than 30% was found in 50% of deaths and less than 5% in 4.7%. These preliminary data shows that when PIM is greater that 30% it was able to foresee one death in each 3 observed deaths.
Conclusion: According to PIM authors, it is necessary to have 50 deaths to the confidence interval for the standardized mortality rate (SMR) not to be so wide. As we had just 33 deaths, our results may change later when we reach 50 deaths. It's possible that the higher mortality risk observed with PRISM greater than 30% was due to the inclusion of patients admitted with bad prognosis – dying patients. Due to the possible influence of pre-admission therapeutics on PIM – 1 hour and the influence of the first 24-hour therapeutics on PRISM 24-hour, we henceforth decided to analyse both scoring systems with 1 and 24 hour.

0271 CEREBRAL BLOOD FLOW AND TRANSCRANIAL DOPPLER IN SUBARACHNOID HEMORRHAGE PATIENTS UNDERGOING SEDATION AND ANALGESIA

F Tagliaferri[1], C Compagnone[1], G Sabia[1], A Tanfani[1], D Zappi[1], E Fainardi[2], M Ravaldini[1], L Targa[1], A Chieregato[1]
1 M. Bufalini Hospital, Cesena, Italy; 2 S. Anna Hospital, Ferrara, Italy

Background: Sedation and analgesia are common therapies in patients with subarachnoid hemorrhage (SAH). The low sensibility of clinical evaluation in these patients makes essential different monitorings to detect possible clinical complications like vasospasm. The aim of the present study was to evaluate the relationship between regional cerebral blood flow (rCBF) and transcranial doppler (TCD) velocimetry in sedated patients with acute SAH in whom the detection of clinical vasospasm was not feasible.
Material and methods: From 01/01/01 to 30/04/04 183 patients with acute SAH were admitted to our intensive care unit. We analyzed twenty nine patients with not traumatic SAH. The inclusion criteria were SAH due to bleeding aneurysm, requirements of sedation and mechanical ventilation and monitoring with TCD and Xenon enhanced computed tomography (Xe-CT) in the same day and under the same clinical conditions. Aneurysmal clipping or embolizations were performed in acute stage. The mean velocity of both mean cerebral arteries (Vmean) was measured with TCD and the rCBF was measured by means of Xe-CT. CBF was categorized as follows: severe ischemia (CBF<6 ml/100g/min), moderate ischemia (CBF> 6 and <18 ml/100g/min), reduced flow (CBF>18 and <33.9 ml/100g/min), relative hyperemia (CBF> 33.9 and <55.3 ml/100g/min) and absolute hyperemia (CBF>55.3 ml/100g/min).
Results: The mean age of the patients was 51.7 ± 12.2. 65% were females and 48 % had a bad grade Hunt &Hess score. 76% had a CT Fisher score grade III-IV. There were no statistical differences between mean values of cerebral perfusion pressure, intracranial pressure, temperature or arterial partial pressure of CO2 between TCD and Xe-Ct studies. In the mean cerebral artery territories the mean CBF was 35.1 ± 15.8 ml/100gr/min and the mean TCD velocimetry was 107.8 ± 40.5 cm/sec. The relationship between rCBF and TCD was poor. No differences in rCBF categories were found, except for a not significantly higher CBF in measurement associated to a Vmean above 160 cm/sec2.
Conclusions: Elevated Vmean seems poorly associated to critical CBF values. A wide range of rCBF was observed in different Vmean values. However, the TCD as a not invasive, low cost, repeatable and sensitive screening test of cerebrovascular resistance could be useful to plan further diagnosis test.

0272 BRAIN INJURY IN EUROPE: AN EPIDEMIOLOGICAL APPROACH

F Tagliaferri[1], C Compagnone[1], M Korsic[2], F Servadei[1], J Kraus[3]
1 Who Neurotrauma Collaborating Centre, M. Bufalini Hospital, Cesena, Italy, ; 2 University Hospital, Lubljana, Slovenia; 3 UCLA, Southern California Injury Prevention Research Center, Los Angeles, USA

Background: Injuries are the leading cause of death between the ages of 15 and 44 throughout Europe and head trauma accounts for the majority of trauma deaths. Prevention and effective treatment for brain-injured patients requires knowledge of the epidemiology of traumatic brain injury (TBI). Unfortunately, only a few reports have been published on brain injury epidemiology across Europe and fewer still include prevalence or cost data.
Objective: To describe epidemiological factors from European studies published in the last 20 years.
Methods: The Medline was searched for TBI related articles from about 1980 to 2003 including terms such as "epidemiology", "head injury", "brain injury" and others. From the research reports identified, we checked references for additional relevant reports and from those reports we abstracted data on TBI incidence, severity, external cause, gender, mortality, prevalence, cost and related factors.
Results: Twenty-two European reports have published data on head injury epidemiology. Five were national reports from Denmark, Sweden, Finland, Portugal, and Germany. The other seventeen studies were focused on counties, provinces, or regions in Norway, Sweden, Italy, Switzerland, Spain, Denmark, Ireland, France and the U.K.
An aggregate hospitalized plus fatal TBI incidence rate of about 235 per 100,000 was derived. An average mortality rate of about 15 per 100,000 and case fatality rate of about 11 per 100 were derived. The TBI severity ratio of hospitalized patients was about 22:1.5:1 for mild vs. moderate vs. severe cases, respectively. The percentages of TBI from external causes varied considerably and several reports reported an association of alcohol use with TBI.
Conclusions: It was difficult to reach a consensus on all epidemiological findings across the 22 published European studies because of the vast differences in research methods and information provided in each report. The absence of prevalence data hampers the full assessment of medical treatment and rehabilitation needs. Thus, it is proposed that epidemiological study guidelines be developed and instituted over the next several years to help establish a more precise description and utility of the epidemiology of TBI in Europe.

0273 INFECTIVE ENDOCARDITIS: PREDICTIVE VARIABLES OF EMBOLIC EVENTS

A Cremona, E Benavidez, D Branne, G Cremona, D Cocozzella, O Grillo, J Fernández, A Legarto, J Lossino, C Mendez, J Napal, S Ramirez Borga, S Ramirez Borga
Hospital Italiano La Plata. La Plata. Buenos Aires. Argentina

Background: The Embolic Event (EE) as a complication of the Infective Endocarditis (IE) has a negative impact on the patient's prognosis. Prevalence ranges from 22 to 50%. The EE may occur previous to the diagnosis and during or after the antibiotic treatment.
Objectives: 1- To analyze the clinical, microbiological an echocardiographic characteristics of a cohort of patients with IE and its association with EE. 2- Association of the EE moment with the antibiotic therapeutics. 3- Mortality of patients with EE and IE.
Methods: An observational descriptive study of a cohort of 53 patients with diagnosis of IE who were assisted at the Hospital Italiano La Plata from March 1996 to December 2004. The modified Dukes criteria were used to establish the diagnosis of IE. The Embolic Event (EE) was defined by an organic dysfunction of abrupt onset determined by ischaemia of clinical suspicion (Stroke, mesentery infarct, pulmonary embolysn) and confirmed by complementary studies regarding the case. Immunological phenomena, minor embolisms and cutaneous manifestations were not included. Metastic abscesses were included only when they were the consequence of an infarction caused by an embolism previously diagnosed.
Results: Out of 53 cases with IE, 18 presented EE (34.6%); the IE defined in the 18 patients; average age: 62.7. Sex (F/M) 7/11. Blood culture positive 94,4%; Microorganisms: S. aureus 7, St. bovis 3, St. viridans 3, HACEK 1 (H. parainfluenzae), St. agalactiae 1, SCN 1, E. faecalis 1. The transthoracic echocardiogram and/ or transesophageal detected vegetations in 17 (94%). The vegetation size was: < of 10 mm in 3, 10 mm in 14. Affected site: Native mitral valve 9, native aortic valve 4, native tricuspid valve 2, right ventricle 2, endocardium was not recognized in the remaining one. Site of EE: lungs 4, central nervous system 11, mesenteric 1, lower limbs 1; and spleen 1. The moment of the EEs: 10 EE (55.5%) occurred previous to the antibiotic therapy, 8 EE (44 %) after the same; in the first week of treatment 7 events took place, and in the second week 1 (6%). Five (27.7%) required surgical treatment of valvular replacement. Mortality was of 7 patients (38,8 %).
Conclusions: In this study the variables that were positively associated with EE in a statistically significant way were the following: vegetation presence in the echocardiogram (Transthoracic and/ or thransophageal one) and the vegetation size > to 10mm of diameter in the echocardiogram. The native mitral valve was the most frequently affected. The S. aureus was the most frequent microorganism. More than half of the EE took place previous to the antibiotic treatment, with a significant reduction to the tendency of EE risk as from the effective antibiotic treatment in the 2nd and 3th week.
In the EEs of right cavities mortality was not registered and in the left cavities the mortality was in 7 patients (50%).

0275 EVALUATION OF DEATHS IN AN INTENSIVE CARE UNIT OF A BRAZILIAN UNIVERSITY HOSPITAL

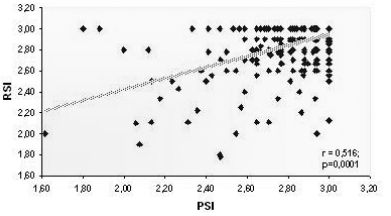
RD Moritz, FO Machado
Universidade Federal de Santa Catarina

Background: Mortality statistics are an important source of information concerning the correct treatment during the dying process.
Objective: To examine the deaths among patients of the ICU of a brazilian university hospital of a 6 months period.
Design: Observational, transversal and non-controlled study.
Method: Were evaluated the deaths occurred in de Intensive Care Unit (ICU) at the HU/UFSC from July to December 2004. The demographic characteristics, information about the clinical features, and the treatment of those patients who died in the ICU were analyzed. It was considered if the death was presumed or avoidable, and whether maneuvers of cardiopulmonar resuscitation (CPR) were performed.
Results: During the study period, 48 patients died in the ICU. The whole hospital mortality rate was 3.3% and the ICU mortality rate was 27.4%. The ICU rate occupancy was 89.86%. The majority of the patients who died stayed in the ICU 1 to 4 days. The patients who died were 57.4 years old in average, and de medium APACHE II was 23.3. Thirty deaths (62%) were considered presumed, and 36 (75%) unavoidable. Four deaths were considered avoidable; two was in consequence of surgical complications and two others had the final diagnostic delayed. CPR was performed in 12 patients. Ten deaths happened after withdraw or withhold (W/W) of medicines and other treatment. The more frequently medicine W/W was the vasoactive drugs. The complete treatment, including the diet, was W/W for 4 patients. Vasoactive drugs were isolated W/W for 3 patients. These ten cases with poor prognosis were discussed with the family and a decision was made not to resuscitate in the event of cardiac arrest. There was no statistical significance when the medium age and APACHE II of the patients to whom the treatment was fully maintained was compared to those to whom the treatment was W/W.
Conclusions: Despite the acuteness of the clinical situation that determines the reason to transfer a patient to an ICU, many cases have a clear poor prognosis before the last event. Such deaths are often preceded by withdraw or withhold treatment.
Keywords: withdraw / withhold /death

0276 QUALITY OF CARE ON AN INTENSIVE CARE UNIT (ICU): USING SUBJECTIVE INDICATORS AS ANALYSIS TOOL

M Knibel[2], R Hatum[1], C David[2]
1 CardioTrauma Ipanema Hospital, Rio de Janeiro, RJ, Brazil; 2 Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

INTRODUCTION: The routine follow up of objective quality indicators (product analysis) and subjective quality indicators (service analysis) has essential importance to an adequate manegement of an ICU. It allows continous PDCA cicles (to plan, to do, to check and to act) and the adoption of preventive and corrective measures, wich is a simple, dynamic and efficient manegement system.
PATIENTS AND METHODS: We applied satisfaction questionaries to patients admitted from february to november of 2003 and their relatives. Those questionaries generated the Patient Satisfaction Index (PSI) and the Relative Satisfaction Index (RSI), by mean of the 17 patient's answers and 10 relative's answers. The statistical analysis used: (1) Mann-Whitney test (to compare two groups in wich variables did not presents normal distribution), (2) Kruskal-Wallis analysis of variance (to compare three or more groups), (3) qui-square 2 test (to compare qualitative data between each five months period) and (4) Pearson coeficient (to measure the correlation strength between PSI and RSI). We accepted p<0,05 as significance level. The software pack used was SAS® System.
RESULTS: Indexes general descriptive analysis. PSI – 2,856 (mean value). RSI – 2,882 (mean value)
PSI descriptive and statistical analysis by month
No difference (p=0,10)
RSI descriptive and statistical analysis by month
No difference (p=0,005)
PSI descriptive and statistical analysis by 5 month period
No difference (p=0,31)
RSI descriptive and statistical analysis by 5 month period
No difference (p=0,65)
Correlation coefficient between PSI and RSI (see graphic 1)
Positive correlation
CONCLUSIONS: Our manegement system was good in services issue because: 1.The PSI mean was 2,856 and the RSI was 2,882, both above 2,5, our initial goal. 2.There was no significative variance in the PSI between the months, wich indicates an uniform behavior of the service. 3.There was no significative difference in the PSI and RSI measures between both five months periods, wich shows uniformity in the offered services. 4.There was strong association between PSI and RSI, which confirms that the ICU team really sees patient's relatives like clients, which means a good quality service (graphic 1).



Graphic 1 – Correlation coefficient between PSI and RSI (Pearson test)

0278 EFFECTS OF NITROGLYCERIN ON CARDIAC OUTPUT MEASURED BY PULSECO™

K Yamashita[1], T Nishiyama[2], T Yokoyama[1], H Abe[1], M Manabe[1]
1 Kochi Medical School, Nankoku, Kochi, Japan; 2 The University of Tokyo, Bunkyo-ku, Tokyo, Japan

Background: PulseCO™ (LiDCO Ltd, London, UK) is one of the non-invasive continuous cardiac output (CO) monitors using pulse-contour method. Pulse-contour method is defined as the method to determine CO from characteristics of the arterial pressure waveform. However, the arterial pressure waveform often changes, ex. by vasoactive agents. In such situation, CO might be miscalculated. In the present study, we investigated the effects of vasodilation induced by nitroglycerin (NTG) on CO measured by PulseCO™.
Methods: Twelve patients who underwent off-pump coronary artery bypass grafting were enrolled in this study. After premedication with oral diazepam 10 mg, anesthesia was induced and maintained with midazolam, fentanyl and vecuronium. After induction, radial arterial and pulmonary arterial catheters were inserted. CO and systemic vascular resistance (SVR) were measured after anesthesia induction,10 minutes after infusion of NTG 0.2 μg/kg/min and 10 min. after the NTG dose was increased to 0.4 μg/kg/min. CO by the standard thermodilution method was measured three times by injection of 0.2 ml/kg saline of less than 5° using the Vigilance™. PulseCO™ was initially calibrated with the value of CO measured by thermodilution method and no recalibration was performed during the study.
Results: Patients were 8 male and 4 female, 68±7 years old, 156±10 cm in height and 61±7 kg in body weight. SVR were 2099 ± 518 dyne/sec/cm^5 after induction, 1576 ± 372* dyne/sec/cm^5 after 0.2 μg/kg/min and 1574 ± 257* dyne/sec/cm ^{5}after 0.4 μg/kg/min (*p < 0.05 vs. after induction). The correlation coefficient (R^2) and the limits of agreement (bias ± SD of bias) between the two measurements were 0.96 and - 0.10 ± 0.31 L/min after 0.2 μg/kg/min and 0.96 and - 0.10 ± 0.31 L/min after 0.4 μg/kg/min, respectively.
Conclusions: PulseCO™ might underestimate CO when SVR decreased significantly by infusion of NTG 0.2 and 0.4 μg/kg/min in comparison with CO measured by bolus thermodilution method, while both measurements correlated well.

0279 EMPIRICAL ANTIMICROBIAL THERAPY AND MORTALITY IN SEPTIC PATIENTS ACCORDING TO ORIGIN, CLINICAL PRESENTATION AND INFECTION SITES

H Bagnulo, M Godino
Intensive Care Unit. Maciel Hospital. Montevideo. Uruguay

Background: Several studies show a high number of inappropriate antimicrobial therapy (IT) in septic patients; even after the final microbiological report, 8% to 20% of patients still receive IT, and correlated with increased mortality.
To improve the antimicrobial therapy, it is very important to know the variables associated to a higher risk of IT.
The purpose of this study is to evaluate the relationship between the IT and mortality in septic patients, and to know the factors associated with IT according to origin, clinical presentation and infection sites.
Methods: Lineal and retrospective studies of sepsis with positive blood cultures in a medical and surgical intensive care unit of 22 beds during the period of 2002 to 2004.
Inappropriate antimicrobial therapy was defined as the administration of agents that were not active in vitro against the microorganism identified in blood cultures or no antimicrobial was being administered.
Relationships between variables were evaluated using the chi-squared test, being statistically significant a p<0.05
Results. Overall 140 sepsis were studied. Overall mortality rate was 46% (64 p). Patients who received IT were 31.5% (44 p), whereas 14 patients received no antimicrobial treatment. The IT was associated with an increased mortality, p<0.000, related rate (RR) 2.7. Communitary origin was 72% (101 p) and nosocomial 28% (39 p). IT was significant correlated with nosocomial origin,
p= 0.033 RR 1.79.
The clinical presentation was: sepsis 22 % (31 p), severe sepsis 33% (46 p) and septic shock 45% (63 p). Mortality rate respectively was: 13% (4p), 32.5% (15p) y 71% (15p). The IT was significant correlated with septic shock p= 0,014, RR 1.9.
The IT was associated with increased mortality in severe sepsis with p=0.047, RR 2.3.
In relation with site of infection, respiratory was the most frequent site in community 40% (40p) and nosocomial sepsis 64% (25 p).
Community acquired respiratory tract sepsis were associated with low risk of IT p= 0.026, RR 0.73.
Unknown sepsis site represented 10% (10 p) of community-acquired sepsis and was associated with IT, p=0.018, RR 2.4
Conclusion: -The IT was associated with increased mortality in septic patients, mostly in severe sepsis.
- Variables associated with IT were: nosocomial-acquired sepsis, septic shock and unknown site sepsis.

0280 BARIATRIC SURGERY POSTOPERATIVE MANAGEMENT: COMPLICATIONS IN A SERIES OF 278 PATIENTS ADMITTED TO AN INTENSIVE CARE UNIT

M Knibel, F Muller, R Hatum, C Roderjan, E Guimarães, M Lugarinho, C Vasconcelos, A Vanzan, M Mattos
São Lucas Hospital, Rio de Janeiro, RJ, Brazil

INTRODUCTION: Morbid obesity is one of the most important public health problems in our days and the bariatric surgery became an option to patients with 35 or higher body mass index(BMI)and obesity related complications(hypertension, diabetes, etc).
PATIENTS AND METHODS: We observed the postoperative period of these patients in our Intensive Care Unit (ICU) during 10 months (n=278) and their possible postoperative complications.
RESULTS: It was found athelectasy in 60%,surgical wound minor bleeding in 2,5%,pulmonary embolism in 0,35%,pneumonia in 1,43%,acute renal failure in 1,07%,rhabdomyolisis in 2,8%,peritonitis in 1,43 %,respiratory failure in 2,5%,acute respiratory distress syndrome(ARDS)in 1,07%,cardiac arrhythmia in 1,43%,gastrointestinal fistula in 2,5%,acute myocardial infarction in 0,72%,lower gastrointestinal hemorrhage in 0,71%,and bowel obstruction in 0,71%.The death overall rate was 1,43%.
CONCLUSIONS: The most common postoperative complication was athelectasy, showing the need of a respiratory therapist at the bedside to perform non-invasive mechanical ventilation in the immediate postoperatorium period.The peritonitis was the worst complication, accounting for all deaths; the intensive care team must be prepared to immediately recognize and manage these cases.The results are in accord to those found in the recent medical literature.

0281 A COMPARISON OF TWO ALVEOLAR RECRUITMENT MANEUVER APPROACHES IN PATIENTS WITH ACUTE RESPIRATORY DISTRESS SYNDROME AND HEMORRHAGIC STROKE WITH GLASGOW COMA SCALE < 8

SN Nemer[1], L Paraíso[1], L Ferreira[1], R Maia[1], M Andrade[1], L Caldeira[1], V Godinho[1], R ávila[1], S Machado[1], PCP Souza[1], CSV Barbas[2]
1 Hospital de Clínicas de Niterói - Rio de Janeiro - Brazil; 2 Universidade de São Paulo - São Paulo - Brazil

BACKGROUND / OBJECTIVES: Alveolar recruitment maneuvers (ARM) are generally not used in used in acute respiratory distress syndrome (ARDS) patients in acute phase of brain injury, aiming avoiding increasing intracranial pressure (ICP).
METHODS: Sixteen patients with ARDS and hemorrhagic stroke were evaluated. Criteria to admission were: acute onset, bilateral chest radiographic infiltrates, pulmonary-capillary wedge pressure < 18 mm Hg, PaO2 / FiO2 ratio < 200 and Glasgow coma scale < 9 with ICP monitorization. Patients were randomized in two similar groups. One received ARM with CPAP of 35 cm H2O for 40 seconds, and the other received pressure control ventilation (PCV) with positive end expiratory pressure (PEEP) of 15 cm H2O and pressure control above PEEP of 35 cm H2O for two minutes (tidal recruitment). ICP, cerebral perfusion pressure (CPP) and oxygen pulse saturation (SpO2) were similar in both groups before the randomization. Fraction of inspired oxygen (FiO2) was kept in 1.0 during the study. ICP, CPP and SpO2 were measured before and after ARM and compared by Student's t Test. Mortality was compared by Fisher's Test.
RESULTS: Initials values of ICP, CPP and SpO2 were respectively: 13.38 ± 4.53 mm Hg (CPAP group) x 13.25 ± 3.45 (tidal recruitment group), p = 0.95; 82.75 ± 10.37 (CPAP group) x 84.25 ± 10.37 mm Hg (tidal recruitment group), p = 0.73; 95.75 ± 1.04 (CPAP group) x 95.0 ± 1.51 % (tidal recruitment group), p = 0.26. After ARM, ICP was higher in the CPAP group (20.50 ± 4.75 mm Hg x 13.13 ± 3.56 mm Hg; p = 0.003), CPP was lower in the CPAP group (62.38 ± 9.81 x 79.60 ± 6.80 mm Hg; p = 0.001) and SpO2 was lower in the CPAP group (96.58 ± 1.50 x 98.25 ± 1.83 %; p = 0.045). Mortality was lower in the tidal recruitment group, but not statistically different (37.5 % x 50 %; p = 0.50)
CONCLUSION: Tidal recruitment with PEEP of 15 cm H2O and pressure control above PEEP of 35 cm H2O didn't affect ICP, decreased CPP, but in safe levels, besides improving oxygenation, it can be done safely in patients in patients with ARDS and brain injury. In the other hand, ARM with CPAP of 35 cm H2O for 40 seconds can worsening ICP and CPP, should be avoiding in these patients.

0282 RELATIONSHIP OF SOFA SCORE, LACTATE LEVELS AND GASTRIC TONOMETRY IN SEPTIC SHOCK

MH Kai[1], E Silva[2], PS Martins[1], AG Garrido[2], E Knobel[2], S Blecher[1]
1 SANTA MARCELINA HOSPITAL; 2 Albert Einstein Hospital

BACKGROUND: The septic shock presents with tissue hypoperfusion, systemic measured by lactate levels and regionally by gastric tonometry (PCO2 gap). The combination of these measures with clinical data may allow group stratification with different prognosis and then to intervene in a more adequate way.
OBJECTIVE: To stratify the prognosis of patients with septic shock according to SOFA score, serum lactate and PCO2 gap with mortality in 28 days.
METHODS: This study enrolled 56 patients with septic shock (SCCM sepsis criteria) admitted in 2 hospitals in São Paulo. Patients were gathered according to SOFA score, median of 03 daily measures of serum lactate and PCO2 gap on days 1, 2 and 3. The ROC curve was used to determine the cut-off values of SOFA score and PCO2 gap.
RESULTS: The mortality rate was 46.7%. In the regression analysis the three study variables were independent predictors of death. The estimated odds ratio (OR) and 95% coefficient interval (95% CI) were: SOFA score on day 1 [OR=10.6 (1.8-63.1)]; altered lactate on days 1 or 2 or 3 [OR=17.7 (2.7-116.2)]; altered PCO2 gap on days 1 or 2 or 3 [OR=17.7 (3.1-194.9)]. The patients were gathered into groups based on SOFA score (≤10 and >10). All patients with SOFA score ≤ 10 (n=29/56) and normal lactate levels (n=13/29) survived; and patients with altered lactate (n=16/29) had mortality rate of 43.7% (p<0.05). In this group, patients with altered PCO2 gap showed higher mortality (66.6% vs. 14.2%; relative risk (RR)=4.7; 95% IC=0.7-30.3; p<0.05). The patients with SOFA score >10 (n=27/56), the mortality rate among patients with normal (n=10/27) and altered lactate levels (n=17/27) were respectively 40.0% vs. 82.3% (RR=2.0; 95% IC=0.9-4.5; p<0.05). In this group, patients with altered lactate and altered PCO2 gap (n=14/17) had mortality rate of 100% (p<0.05).
CONCLUSIONS: The SOFA score, lactate levels and gastric tonometry were able to risk- stratify the mortality in septic shock. The permanence of SOFA score ≤ 10 on day 1 and normalized serum lactate in the 3 days after the reanimation (day 1 and day 2 and day 3) stratifies a population with low risk of death. The permanence of SOFA score > 10 on day 1; serum lactate and PCO2 gap with altered values in one of the 3 days after the reanimation (day 1 or day 2 or day 3) stratifies a population with high risk of death. In the septic shock, the use of gastric tonometry, might be beneficial in the patients with altered lactate after reanimation.

0284 BARIATRIC SURGERY POSTOPERATORIUM IN THE ICU: CORRELATION BETWEEN COMPLICATIONS IN OPEN VERSUS LAPAROSCOPIC GASTROPLASTY

M Knibel, R Hatum, F Muller, C Roderjan, E Guimarães, M Lugarinho, C Vasconcelos, A Vanzan, M Mattos
São Lucas Hospital, Rio de Janeiro, RJ, Brazil

INTRODUCTION: Morbid obesity is one of the most important public health problems in our days and the bariatric surgery became an option to patients with 35 or higher body mass index (BMI) and obesity related complications (hypertension, diabetes, etc).
OBJECTIVE: To follow-up gastroplasty postoperatorium patients in ICU and find relationship between medical and surgical complications and operation type (open vs laparoscopic procedures).
PATIENTS AND METHODS: 278 gastroplasty postoperatorium patients were admited to the ICU in 10 months follow-up; 69,7 % were open gastroplasty and 30,3 % were laparoscopic. We analised the early complications and it's correlation with surgical procedure type.
RESULTS: Bleeding ocurred in 85,8 % laparoscopic and 14,2 % open gastroplasty; athelectasy in 25,7 % laparoscopic and 74,3 % open gastroplasty; rhabdomyolisis in 66,7 % laparoscopic and 33,3 % open gastroplasty; gastrointestinal fistula in 83,4 % laparoscopic and 16,6 % open gastroplasty. Laparoscopic gastroplasty was responsable for all 4 peritonitis and death cases, in this series.
CONCLUSIONS: The laparoscopic procedure seems to be safe regarding the most frequent postoperatorium complication (athelectasy), but all death cases, related to gastrointestinal fistula and peritonitis, also ocurred in patients submitted to this kind of procedure. We must be prepared to the early identification of these complicated patients in the way to avoid death by rapid and agressive treatment of sepsis.

0285 THE BARIATRIC SURGERY POSTOPERATIVE IN INTENSIVE CARE UNIT (ICU): A SERIES OF 278 PATIENTS

M Knibel, F Muller, R Hatum, C Roderjan, E Guimarães, M Lugarinho, C Vasconcelos, A Vanzan, M Mattos
São Lucas Hospital, Rio de Janeiro, RJ, Brazil

Introduction: The Morbid obesity is defined as body mass index (BMI) of 35 associated to a serious illness or BMI larger than 40. The diseases that are aggravated or caused by the obesity include systemic arterial hypertension, cardiovascular diseases, diabetes mellitus, sleep apnea, osteoarthritis, thromboembolic disease, pseudotumor cerebrii, and the others. How often the clinical treatment for morbid obesity is ineffective, and then the surgical treatment has emerging.
Objective: To demonstrate a general vision of the clinical and epidemiological characteristics of those patients.
Materials and methods: We observed the imediate postoperative period of these patients in our Intensive Care Unit (ICU) during 10 months (n = 278). The dates analyzed were: age, sex, BMI associated illness, surgical technique, time of hospitalization, and another.
Result: 77% were females and 23% males. The average age was 36 years. 13% had BMI smaller than 40; 69% between 41 and 50; 15% between 51 and 60; 1,7% between 61 and 70; and finally 1,3% larger than 70. The videolaparoscopy surgery was accomplished in 30,3% of the cases and the conventional surgical technic (open) in 69,7%. The time of admition in UCI went from 1 to 2 days in 91,3%; 3 to 4 days in 6,4%; 5 to 6 days in 0,9% and larger than 7 days in 1,4%. The main associated illness observed were hypertension and diabetes mellitus (61,4% and 17,2% respectively).
Conclusion: Morbid obesity is one of the most important public health problems in our days and the bariatric surgery became an option to patients with 35 or higher body mass index (BMI) and obesity related complications (hypertension, diabetes, etc). Morbid obesity have growing incidence in the world, not being different in our country. The illness associated increase the complications, therefore the search for more solutions for this pandemia should be continuous, being of the bariatric surgery an alternative promising.

0286 GLUCOSE CONTROL AND MORTALITY RATE IN SEPTIC SHOCK: EARLY RESULTS FROM SEPSIS BRAZIL STUDY

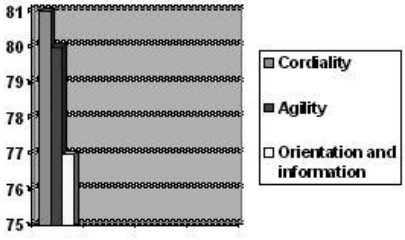
R Hatum, J Andrade, C David, J Pinto, M Knibel, M Damasceno, J Duarte, M Gomes
Federal University of Rio de Janeiro - Sepsis Brazil Study Group, Rio de Janeiro, RJ, Brazil

Background: Insulin therapy for septic patients glucose control have been advocated by Surviving Sepsis Campaign guidelines because of a nice study conducted by Van den Berghe et al in which the mortality was agressively reduced. The guidelines sugest a glucose level under 150 mg/dl as the aim to be achieved.
Objective: To analyse the septic shock subgroup in our study, regarding the glucose control and it influence on mortality.
Methods: We conducted a prospective cohort study in 50 hospitals of all regions of Brazil. The patients who were admitted or who developed sepsis during september 2003 were enrolled. They were followed until the 28th day. Sepsis diagnosis was made in accordance to the criteria proposed by ACCP/SCCM in 1992. We evaluated demographic features, APACHE II, SOFA (Sepsis-related Organ Failure Assessment) score, mortality, sources of infections, microbiology and interventions. We also recorded underlying diseases and lengh of stay (LOS).
Results: 2419 patients were identified and 409 (16.9%) filled the criteria of sepsis, severe sepsis or septic shock. 210 patients (51,4 %) formed the septic shock subgroup, with a mean APACHE II score of 22 and a overall mortality rate of 63,8 %. Three patients were excluded (1 lost follow-up and 2 lack glucose register).
Forty one patients (19,8 %) have glucose level under 150 mg/dl; none of them used insulin. Thirty four died (82,9 %) and 7 (17,1 %) were alive by 28th day.
One hundred sixty six patients (80,2 %) have glucose levels over 150 mg/dl. Fifty six patients (33,7 %) did not use insulin: 35 of them (62,5 %) died and 21 (37,5 %) were alive by the 28th day of follow-up. 110 patients (66,3 %) used insulin for glucose control: 64 (59,2 %) died and 46 (42,8 %) were alive by 28th day.
Conclusions: Fifty six (33,7 %) patients who were candidates to insulin therapy (glucose level over 150 mg/dl) did not received it. It shows the need of continuing education.
In those patients with glucose level over 150 mg/dl who received insulin, there was no statistical difference in mortality.
In thesurvivals of the subgroup with glucose level over 150 mg/dl (n=67), 46 (68,7 %) recieved insulin while 21 (31,3 %) did not. When we look to all patients receiving insulin in this subgroup (glucose over 150 mg/dl), 46 (41,8 %) lived, while 64 (58,2 %) died. It has statistical significance (p<0,01), and shows a protective role of insulin for those patients.
When we look all pacients receiving insulin (both subgroups, n=97 patients), 28 lived (28,8 %), while 69 (71,2 %) died. It suggests a positive influence beetwen insulin therapy and mortality.
The mortality rate in the group with glucose level under 150 mg/dl was even higher than in the glucose level over 150 mg/dl group (82,9 % X 59,6 %). It may be due to the difference in number of patients in the two groups or to another non-identified variable.

0287 SUBJECTIVE QUALITY INDICATORS AND MEDICAL TEAM PERFORMANCE: FORMAL MEASURING VALUE

M Knibel, L Castro, R Hatum
São Lucas Hospital, Rio de Janeiro, RJ, Brazil

INTRODUCTION: In current medical practice, medical team performance is more important or, at least, as important as technology development applied to health care. We conducted a study, through a satisfaction questionnaire (SQ) applied to patients, just after their discharge from our intensive care unit (ICU). The patient's opinion about the medical care during their stay in ICU was observed in concern to medical team cordiality, agility and information and orientation quality.
PATIENTS AND METHODS: The SQ was applied to 514 patients immediately after their discharge from a general ICU, from January to December 2003. Three medical team performance subjective quality indicators were evaluated: cordiality (item A), agility (item B) and patient information and orientation quality (item C). We established a goal of 80 % OF POSITIVE ANSWERS (considering 80 % or more as excellent performance, in patient's opinion).
RESULTS: 81 % of the SQ ACCESSED was positive for the item A, 80% for item B and 77% for item C. The established aim wasn't reached in item C, as showed by graphic 1.
CONCLUSIONS: TO MEASURE subjective quality indicators REPRESENTS AN USEFULL way to determinate occasional flaws of medical team behavior. We concluded that it is necessary to develop appropriate training and improvement oF communication SKILLS, by the way, a GREAT need of THE modern world.



0288 ICUCONNECT: COMMUNICATION BETWEEN INTENSIVE CARE CLINICIANS - IT'S ONLY A KEYSTROKE AWAY!

DC Kowal, K Rolls, AR Burrell
Intensive Care Coordination And Monitoring Unit

BACKGROUND: New South Wales, Australia, has 41 public intensive care units. 21 are located in the Sydney metropolitan area, 4 in the Greater Metropolitan area of Sydney, and 16 in the rural area. In units outside the metropolitan area, geographical distance from larger tertiary centres fosters a perception of professional isolation that may potentially impact on quality health care delivery to the critically ill patient.
A statewide email list-server, ICUConnect was created in December 2003 to establish a communication network for ICU managers and educators, promoting ICU service delivery partnerships. The challenge was reciprocity, transforming members seeking information into members providing information. This peer-supported network granted participants the opportunity to be involved in a larger, statewide picture.
METHODS: Initially, nurse managers and clinical nurse consultants were entered onto the list-server; however during 2004 the demand for membership expanded to include clinical nurses, academics, allied health personnel, doctors, and staff from other critical care areas. A database facilitates analysis of ICUConnect usage. In May 2004, the first Annual User Survey, comprising a series of closed questions was conducted.
RESULTS: From December 2003 to May 2004, ICUConnect membership grew from 130 to 191; comprising nurse managers or educators (73%), clinical nurses (6%), nurse research officers or equipment officers (8%), medical officers (9%) and allied health or academics (5%). 46% of membership came from tertiary hospitals in the Sydney metropolitan area, 27% of members worked in metropolitan or outer-metropolitan centres and 24% of members came from the rural sector.
Response rate to the survey, conducted via ICUConnect, was 27% (n51/191). 100% of respondents agreed that ICUConnect was beneficial to their ICU practice. 61% of respondents had made a new communication link with an ICU clinician outside their local area health service. Survey results highlighted that ICUConnect had addressed rural staff professional isolation with rural units contributing four times the number of queries as compared to metropolitan staff and metropolitan staff contributing five times the number of responses as compared with rural staff.
Review of ICUConnect emails highlighted that activity focused on sharing policies and procedures relating to: ventilation, drug administration, intravenous access, infection control, and renal support therapies. Workforce and patient care issues also dominated on-line activity.
CONCLUSION: ICUConnect has proven to be a valuable tool for intensive care clinicians within New South Wales, demonstrating that ICU planners can be responsive to the needs of their stakeholders. Despite large geographical distances, well-established peer-supported networks lessen the sense of professional isolation. With a current membership of over 400, ICUConnect continues to infiltrate intensive care services and divisions, not only in New South Wales but also around Australia.

0289 CLASSIFICATION AND CODIFICATION OF DIAGNOSES IN CRITICAL CARE MEDICINE

A Cadirola
PAMI I Hospital

Background: The clinical findings and diagnoses, are the core of information in patients record content. Computer-based records in Intensive Care Units will require the systematic use of Standard Vocabularies, to represent these data consistently and uniformly. This is essential to achieving the goal of built an Information Systems in Critical Care.
Objective: The key concept focused in this report was, to define which of the Major Classifications and Nomenclature Systems (ICD9-CM; ICD10 and SNOMED) available internationally represent more precisely the knowledge in the inpatients medical records, to be applied in Argentine Intensive Care Units.
Method: It was developed in three stages:
1- To ilustrate the prevalence of Diagnoses in Critical Medicine, it was searched the database from the Argentine Society of Intensive Care Medicine. The 5.436 inpatients records, were yielded 14.190 differents concepts. After frequency distribution, were identified 300 diagnoses.
2- It was built an Interface Language or Reference Vocabulary consisting on: diagnoses in free text and their corresponding codes in ICD9-CM, ICD10 and SNOMED (International Classification of Diseases, 10º and 9º revision and its Clinical Modification; and the Sistematized Nomenclature of Medicine)when were founded.
Considering comorbidities, procedures and chronic diseases, the list of terms increased to 603.
3- The Medical record source that hold this report was a corpus of 1001 patients records, obtained from Polivalent Intensive Care Unit, from Rosario City, Argentine, during a period of 22 months. Were selected the first more relevant diagnoses of discharge summaries(because they all togheter added more information). They totalized 2436 concepts, each of one was mapping to the interface vocabulary and was coded into ICD9-CM, ICD10 and SNOMED in order to measure expresivity and efficiency. Were defined dependent and independent variables.
Finally, were recodified considering the following terms:
"Success" or "Match"= if the code completely captured the meaning of the concept; "Unsuccess" or "No Match"= if no existed in the system.
Results:
The global expresivity measured in terms of percents of matched concepts was: 98.7% for SNOMED ; 87.4% for ICD10 and 88.9 for ICD9-CM.
SNOMED showed more expresive than ICD10 and ICD9-CM.
Conclusions:
SNOMED was the nomenclature more representative to be used in Argentine Critical Care Units.
The International Classification of Diseases, 9º and 10º revision failed to capture several prevalents diagnoses in Critical Medicine(cardiology, sepsis and hydroelectrolytics disorders)
Recomend the use of SNOMED to classify and coding diagnoses in this domain.
It will be desirable that the Interface Vocabulary should be applied to future researchs in our country.

0290 POLITRAUMA EMERGENCY ROOM IN PORTO ALEGRE, BRAZIL

KF Prado, MV Furtado, APV Freitas, CR Neumann
Hospital de Pronto Socorro de Porto Alegre, Brazil

Background/ Objectives: The epidemiological aspects of emergency room change according to region, population assistance, institution and prehospital care. The knowledge of the epidemiological aspects provides improvement of the quality of the assistance. The present study describes the characteristics of patients assisted at the Pronto Socorro Hospital of Porto Alegre (Brazil) as well as analyzes the pre-hospital care of trauma victims at this same hospital
Methods: This is a prospective observational study in a level 1 trauma center, performed from April to July 2004. We registered all the patients evaluated in a period concerning the demographic aspects, type of diseases (trauma or clinical), patients' destiny after initial evaluation, death in the emergency room, severity indicators (orotracheal intubation, oxygen saturation < 95%, shock index > 0.9, systolic < 90 mmHg and Glasgow Come Scale < 9). In trauma patients we also registered: revised trauma score (RTS, indicates gravity if < 4), trauma type and pre-hospital care. The prehospital care was evaluated through provided ventilatory and homodynamic support for the patients with severity indicatives.
Results: A total of 1036 patients were evaluated during that period. We showed preliminary results for 260 patients selected by convenience. The data regarding clinical and trauma patients are listed below: (see table).
In the clinical cases, the more frequent diagnoses were: hemorrhagic stroke (20%), acute cardiac arrhythmias (9.1%), cardiac arrest (9.1%) and cardiogenic pulmonary edema (9.1%). The more frequent trauma was: motor vehicles incident (28.1%), running over (18%), falls (23.3) and gunshot injuries (14.3%). The most frequent trauma injuries were: extremity (45.7%), head (34.6%), thorax (31.2%) and abdomen (19.4%). The general mortality for the trauma patients was 3,1%.
The qualified prehospital assistance for the trauma patients occurred in 79,4%, for the others aid was supplied by police and popular. When the qualify prehospital assistance was provided, the tracheal tube was obtained in 7.4% and 33% in the patients with oxygen saturation < 95% and Glasgow < 9 respectively. The rescue team provided venous access in 59.1% in the patients with systolic < 90 mmHg; 58.6% with SI <0.9 and 64% when Glasgow < 9.
Conclusions: There are more trauma patients than clinical ones because of the hospital characteristics; however the clinical patients were more critical. The most important trauma mechanism is car accidents. The majority of trauma patients had low to moderate gravity, but we identified troubles in prehospital assistance, most of them regarding identifying and caring of hypoxemia.

Characteristic	Trauma n(%)	Clinical n(%)	P
Number	191	69	
Male	166 (86.9)	36 (52.2)	<0.001
Age (average +/- sd)	31.6 +/- 16,1	59.7 +/- 19,8	
SaO2 < 95%	27 (16.5)	24,2 (42.1)	<0.001
Glasgow < 9	18 (9.9)	27 (39.7)	<0.001
Shock (SI > 0.9)	38 (21.7)	23 (38.3)	0.01
Tube needed	19 (9.9)	26 (37.7)	<0.001
RTS <4	6 (3.9)	-	
Hospitalization	155 (82.4)	54 (80.6)	
Death in emergency	3 (1.6)	7 (10.4)	0.003
ICU needed	21 (13.5)	25 (46.3)	
Surgery needed	43 (27.7)	4 (7.4)	

0291 ASSOCIATED FACTORS TO THE ADEQUATE DEPTH OF INSERTION OF THE OROTRACHEAL TUBE IN CHILDREN

JP Piva[1], GU Eckert[1], PCR Garcia[1], FU Bueno[1], E Baldasso[2]
1 UTI Pediátrica – Hospital São Lucas da PUCRS – Porto Alegre (Brazil); 2 UTI Pediátrica - Hospital de Clínicas de Prto Alegre (Brazil)

>Background: Tracheal intubation is a vital procedure that enable keep airway opened. There is no consensus regarding which formula is the most accurate to predict the depht of insertion of the tracheal tube in children.
Objective: Study the associated factors to the correct position of the orotracheal tube in children and evaluate the accuracy of four formulas used to estimate the depht of insertion of the tracheal tube.
Methods: Survey evaluated all tracheal intubation that ocurred in two PICU university associated (H São Lucas e H de Clínicas de Porto Alegre - Brazil) between August 2004 and February 2005. We got data about weight, height, sternal lenght, oro-tragus-furcular lenght and body surface. Register and post-intubation x-ray were reviwed. An interview with the physician responsible for the intubation procedure. Data were analyzed with Medcalc statistical program. Variables were described as median (p25th – p75th), Chi square test was used to analyze categorical variables and Spearman's coefficient (rs) for correlation.
Results: There were 126 orotracheal intubations in study period, 56,3% were boys. The median age was 7 (3-24) months, weight was 7,3 (5-12) kg, height was 67,5 (59-83,5) cm, body surface was 0,37 (0,28-0,52) m2, sternal lenght was 10 (9-11) cm, oro-tragus-furcular lenght was foi 18 (17-21) cm.
The tube was considered in the right position (between T2-T3 vertebra) in 41,3% of the post-intubations x-rays. Weight, height, sternal lenght, oro-tragus-furcular lenght, body surface, tube diameter and age showed a strong correlation (rs > 0,7) with ideal depht of insertion of the orotracheal tube. However, the four formulas that use this variables showed an efficacy in determinate the depht of insertion of the tracheal tube at least 55% of times.
The use of any method to estimate the correct depht of insertion of th orotracheal tube was not associated with a significantly increase in the rate of hits.
Conclusions: The depht of insertion of orotracheal tube hits rate is around 40%. New methods with better efficacy to estimate this measure in children need to be developed. The formula used did not showed a satisfactory performance.

0293 EFFECTS OF PROPOFOL ON ENDOTOXIN-INDUCED ACUTE LUNG INJURY IN RABBITS

C-Y Jeong, S-S Chung, S-H Kwak, J-I Choi, J-T Park
Chonnam National University Hospital, Gwangju, Korea

Background: This study was undertaken to clarify the effects of propofol on endotoxin-induced acute lung injury.
Methods: Rabbits were randomly assigned to one of four groups. Each group received intravenous infusion of saline only, saline and Escherichia coili endotoxin, propofol (1 mg/kg bolus, then 5 mg/kg/hr) and endotoxin, or propofol (4 mg/kg bolus, then 20 mg/kg/hr) and endotoxin respectively. Infusion of saline or propofol was started 0.5 hr before the infusion of saline or endotoxin, and continued for 6 hr thereafter. The lungs of rabbits were ventilated with 40% oxygen. Mean blood pressure, heart rates, arterial oxygen tension, and peripheral blood leukocyte and platelet count were recorded. The wet/dry weight ratio of lung and lung injury score were measured, and analysis of bronchoalveolar lavage fluid was done.
Results: Endotoxin decreased arterial oxygen tension and peripheral blood leukocytes and platelets count. And it increased wet/dry ration of lung, lung injury score, leukocytes count, % of PMNL cells, and concentrations of albumin, thromboxane B2 and IL-8 in bronchoalveolar lavage fluid. Propofol attenuated all these changes except the leukocyte count in peripheral blood.
Conclusions: Propofol attenuated endotoxin-induced acute lung injury in rabbits mainly by inhibitng neutrophil and IL-8 responses, which may play a central role in sepsis-related lung injury.

0294 BEE STINGS OF CHILDREN – WHEN TO PERFORM ENDOTRACHEAL INTUBATION ?

R Tome
Pediatric Intensive Care- western Galille Hospital and Department of Anesyhesiology. Bnai - Zion Med

Introduction
Oropharyngeal stings, although rare, have the added potential to cause life-threatening airway obstruction. Preventive tracheal intubation is one of such measures and we deem of interest to report four cases of children that were stung on the tongue and treated in the pediatric intensive care of the Western Galilee Hospital (Naharia, Israel).
Report of cases
Four children aged between tow and seven years old was admitted to our hospital after suffering a bee stung on the tongue or lips. The first tow children developed early extensive edema of the face with respiratory distress.
Discussion
The first two cases developed breathing difficulties and had to be intubated because of threatening signs of airway obstruction. These two children had been stung before and it is conceivable that they had more severe symptoms than the other two children presented. The other tow children presented without any respiratory difficulties but were preventively intubated.
The decision of elective intubation in these two cases, notwithstanding the risk of intubation and mechanical ventilation with the attendant sedation, was based on the several considerations: (1) the literature lacks substantial data on whether patients without respiratory distress immediately after the sting do or do not proceed to more severe problems subsequently, and the data are even more limited in patients without history of past stings, therefore an elective wait-and-see strategy was deemed unsafe at the time, especially (2) in light of our very fresh previous experience with the first two more severe cases; (3) one of these oro-facial bee sting events occurred in the rural setting, i.e., far from appropriate medical facilities that would have permitted supervision and monitoring in the un-intubated state pending possible symptomatic deterioration and emergent intubation (if needed) during the first few hours after the event.
An argument could be made for the aggressive treatment of children with hymenoptera stings in the oropharyngeal area because of the potential for threatening airway obstruction exists, even though the initial presenting symptoms may be minimal. On the other hand, concerns over unnecessary endotracheal intubations in many stung children once such an aggressive treatment protocol is adopted would also be justified. Additional specific concerns over local upper airway edema should exist with the intention to perform endotracheal intubation once impending airway compromise occurs, or, should laryngeal edema prove intubation difficult or impossible, cricothyroidotomy and emergent tracheotomy must be performed. Furthermore, we deem that the treatment of minimally symptomatic bee sting victims in the rural and remote setting should include elective endotracheal intubation while the patient is transported to an intensive care facility. Once the airway is secured, mechanical ventilation is to be instituted for at least 24 hours, as was the case with the children presented in this report.

0295 ΔPCO2/C(A-V)O2 RATIO TO PREDICT ANAEROBIC METABOLISM IN PATIENTS WITH HYPERLACTATEMIA AFTER COMPLICATED CORONARY ARTERY BYPASS GRAFTING SURGERY

M Balciunas, R Skutaite, V Jurkuvenas, A Baublys
Vilnius University Hospital Santariskiu Clinic

Background/Objectives. Increased lactate (Lac) levels may follow cardiopulmonary bypass (CPB) without signs of global tissue hypoxia. Threshold value of 1.4 the venoarterial blood PCO2 difference (ΔPCO2)/arteriovenous O2 content difference (C(a-v)O2) ratio seems to be more reliable marker of anaerobic metabolism. The aim of our study was to test whether ΔPCO2/C(a-v)O2 ratio can predict anaerobic metabolism in hyperlactatemic patients (pts) with acute heart failure after coronary artery bypass grafting (CABG) surgery.
Methods. Prospectively we obtained 66 sets of hemodynamic, blood gases and arterial Lac. measurements in 24 pts. after elective CABG surgery requiring CPB, hospitalized between December 2003 and October 2004. At the time of study all pts. needed epinephrine infusion, intra-aortic balloon pump, mechanical lung ventilation and underwent pulmonary artery catheterization. We measured cardiac index (CI), mixed venous oxygen saturation (SVO2), arterial Lac. levels and calculated oxygen delivery (DO2), oxygen consumption (VO2), oxygen extraction ratio (O2ER), ΔPCO2/C(a-v)O2, ΔPCO2, C(a-v)O2. All data are expressed as Mean±SD and compared using paired t-test. P<0.05 was significant.
Results. According lactate level all data were devided into two groups. Group 1 - 22 results with lactate<5mmol/L (Mean 2.5±1.2) and group 2 - 44 results with lactate≥5mmol/L (mean 9.4±2.9). Data are shown in table 1.

Data	Lac<5mmol/L	Lac≥5mmol/L	p value
CI, L/min/m2	2.8±0.8	3.0±0.9	0.39
SVO2, %	66±11	73.6±12.3	0.08
DO2, ml/min/m2	414.1±129.3	480±185.6	0.24
VO2, ml/min/m2	131±30.8	108±32.8	0.06
O2ER, %	32.7±11.1	25.3±11.8	0.09
ΔPCO2, mmHg	5.2±2.4	6.6±3.9	0.2
C(a-v)O2	4.97±1.9	3.83±1.6	0.1
ΔPCO2/C(a-v)O2	1.1±0.55	1.93±1.45	0.02

Conclusion. Only
PCO2/C(a-v)O2 ratio significantly differed between two groups when 5 mmol/L lactate cut off value was taken.

0296 USE OF ANTIBIOTICS ACTIVE AGAINST MULTIRESISTANT GRAM-POSITIVE COCCI IN CRITICALLY ILL PATIENTS ADMITTED TO THE ICU

F Alvarez-Lerma[1], Y Diaz Buendia[1], B Alvarez[1], E Cereijo[1], O Rodriguez[1], V Gonzalez[1]
1 Hospital del Mar, Barcelona (Spain); 2 Hospital General Universitario, Alicante; 3 Hospital de la Princesa, Madrid; 4 Hospital Clinico Universitario, Valencia; 5 Hospital Miguel Servet, Zaragoza

The use of antibiotics active against multiresistant Gram-positive (MR-GPC) cocci has increased in recent years in the intensive care medicine services or units (ICU).
Objectives: To determine the frequency of antibiotic usage against MR-GPC, the reasons for prescribing this agents, and forms of administration in critically ill patients admitted to the spanish ICU.
Materials and methods: Observational, prospective, open-label, and multicenter study (39 ICUs). The use of vancomycin (VAN), teicoplanin (TPN), qinupristin/dalfopristin (Q/D), and linezolid (LZD) were studied. Data on demographics, severity of illness (APACHE II score), infection types, and antibiotic use (empirical or directed, monotherapy or combined treatment) were recorded.
Results: A total of 843 indications in 819 patients admitted to 39 ICUs (median 21, maximum 80, minimum 5) were studied. VAN prescription predominated, 435 (51.6%) followed by TPM, 309 (36.7%), and LZD, 99 (11.7%). No case of Q/D treatment was registered. In 34 of the 843 prescriptions, antibiotics were used prophylactically. The infection types were classified as community-acquired infection in 146/809 (18.0%), extra ICU-acquired nosocomial infection in 174/809 (21.5%), and ICU-acquired nosocomial infection in 488/809 (60.3%). Antibiotics were prescribed as empirical therapy in 532 (65.7%) of 809 treatment courses (VAN 65.5%, TPN 68.2%, LZD 59.2%), and diagnosis has been confirmed in more than half of the cases. In 705 (88,3%) cases, one or more antibiotics were given in combination (VAN 88.7%, TPN 91.7%, LZD 74.5%). In 229 cases (28.3%), the initial antibiotic regimen was subsequently modified (VAN 34.7%, TPN 23.8%, LZD 15.3%; statistically significant difference VAN vs. TPN and LZD, $P < 0.001$) because of clinical failure in 60 (26.2%) cases, isolation of a methicillin sensitive microorganism in 34 (14.8%), lack of confirmation of the diagnosis of infection in 55 (24%), and other reasons in 80 (35%). The initial antibiotic regimen was modified due to clinical failure more frequently among patients given TPN and VAN than those treated with LZD (53.3%, 45% vs. 1.7%, $P = 0.006$). Of the 229 cases with treatment modification, this was indicated as rescue treatment in 130 (56.8%), including TPN in 13, VAN in 13, LZD in 43 and other antibiotics in 61 cases.
Conclusions: VAN is the antibiotic most frequently used in Spanish ICUs for the treatment of nosocomial infections caused by multiresistant Gram-positive cocci. Linezolid is the agent most frequent used for rescue treatment. Vancomycin has been significantly associated with therapeutic changes. In case of vancomycin and teicoplanin, reasons for changing the antibiotic regimen were significantly related to clinical failure.

0297 HIGH-FREQUENCY OSCILLATORY VENTILATION IN PEDIATRIC PATIENTS WITH ACUTE RESPIRATORY FAILURE

N Ben Jaballah, A Khaldi, K Mnif, A Bouziri, S Belhadj, K Kazdaghli
Hôpital d'Enfants de Tunis, Tunis, Tunisia

Background: High-frequency oscillatory ventilation (HFOV) is now frequently used as rescue treatment of pediatric patients with respiratory failure. However, there are limited number of clinical prospective studies on the use of HFOV in these patients.
Objective: The objective of this study was to, prospectively, evaluate the effectiveness of HFOV in pediatric patients with acute hypoxemic respiratory failure, failing conventional ventilation (CV).
Methods: Twenty consecutive pediatric patients (ages 12 days to 5 years) with acute respiratory failure and diffuse alveolar disease (pneumonia: 14; sepsis with acute respiratory distress syndrome: 3; severe upper airway obstruction with pulmonary oedema: 2; salicylate intoxication with acute respiratory distress syndrome: 1), failing CV (PaO_2/FiO_2 ratio of 62.6 ±13 mmHg, alveolar-arterial oxygen difference (P(A-a)O2) of 559±79.6 mmHg, Oxygenation index (OI) of 26.3±7.3) were managed with HFOV and prospectively evaluated. Mean length of CV, prior to instituting HFOV, was 24.7±13 hours. Seven patients had a severe pulmonary air leak prior to instituting HFOV. Arterial blood gases, OI, P(A-a)O2 and PaO_2 / FiO_2 ratio were prospectively recorded prior to HFOV (0h) and at predetermined intervals throughout the course of the HFOV protocol and compared using the one-way Friedman rank-sum procedure and a two-tailed Wilcoxon matched-pairs test.
Results: Nineteen patients (95 %) responded to HFOV. There was an overall improvement in gas exchange on HFOV. After one hour of HFOV, mean $PaCO_2$ decreased from 70.7 ±41 to 41.5±10 mmHg ($p=0.002$) and remained within the target range thereafter. There was a significant increase in mean PaO_2/FiO_2 ratio as early as one hour ($p = 0.003$) and a significant decreases in P(A-a)O2 and OI as early as one and 4 hours, respectively ($p= 0.001$ for both). All these improvements were sustained during the first 12 hours of HFOV ($p \leq 0.05$ for all comparisons). One patient, who had evidence of pulmonary interstitial emphysema, before instituting HFOV, developed pneumothorax on HFOV. No significant others complications associated with HFOV were detected. Fifteen patients (75%) survived to hospital discharge. Length of mechanical ventilation, HFOV and supplemental oxygenation in the survivals were 10±7 days, 8±5 days and 11±7 days, respectively. Among the five patients died, only one died as a consequence of respiratory failure.
Conclusion: in pediatric patients with acute respiratory failure, failing CV, HFOV improves gas exchange in a rapid and sustained fashion and provide a good outcome.

0298 THE ASSOCIATION OF MANNOSE-BINGING LECTIN WITH THE SEVERITY AND PROGNOSIS OF SEPSIS

JW Huh[1], KY Song[2], JS Yum[3], EM Park[1], SB Hong[1], CM Lim[1], YS Koh[1]
1 Asan medical center, University of Ulsan College of Medicine, Seoul, South Korea; 2 University of Ulsan College of Medicine, Seoul, South Korea; 3 Dobeel Corporation, Seongnamsi, Gyeonggi, South Korea

Background: Individuals with deficient in mannose-binding lectin (MBL)-an important component of the innate immune system- have been reported to be susceptible to infection. We investigated the association of the serum level of MBL with the severity and prognosis of sepsis.
Methods: From 2004. May to 2004. Dec, we enrolled 55 patients receiving intensive care for sepsis. Patients were divided into severe sepsis group (mean age 54.6±17.0, M:F 13:6) and septic shock group (mean age 61.2±14.1, M:F 21:15). Serum MBL concentrations were measured using the ELISA kit. We have analyzed two single nucleotide polymorphisms (SNPs) of MBL2 gene- one at promoter (-550), one at coding (Gly54Asp) regions-in these patients and have correlated the genotype with the serum concentration.
Results: 1) Severe sepsis group was low sequential organ failure assessment (SOFA) score (6.9±2.6 vs. 12.5±4.0, $p<0.05$) and low mortality rate (10.5% vs. 47.2%, $p<0.05$) than septic shock group. The serum MBL level of severe sepsis group was higher than septic shock group (3.0±2.2 g/mL vs. 1.7±1.5 g/mL, $p<0.05$). 2) The HH, HL, and LL genotypes at -550 polymorphism were correlated with high (mean 3446μg/L), medium (mean 2563 μg/L), and low (mean 1210 μg/L) MBL levels ($p<0.05$). The AA, AB, and BB genotypes at codon 54 polymorphism were correlated with high (mean 3127μg/L), medium (mean 571 μg/L), and low (mean 0 μg/L) MBL levels ($p<0.05$). 3) Overall 28-day mortality was 34.5% (19/55) and patients with low MBL concentration (<2 μg/mL) showed higher mortality (45.5% vs. 18.2%, $p<0.05$) than patients with high MBL concentration (≥2 μg/mL).
Conclusions: Our results suggest that the MBL gene polymorphisms are correlated with circulating levels and serum MBL level may influence on the severity and prognosis of sepsis

0299 DISSEMINATED STRONGYLOIDES INFECTION IN COPD PATIENTS USING CORTICOIDS

M Jabur[3], SMA Lobo[2], JM Pozetti[1], JC Brufato[1], CAC Mendes[2], EFF Sivieiro[2], GL Ciorlia[2], LA Mazzetto[2], MRL Jabur[2]
1 Hospital AUSTA; 2 FAMERP; 3 FAMERP / Hospital AUSTA

Strongyloidiasis, which is caused by the nematode Strongyloides stercoralis, may have a disseminated and fatal course. We report 3 cases of COPD patients under chronic corticosteroid presenting fatal or complicated Strongyloids infection. Pulmonary infiltrates on chest radiograph, Acute respiratory distress syndrome and rapid clinical deterioration were found in all patients. Strongyloides larvae were identified on Gram stain and culture after bronchoalveolar lavage. Microscopic analysis with special stains were obtained from bronchoscopy and skin lesions biopsies and revealed Strongyloides larvae. Eosinophilia was absent in all 3 cases. Gram-negative or polymicrobial bacteremia secondary to migration of larvae through the bowel wall is a common presentation of Strongyloides disseminated infection and occurred in the 2 patients who died of progressive respiratory failure and multiple organ failure. Screening for this potentially fatal but curable infection should be considered in the setting of ICU patients with immunosuppressive therapy.

0300 A CHANGE MANAGEMENT PROJECT TO IMPROVE BREASTFEEDING INITIATION WITHIN A PEDIATRIC INTENSIVE CARE UNIT USING AN ACTION RESEARCH APPROACH

GM Thompson
Our Lady's Hospital For Sick Children, Dublin, Ireland

Background: This project was aimed at improving breastfeeding initiation within an Irish paediatric intensive care unit. There was a cohort of infants in this unit not receiving any breast milk. Ireland's breastfeeding initiation rate of 36.9% is the lowest in Europe. A collaborative interdisciplinary team identified possible actions to improve breastfeeding facilitation within this environment.
Objectives: To improve breastfeeding initiation by a collaborative planned change, to increase staff awareness of the importance of breast milk for intensive care patients, and by ensuring that parents of newborn infants receive accurate, consistent and timely information.
Methods: An action research approach was used as this is specifically designed to bridge the gap between theory, research and realities of practice. A checklist to guide nursing practice was developed and introduced to the admission process, documenting that breastfeeding has been discussed and that written information has been given by the admitting nurse. The context of the change within this organization is described and change issues are identified. The literature pertaining to breastfeeding, change management and action research are reviewed. The driving and restraining forces and how this change was implemented in practice are outlined. The difficulties encountered and the complexities of the underlying issues are addressed.
Results: Audits of admission group both prior to and post introduction of the checklist showed an improvement from 17% of admissions receiving any breast milk to 56%. The number of infants continuing to receive breast milk on discharge has risen from less than 10% to 43%. The quantitative data arising from the audit process is presented graphically.
Conclusions: An interdisciplinary collaborative process identified many factors, which impede breastfeeding in this context concurring with the literature. A change to nursing practice was introduced which was within the autonomy of the change agent and time frame available. It achieved the planned objectives, introducing a process ensuring parents receive breastfeeding information.Thus giving them opportunity to make an informed feeding decision, based on their new and often unexpected crisis situation. Secondly, raising staff awareness as to the importance of breastfeeding in this environment. Change agents need to consider the context and culture of an organisation before implementing change, as issues in practice do not occur in isolation. Change is more likely to be acceptable if those affected participate in planning for it. The project evaluation undertaken to date suggests that, in spite of some problems with compliance this change has made a positive impact on practice. There are more babies receiving breast milk and more babies still breastfeeding on discharge.
The paediatric intensive care nurse has a unique opportunity for educating parents about the health benefits of breast milk for their sick baby.

0301 PROGNOSTIC SCORE IN THE INTRACEREBRAL HEMORRHAGE

ME Wallberg, ED Soloaga, MH Pérez, FJ Lombi, KL Lozano, SA Quadrelli, MA Veltri, FJ Chertcoff, JE Ubaldini
Intensive Care Unit – British Hospital – Buenos Aires - Argentina

Background: Intracerebral hemorrhage (ICH) explains 10% to 15% of all stroke patients admitted to a general hospital. ICH shows high mortality rates and considerable morbidity among survivors. A predictive Score of 30 day mortality has been proposed. This ICH Score results from the combination of different variables: Glasgow Coma Scale 3-4 (=2 points), 5-12 (=1), 13-15 (=0); age ≥80 years yes (=1), no (=0); infratentorial location yes (=1), no (=0); ICH volume ≥30 cc (=1), <30 cc (=0); presence of intraventricular hemorrhage yes (=1), no (=0). There are not available scores to predict neurological recovery in the long-term among survivors.
Objetives: To identify if the ICH Score predicts 30 day mortality and recovery at 6 and 12 months (evaluated by Glasgow Outcome Score –GOS-) in a population of patients admitted to our Intensive Care Unit (ICU) because of an ICH.
Methods: We prospectively included all the patients (> 17 year-old) admitted at the ICU of the British Hospital between June 1, 2001 to January 1, 2005 because of ICH. Patients with intracerebral hemorrhage caused by trombolitic agents or bleeding from an intracranial aneurism or an arterio-venous malformation were excluded. Patients were grouped according the ICH Score and 30 day mortality was evaluated. Telephonic follow-up was completed at 6 and 12 months.
Results: We studied 61 patients, 70,26 year-old (SD 11,02), Score APACHE II: 13,93 (SD 7,04). The ICU stay time was 12,51 days (SD 14,66) and complete hospital stay time was: 17,36 days (SD 17,36).
Twenty-six patients (42,6 %) showed an ICH Score 0-1 and 35 patients (57,3 %) an ICH Score >1. Patients with ICH Score 0-1 were not different from patients with ICH Score >1 concerning to age (68,1 ± 9,2 vs. 71,8 ± 12 years) or arterial hypertension as etiology of the ICH (68 vs. 72,2 %). Score APACHE II of patients with ICH Score 0-1 was significantly lower (9,4 ± 4 vs. 17,2 ± 6,9 p< 0.0001).
Mortality of ICH Score >1 patients was significantly higher (30 day mortality: 50% vs. 4,1%, p<0.0001). When followed at 6 months 42.7% of patients showed still severe neurological impairment (GOS <4). Percentage of patients with GOS <4 at 6 months was significantly lower in the group of ICH Score 0-1 than in the remaining patients (36,8% vs. 84.8%, p<0.0001). There was a high correlation between the GOS value at 6 and 12 months (r = 0.96, p<0.0001). There was a negative correlation between the ICH at admission and the GOS at 6 months (r = -0.49, p=0.0002) and at 12 months (r = -0.47, p=0.0004).
Conclusions: ICH store has been useful to predict 30 day mortality and neurological impairment at 6 and 12 months.

0302 OUTCOME OF CHILDREN WITH RENAL DYSFUNCTION AND RENAL REPLACEMENT THERAPY IN A PEDIATRIC INTENSIVE CARE UNIT

EJ Troster, A Watanabe, CF Oliveira, VHK Koch, FAC Vaz
Instituto da Criança - Universidade de São Paulo

BACKGROUND: Renal dysfunction is a common problem in intensive care unit, and occurs predominantly as part of a multi-organ dysfunction syndrome (MODS) in critically ill adults and children. Despite the new modalities of renal replacement therapy, the morbidity and mortality remain high. Data about renal dysfunction (RD) in pediatric MODS is scarce.
OBJECTIVE: To evaluate the prevalence and distribution of RD in our intensive care unit and the outcome related to other dysfunctions and renal replacement therapy (RRT) needs.
METHODS: Data base from Pediatric Intensive Care Unit – during the period of March 2002 to December 2004 were reviewed. All patients were evaluated according to Wilkinson criteria* for failure of specific organ systems. RD was defined as BUN > 100 mg/dL or serum creatinine > 2mg/dL or indication of RRT. Peritoneal dialysis (PD) was the preferred method of RRT. Hemodialysis (HD) was prescribed to patients with impossibility of PD treatment or PD failure.
RESULTS: Total number of admissions: 1146 pts (566 girls, 580 boys), age: 64 mo (range 0.7-247 mo). RD: 15.1% (173/1146) during intensive care therapy, 7.4% (85/1146) at admission. Eighty three children representing 7.2% of all admissions and 47.4% of patients with RD, needed RRT (50 on PD and 30 on HD and 3 on both).
The general mortality was 18,4%, and distributed by number of organ dysfunction (table 1). The mortality of patients with RD was 47.4% (82/173, 51,5% on HD and 46,2% on PD). Patients with RD presented more organ dysfunctions (44.7% vs 23% with 2 or more organ dysfunctions) and had more positive blood cultures if compared to patients with no RD. Blood culture positivity was 51,5 % (11/33) and 44,23% (23/52) in patients on HD and on PD, respectively (RR = 0,86 (0,55-1,35) P=0,66).

Number of organ dysfunction	Mortality	Mortality associated with renal dysfunction
0	0	-
1	2,8%	0
2	19,7%	0
3	48,2%	45,8%
> 3	75%	75,5%

CONCLUSION: The higher mortality of patients with RD could be correlated to the number of other organ dysfunctions, and is comparable to data on adults. Although blood culture positivity was more prevalent in children with renal dysfunction, it was associated with higher mortality of all patients. Despite the presence of venous catheter for HD, there is no statistical significant difference in incidence of positive blood culture between patients that received HD treatment and PD treatment.

0303 ADRENAL STATUS IN CHILDREN WITH SEPTIC SHOCK

R Lodha, M Sarthi, S Vivekanandhan, NK Arora
All India Institute of Medical Sciences, New Delhi, India

Background/Objectives: There is paucity of data on the magnitude of adrenal insufficiency in septic shock, especially in children. We conducted a prospective study to determine the prevalence of adrenal insufficiency in children with septic shock.
Methods: We performed cortisol estimation at baseline and post low dose Synacthen (1 µg) stimulation at 30 and 60 minutes in children with fluid refractory septic shock admitted in our PICU. Children with known adrenal insufficiency and with history of steroid ingestion were excluded. Basal cortisol levels <7 µg/dl and/ or peak cortisol level <18µg/dl were used to define adrenal insufficiency. An increment of <7 µg/dl post stimulation was taken as indication of poor adrenal reserve.
Results: 28 children (14 girls) with septic shock were included; mean age: 39.8±37.27 months. The mean (SD) PRISM score was 20.75 (8.67). Fifteen (53.5%) children survived. The mean cortisol values at baseline, 30 min and 60 min post stimulation were 96.1 ±69.8 µg/dl; 115.5±94.9 µg/dl; and, 130.3±108.2 µg/dl. None of the patients fulfilled the definition of adrenal insufficiency. However, seven patients had an increment of less than 7 µg/dl after administration of Synacthen. Of these 7 patients, 4 died; while of the 21 patients with a greater increment, 9 died (difference not significant). All the cortisol values (basal and post stimulation) were higher in survivors than in non survivors; the differences were not statistically significant (Table 1).

Table 1: Cortisol [Mean (SD) [µg/ dL] values in children with septic shock.

	Survivors (n=15)	Nonsurvivors (n=13)	P
Basal cortisol	114.04 (83.79)	75.59 (43.49)	N.S.
Cortisol 30 min post stimulation	139 (116.75)	88.23 (53.56)	N.S.
Cortisol 60 min post stimulation	152.8 (125.5)	104.47 (81.43)	N.S.
Increment in cortisol at 30 min	25.12 (51.5)	12.64 (23.98)	N.S.
Increment in cortisol at 60 min	38.76 (53.94)	28.88 (55.08)	N.S.

Conclusions: All children with septic shock had elevated levels of cortisol. However, 25% of children had suggestion of poor adrenal reserve as reflected by increment in cortisol levels of < 7 µg/dl after administration of low dose Synacthen. Poor adrenal reserve is common in children with septic shock.

0304 CIRRHOTICS ADMITTED TO THE INTENSIVE CARE UNIT: RISK FACTORS AFFECTING 6 WEEK SURVIVAL

C Hui, S Shaw
Royal Free Hospital, London, UK

Background
There is a high mortality in cirrhotics admitted to Intensive Care. Most ITU scoring systems are derived from populations without many cirrhotics.
Methods
We have used a multivariable logistic regression model to study 312 cirrhotic patients admitted to our intensive care unit. 40 variable were observed.
Results
A specific prognostic scorr for these patients in this large cohort study was derived. Key markers of organ dysfunction were prognostic: Fi02(respiratory),Bilirubin(Hepatic) Urea (renal, hepatic) lactate (hepatic, renal) as well as 3 or more failing organs (resulting in 90% mortality)
Conclusion
The established ICU scores, SOFA and MELD which contain the above variables, or their surrogates offerd better prediction than APACHE II or Child Pugh scores

0306 HALOTHANE, SEVOFLURANE AND ISOFLURANE. DOES THE HALOGENATED ANESTHETIC MAKE A DIFFERENCE IN GASTROINTESTINAL TONOMETRIC DURING ANESTHESIA IN DOGS SUBMITTED TO HEMORRHAGIC SHOCK AND RESUSCITATION?

AE Silva[1], JRC Braz[1], WM Roberto[1], LR Carvalho[2]
1 UNESP - Faculdade de Medicina, Botucatu, Estado de São Paulo, Brazil; 2 UNESP - Instituto de Biociências, Botucatu, Estado de São Paulo, Brazil

Backgrounds/Objectives- The gastrointestinal tract is one of the earliest affected by hypoperfusion and may be one of the primary triggers of multiple organ system failure. Intense vasoconstriction occurs early and frequently leads to a nonreflow phenomenon, even when the macrocirculation is restored after intravascular volume replacement. Thus, the hemodynamic and systemic oxygenation variables may not reveal splanchnic hypoperfusion, resulting in a failure to recognize inadequately treated hemorrhagic shock. Halogenated anesthetics may play an important role in the pathogenesis of cardiocirculatory changes, oxygen transport variables and oxygen demands for specific organs, such as the gastrointestinal tract. In a model of hemorrhagic shock in dogs, we compared the early gastrointestinal tonometry effects of three halogenated anesthetics: halothane, sevoflurane and isoflurane.
Methods - The study was approved by the Animal Care Committee. Thirty mongrel dogs (20 ± 2.9 kg) were anesthetized with halothane (H group; n=10), sevoflurane (S group; n=10) and isoflurane (I group; n=10); anesthesia was maintained at 1.0 minimum alveolar anesthetic concentration: 0.89%, 2.4% and 1.4%, respectively. All dogs were mechanically ventilated and subjected to splenectomy. A gastric air-tonometer was placed in the stomach for intramucosal CO2 gastric (PgCO2) determination and for the calculation of intramucosal pH [pHi=pHa-log (PgCO2/PaCO2)]. The dogs were hemorrhaged (28 to 30 mL/kg) to hold mean arterial pressure (MAP) from 40 to 50 mmHg over 45 min and then resuscitated with the removed blood volume. Hemodynamic (heart rate, MAP, central venous pressure, mean pulmonary arterial pressure, pulmonary artery occlusion pressure, stroke volume index, cardiac index, and systemic vascular resistance index), systemic (systemic oxygen transport index, systemic oxygen uptake index, systemic oxygen extraction index, and mixed venous oxygen saturation) and gastric oxygenation (PgCO2 and pHi) parameters were measured at control, after 45 min of hemorrhage and 15 and 60 min after resuscitation.
Results- The average blood volume loss was similar in the groups (29.9 ± 10.6 mL/kg), and there were no significant differences among groups (P>0.05). Hemorrhage caused marked effects on hemodynamics and systemic oxygenation (P<0.05), and pHi decreases (P<0.05), without significant difference among groups (P>0.05). After resuscitation, hemodynamic, systemic and gastrointestinal oxygenation parameters were not significantly different among the groups (P>0.05), with the majority of their values returned to prehemorrhage levels after one hour of observation (P>0.05).
Conclusion- In dogs submitted to hemorrhagic shock and resuscitation, the choice of equipotent alveolar concentration of halogenated anesthetic during the anesthesia does not make a difference in relation to gastrointestinal oxygenation.

0308 THE IMPACT OF UNDERNUTRITION ON MORBIDITY, MORTALITY AND LENGTH OF HOSPITAL STAY IN TRAUMA PATIENTS

ME Goiburu, MM Jure Goiburu, H Bianco, J Ruiz Diaz, F Alderete, V Cabral, R Lopez, MC Palacios
Centro De Emergencias Medicas

Background: A rapid development of malnutrition associated with organ dysfunction and nosocomial infections has been described in severe trauma victims.
Objectives: To evaluate the nutritional status of patients admitted to a National Trauma Reference Center and evaluate its relationship with clinical evolution.
Methods: This was a prospective study evaluating adult patients admitted to the Intensive Care, General Surgery, Maxillofacial Surgery and Orthopedics departments of the Centro de Emergencias Medicas in Asuncion, Paraguay. Patients were taken consecutively from March 2002 to March 2004. The prevalence of malnutrition was determined using the Subjective Global Assesment (SGA), the lymphocyte count (malnutrition <1500/mm3) and albumin (malnutrition < 3.4 g/dl). Patients were followed to determine length of hospital stay, complications and in-hospital mortality. The risk factors analyzed were: nutritional parameters (hypoalbuminemia, lymphopenia, SGA), age, sex, surgical intervention, anemia and injury severity score (ISS). Data were processed using EPIINFO 2002. The SPSS was used for multivariate analysis. For group comparisons p<0.05 was considered significant, and results were reported as relative risk (RR) with a 95% confidence interval.
Results: A total of 161 patients were evaluated, with a median of 27 (14-92) years of age. There were 94% males and 6% females. Most (74%) were from the countryside and 26% were from the capital city. The most frequent anatomic sites of trauma were: head injuries 25%, thoracic trauma 16.6%, limb trauma 15.4%, abdominal trauma 14%. The median Injury Severity Score (ISS) was 20 (1-39). Nearly half (40%) of patients were malnourished or at risk of malnutrition according to the SGA, 45% were lymphopenic and 34% had hypoalbuminemia. Multivariate analysis identified the following significant risk factors for mortality: malnutrition according to the SGA p=0.04, RR=4 (1-15), and admission to the ICU p=0.0001, RR 53 (12-234); risk factors for complications were malnutrition according to the SGA p=0.003, RR 2.9 (1.4-5.8) and ISS over 20 p=0.001, RR=8.4 (2.3-29.9); risk factors for length of stay were malnutrition according to the SGA p=0.01, RR=2.3 (1.2-4.7) and ISS over 20, p=0.03, RR=2.8 (1-7.3).
Conclusions: Malnutrition is frequent on admission in trauma patients, and must be diagnosed quickly because it is an independent risk factor for morbidity and mortality, and prolongs the length of hospitalisation.

0309 WITHDRAWAL OR WITHHOLDING THERAPEUTIC EFFORTS GUIDES IN INTENSIVE CARE UNITS. REPRESENTING AN ATTEMPT TO ENHANCE MEDICAL ATTENTION AT THE END OF LIFE

S Salva, JC Pal, G D Empaire, MA D Empaire, D Urbina
Unidad de Cuidados Intensivos. Hospital de Clinicas Caracas. Caracas. Venezuela

Background:
Nowadays a variety of different treatments on intensive care units have improved life expectancy of many patients. At the same time, important questions have been made in relation to the moment in which withdrawing or withholding (WW) therapeutics efforts should be proposed and the method to be followed , when clinical evolution is not satisfactory. The methods and criteria described in literature are different and numerous problems are conceived.
Objectives:
To evaluate a guide to orientate the process of withdrawal or withholding the therapeutics efforts measures and palliative treatments in an intensive care unit.
Methods:
A guide including variables that show the steps to be followed in the process of WW was developed. It included age, religion, SAPS II at the admission time. Classification according prognosis. Informed consent. Evaluation of patient's capacity. Use a advanced directive. Identification of subrogated relatives. Identification of relatives who participate in final decision made. Discussion frequency with relatives. Proposed methods in wich WW will be carry out. This guide was applicated to 40 patients hospitalized at the ICU at Hospital de Clinicas Caracas. The results were compared with the results of a prior observational study (n = 60).
Results:
The guide was aply to 40 patients. The WW was done in 32 of 40 patients. The average age 62.02 years old SD (15.99) rank 30-89. 57.5% female. 42.5 Male. 90% Catholics. One (2.5%) was Jewish. The SAPS average 54.6 with SD (15.47). The frequency of Meeting with relatives improved from 85.7% to 100% (chi square p .0102, Yates corrected chi square .0270). Percentage of Information about WW process step from, 77% to 96.77% (chi square 0.0143). The informed consent for the WW increase from 66.66 to 74.19%. The proposal from family members increased from 3.17% to 6.45%. None patient had capacity for the WW decision. Just in 4 cases were oral advance directives were obteined. In 71,4% of the cases the initial measure was do not Resuscitate order. In just one patient (2,5%) the therapeutic measures were resumed and he was discharged alive from the UCI. The palliative care was improved with the guide aplication.
Conclusions: This guide is a useful method to improve the decision making process of WW therapeutics efforts. It allows to follow the bioethical principle already accepted in this process as well as improving the application of palliative care.

0310 LUCIO'S PHENOMENON IN ICU: A REPORT OF A CASE IN BRAZIL

AN Duarte-Neto, GCT Barbosa, FPF Campos, SB Cappi, FG Soriano, M Bernik, CB Valeri, CR Ferreira, PA Lotufo
Hospital Universitário da Universidade de Sao Paulo

BACKGROUND: The Lucio's phenomenon, a rare, aggressive, occasionally fatal type 2 reaction occurring in the diffuse nonnodular type of lepromatous leprosy in Brazil.
OBJECTIVES: To report a case of Leprosy with Lucio´s Phenomenon and severe pneumonia and septic shock
METHODS: We described a case of a 67-year-old brazilian, diabetic, woman had difuse ulcers that were painless and progressive for about 30 years, loss of eyebrows and infiltration of the face. There were the development of new, painful, extensive ulcerations on her face, arms, forearms, legs, thighs and buttocks, accompanied by pneumonia. Some of the lesions were infected and exuded copious thick purulent material.The patient was transfered to the ICU because she was in a septic shock state. The arterial pulmonary catheter had a typical septic shock pattern. Despite institution of aggressive treatment, the patient´s condition continued to deteriorate and had fatal outcome.
RESULTS: The diagnosis of Leprosy was made in the necropsy.We found a low amount of acid-fast bacilli in the skin with a leukocytoclastic vasculitis and fibrosis, but a large amount in the liver, kidney and spleen. Gram positive coccus were found in the lungs.
CONCLUSIONS: Nowadays, leprosy is still a severe healthy problem in Brazil and it's sometimes underdiagnosed in general wards.The clinical diagnosis of Lucio's phenomenon is difficult and it is usually the recognizable sign of leprosy, despite of being confused frequently with another necrotising vasculitis. The discovery of acid-fast bacilli at the pathology examination of skin biopsies can be negative, only described as leukocytoclastic vasculitis.

0312 ASSESSMENT OF PATIENT AND FAMILY SATISFACTION RATING AFTER ICU DISCHARGE

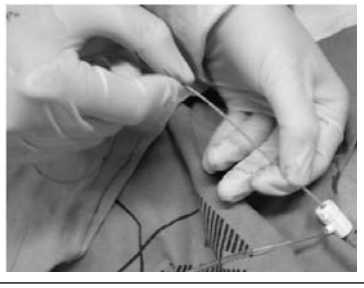
G Ceconi, R García Turiella, D Rovira, R Guidi, F Daminato, E Barral, G Arana
Hospital Italiano Garibaldi- Rosario- Argentina

Objetives: To assess patient and family satisfaction rating after ICU discharge in relation to physical and psychic comfort, assistance environment, information received and physician-patient-family relationship.
Material and methods: A 38-question survey with suggested answers was conducted between July and December, 2004. 19 questions were addressed to a relative and the remaining ones to the patient after move to a general ward.
Results: 50 people were surveyed. Patient mean age: 58 (r: 21-88). Mean ICU stay: 3.8 days (r: 2-12).Admissions: 62% post-operative, 30% for medical reasons and 8% for multitrauma.92% of patient families received an explanation about why the patient had to be admitted into ICU; 93% of them understood the reason. 72% of patient families felt emotionally supported by the intensivist, 94% of them received information prior to the visit as to the condition in which he or she would find the patient, 52% were troubled after stepping into the unit, 42.3% of these due to the patient condition, 38.5% at the sight of the other patients, 19.2% due to the unit atmosphere. Out of 64% of patients, 34% felt pain on a 5-6 scale, 34% on a 7-8 scale, 18% on a 3-4 scale and 12% on a 9-10 scale; 96% of them felt pain relief after analgesic administration. There was no significant difference in pain in relation to patient age. We did find a significant difference in relation to the number of days of the ICU stay (p: 0.002): those who spent up to 3 days in the ICU reported more pain than those who stayed longer. There was a significant difference in relation to the condition on admission (p:0.0001): postoperative patients felt more pain. 38% was able to sleep, 44% was partially able to sleep and 18% was not able to sleep at all. There was no significant difference between lack of sleep and number of days in ICU; we did find a significant difference (p: 0.025) in relation to the condition on admission: those admitted due to medical reasons found it harder to get to sleep. As to instrumentation/invasive procedures, 40% reported discomfort with arterial blood withdrawal, 34.5% with the bladder catheter, 7.3% with the endotracheal tube and 7.3% with the nasogastric tube. 74% of patients felt emotionally supported by the intensivist. 54% felt exposed or naked.
Conclusions: Physician-patient-family relationship was rated satisfactory; the level of emotional support provided to patients and their families is good. The analysis shows that analgesia should be instituted earlier and that some measures should be introduced to improve sleep. Arterial withdrawals should be done under local anesthesia and should be limited to specific indications, not routinely. More than half of the patients reports that they do not like being naked. Patient relatives find the atmosphere/setting disturbing.

0313 DESCRIPTION OF A TECHNIQUE FOR CONTINUOUS MONITORING OF CENTRAL VENOUS OXYGEN SATURATION IN INFANTS AND CHILDREN WITH SEPTIC SHOCK

EJ Troster, CF Oliveira, FAC Vaz
Instituto da Criança - University of São Paulo - Brazil

BACKGROUND: Early reversal of septic shock is being related to improvement in survival and prognosis. According to recent guidelines, infant and children with septic shock should be aggressively treated directed to clinical and hemodynamic goals, including vital signs, urinary output, mental status and central venous oxygen saturation. An important randomized controlled trial with adult patients with septic shock showed great benefit for those patients who received a catheter capable of monitoring real time central venous oxygen saturation. To our knowledge, there is no similar experience in children and there is no catheters especially designed for this population
OBJECTIVES: To describe a technique for continuous monitoring central venous oxygen saturation in infants and children
RESULTS: In order to continuously monitor the central venous oxygen saturation in children, we had to use a catheter thin enough to be inserted in infants, long enough to be inserted through the femoral vein, as this is a common insertion site in children, and should contain the optic fiber responsible for the oxygen saturation reading. Although many catheters are designed to be used in adults, there is no available devices for children; the only option containing an optic fiber and available at our market is the non-balloon dual lumen oximetry catheter (Edwards Lifesciences, Irvine, CA), which is 4Fr and 40 cm long, originally designed to be placed at jugular vein and monitor jugular bulb oxygen saturation. Using the modified Seldinger technique, we inserted a 5Fr (for infants) or 6Fr (for children) percutaneous sheath introducer through the jugular, subclavian or femoral veins (picture). Once the introducer was placed, we inserted the non-balloon dual lumen oximetry catheter through the introducer, aiming to place the catheter's tip at right atrium, superior vena cava or inferior vena cava (above diaphragm). While the introducer can be sutured to the patient's skin, the oximetry catheter has to be attached to the introducer (picture). After placing the 4Fr oximetry catheter, the optic fiber was connected to a Vigilance monitor (Edwards Lifesciences, Irvine, CA). A single venous blood gas analysis must be drawn in order to calibrate the monitor.
CONCLUSION: Using the described technique, we were able to continuously monitor the central venous oxygen saturation in infants and children with septic shock. The data proved to be accurate and so far we have 39 children, enrolled in a randomized controlled trial, who had been treated oriented to clinical and hemodynamic goals, including central venous oxygen saturation.



0314 INCIDENCE OF NOSOCOMIAL INFECTIONS IN INTENSIVE CARE UNITS: RESULTS OF A SPANISH MULTICENTER STUDY

F Alvarez-Lerma[1], M Palomar[2], P Olaechea[3], J Insausti[4], E Cerda[5]
1 Hospital del Mar, Barcelona (Spain); 2 Hospital Vall d'Hebron, Barcelona; 3 Hospital de Galdakao, (Vizcaya); 4 Hospital de Navarra, Pamplona; 5 Hospital de Getafe (Madrid); 6 Grupo de Hospitales ENVIN-UCI

Objective: The infectious diseases working party of the Spanish Society of Intensive Care Medicine and Coronary Units developed a survey for the surveillance of nosocomial infection to be applied in Spanish ICUs. Data of this project obtained from 1999 to 2004 are here described.
Design: Multicenter, prospective annual study over 2 calendar month periods.
Setting: ICUs of the participating hospitals.
Methods: Patients admitted for at least 24 hours to the ICU were prospectively included in the study and followed up to discharge from the ICU or up to a maximum of 60 days. Infections associated with well known risk factors were recorded, i.e., ventilator-associated pneumonia, catheter-related urinary tract infection, and primary bacteremia related to vascular catheters. Infection rates are expressed as incidence density (ID) per 1000 days of exposure to the risk factor (no. infections / 1000 days). Numerators are infections, defined by the CDC criteria and denominators, number of days in which each risk factor was present.
Results: A total of 34,591 patients admitted to the participating ICUs were included. Ventilator-associated pneumonia (mean 16,8, range 15,5-18,0 episodes x 1000 ventilator-days), catheter-related urinary tract infection (mean 5,80, range 4,9-6,9 episodes x 1000 uretral catheter-days) and catheter-related primary bacteremia (mean 4,17, range 3,8-4,7 episodes x 1000 catheter-days) rates remained stable over the 6-year study period. When patients were stratified according to underlying disease, nosocomial infections were more frequent in trauma and medical patients. The predominant etiology of ventilator-associated pneumonia was Pseudomonas aeruginosa and Staphylococcus aureus, with a decrease of P. aeruginosa as causative pathogen in recent years. Catheter-related urinary tract infections were more frequently caused by Escherichia coli and catheter-related or primary bacteremia by coagulase-negative staphylococci. Markers of antimicrobial resistance have remained stable except for imipenem-resistant Acinetobacter baumannii and methicillin-resistant S. aureus that have increased. No case of S aureus and Enterococcus spp resistant to vancomycin was detected.
Conclusions: National rates of nosocomial infections in patients admitted to ICUs in Spain have been recorded. Causative pathogens predominating in each type of infection surveyed and the evolution of markers of antimicrobial multiresistance were identified.

0315 EVOLUTION OF THE ANTIMICROBIAL RESISTANCE IN AN ADULT INTENSIVE CARE UNIT

V Urbieta, H Bianco, B Figueredo, C Ayala, R Ferreira, S Baez, J Plans, M Villafane
hospital de clinicas/asuncion/paraguay

Objectives: To determine the frequency of isolated microbes in nosocomial infections (NI) and the evolution in time of antimicrobial resistance.
Materials and methods: it has been conducted a retrospective cohort study in the AICU divided in two periods: the first one (P1) from July, 1999 to December, 2000, and the second one (P2) from January, 2001 to July, 2002. Data were obtained form the NI chart. The laboratory specimens agreed with the National Committee for Clinical Laboratory Standards. Data were processed in Epi info 6, using chi square test for comparative groups, and a $p < 0.05$ was considered significative.
Results: There were isolated 408 specimens from 321 infections, distributed in: pneumonias, 36.5%; urinary tract infections, 25.7%; catheter infection, 24%; primary bateremias,7.3%; others, 6.5%. Most frequents isolated microbes were: Acinetobacter spp, P aeruginosa, K pneumoniae, Enterobacter spp, S Aureus and Coagulase Negative Staphilococcus (CNS). Comparing the two periods (P1 vs. P2), the proportion of resistance for Acinetobacter spp was: cefotaxim 100% vs. 100%, ciprofloxacin 95% vs. 100%, imipenem 2.7% vs. 3.5%, amikacin 82% vs. 43%, gentamicin 77% vs. 33%, ceftazidime 80% vs. 40%, all of them with no significance in p values. For P aeruginosa was: ciprofloxacin 38% vs. 75% (p=0.09), imipenem 5% vs. 31% (p=0.06), piperacilin/tazobactam 10% vs. 12%, cepfhoperazon/sulbactam 57% vs. 33%, amikacin 31% vs. 9% with p=NS. For K pneumoniae was: gentamicin 12% vs. 80%(p=0.06), ciprofloxacin 8% vs. 40%, ceftazidim 25% vs. 50% with p=NS. There was not found resistance to carbapenems. For Enterobacter spp was: ciprofloxacin 42% vs. 42%, gentamicin 50% vs. 43%, imipenem 4% vs. 0% with p=NS, amikacin 12% vs. 50% (p=0.07). For gram positives, S Aureus resistance to oxacilin was 61% vs. 71% and Coagulase Negative Staphilococcus (CNS) was 70% vs. 87% with p=NS. There was not found vancomicin resistance.
Conclusions: and increasing proportion of resistance was found in the isolated microbes comparing the two periods, similar to that found in medical literature.

0317 SURVEY OF RESOURCES AND RULES OF USE OF THE NUTRITIONAL SUPPORT (NS) IN INTENSIVE CARE UNITS (ICUS)

MC Montaruli[5], C Kecskes[2], E Menéndez[2], ML Cordini[1], F Martino[3], G Bordolli[4]
1 Hospital Francés Buenos Aires Argentina; 2 Hospital Italiano Buenos Aires Argentina; 3 Sanatorio Reconquista, Reconquista, Pcia de Santa Fe, Argentina; 4 Hospital Thornú Buenos Aires Argentina; 5 Hospital Zubizarreta Buenos Aires Argentina

Background: Others surveys performed in Europe and in our Country
Objective: To know the available material resources and the rules of use of (NS) in several (ICUs) of our country.
Material and Method: A questionnaire was elaborated with questions related with the practice of the (NS), material resources utilization, Parenteral Nutrition (PN) and Enteral Nutrition (EN) implementation.
Results: Answers, were received from 35 (ICUs), 323 adult patients. They are divided in: Clinical 46%, Surgical 31%, Neurological 20%, Trauma 3%. Systematic nutritional evaluations were performed in 43% of the centers; 29% of them uses biochemical parameters; 29% Subjective Global Evaluation (SGE), blood Albumin concentration and Anthropometrical methods and 6% with blood Albumin only. PN: 97% of the centers use PN; 46% has written protocols. The centers have: 43% less than 1 patient with (PN) a month, 48% between 1 to 5 patients a month, 9% more than 10 patients a month. In the 66% of the feeding average lasted between 5 to 10 days. Indications: Complicated surgery 83%; clinical pathologies 3.5%; neurological pathologies 3.5. PN in the 57% are administered by only one bag, the rest uses parallel flasks. Infusion Pumps are used in the 86%.The lipid emulsions are used daily as caloric source in 63%; 26% of them are used once or twice a week; they are not available in 3% and they are not believed to be necessary in 3%. PN by peripheral vein is indicated only in the 26%of the cases. 43% of the PN is administered by an exclusive one lumen catheter; 35% by one multi-lumen with one exclusive lumen for PN; while 3% shares it with other medications or intravenous infusions. 63% of the catheter is left on until treatment is over or there is a complication; 24% does a routine exchange every 5 to 7 days. In the 76% the ICUs infection related to the catheter represent more than 5% of the catheter, while the rest among 5 to 15%. EN: 47% of the ICUs has written protocols; 51% has an average among 10 to 19 patients a month that receive EN; 26% has between 5 to 9 patients; 20% more than 20 and 3% reports less than 5 patients a month. 54% the average duration of the EN is between 5 to 10 days; 43% more than 10 days and 1% less than 5 days. Indications: In 60% Neurological; 25% Medical; 6% Burns; 6% Surgical; 3% Trauma. 68% uses liquid and powder diets; 17% exclusively liquid and 9% powder ones. EN is utilized using enteral containers in 71%; 63% of the. EN are delivered by continuous infusion; 60% utilizes infusions pumps; 60% uses gastric tubes more often than nasojejunal (NJ) tubes; 11% doesn't use any kind of stoma. 52% are silicone and polyurethane tubes; 86% of the NJ tubes are placed blindly as first option 11% of the NJ tubes with radioscopy.
Conclusions: Despite economical difficulties of the last years the surveys results shows that material resources for an accuracy implementation of nutritional support NS in the critical ill patient are available.

0318 EXCHANGE TRANSFUSION FOR SEVERE INFANTILE PERTUSSIS

A Donoso[1], M Gonzalez[2], P Cruces[1], J Camacho[1], B Maldonado[2], E Darras[2]
1 Area de Cuidados Criticos Hospital Padre Hurtado, Santiago, Chile; 2 UCI Pediatrica, Hospital Sótero del Río, Santiago, Chile

Background: Severe Bordetella pertussis infection in infancy is associated with high mortality. Even with the use de extracorporeal membrane oxygenation (ECMO) support, mortality 70% has been reported. Poor outcome are related to severe refractory pulmonary hypertension (PHT). The mechanism of the refractory PHT in this disease is poorly understood. Pulmonary vessel occlusion with leukocyte thrombi has been reported. Extreme White blood cells (WBC) count is identified as a risk factor. Therapies aimed at WBC reduction have been suggested.
Objectives: Report two cases of Severe Pertussis treated with exchange transfusion.
Case 1: A 3 -months- old girl was admitted with one week of cough. Diagnosis of pertussis was made and erythromycin was begun. The DFA returned positive for B. pertussis. The patient progressed to respiratory failure requiring mechanical ventilation (MV), extreme leukocytosis (79k) and tachycardia (hr=200/min), ECHO revealed severe PHT. The patient did not respond to systemic alkalinization and dobutamine, milrinone, sildenafil. Refractory hypoxemia and hipercarbia and myocardial failure progressed. A double Exchange transfusion was performed to reduce the leukocyte mass; WBC decreased to 16k. Oxygenation and hemodynamic improve with exchange. The patient was extubated 7days later.
Case 2: A 8-week- old boy with one week of cough, was hospitalized with pneumonia caused by B. pertussis. Respiratory insufficiency worsened, tachycardia (hr=240/min), severe leukocytosis (45k) and severe PHT, refractory to therapy. Exchange transfusion was performed with improve cardio-pulmonary state. The patient was extubated 7dayslater.
Conclusions: In our experience these patients had dramatically different course and outcome seen with Severe Pertussis infection. We believe that exchange transfusion was in part responsible for the outcome observed. We believe ET in future patients with severe pertussis causing pulmonary hypertension should be considered as therapeutic option.

0320 CONTINUOUS HEMOFILTRATION IN PEDIATRIC CRITICAL CARE PATIENTS

A Del Rio, B Fernandez, J Llosa, I Fuentes, A Donoso
Area de Cuidados Criticos Hospital Padre Hurtado, Santiago, Chile

Background: Continuous hemofiltration (CHF) is an essential procedure in critical care. However, application of this therapy to pediatric patients is associated with several problems due from their smaller body size and weight compared with adults.
Objectives: Review our experience in this procedure in the last five years in our PICU. Assess clinical efficacy and safety.
Methods: Reviewing patient's clinical records (1999-2004)
Results: 28 patients treated with CHF, 50% males. Their body weight ranged from 4 kg to 59 kg. 50% under one year old. The underlying disease was septic shock (57%) and the clinical indication was renal failure (43%). The mean CHF duration was 4.5 days. Blood access was provided in a veno-venous mode in all patients, femoral vein (54%) and jugular-femoral (28%). 9/28 patients (32%) in continuous hemodiafiltration (CHDF). In 12/28 patients the CHF duration was > 3 days. Regional anticoagulation was used in 7/28 (25%). The mean life time hemofilter used was 36 hours. The most frequent complications were circuit dysfunction (75%) and temperature control of the patient (50%). Of the 28 patients receiving CHDF, 16 patients survived without serious complications, achieving a survival rate of 57%.
Conclusions: In pediatric critical care, CHF is safely applicable to the critically ill and it's a feasible therapy in a critical pediatric patient, without major problems or important complications, which allows us to improve the clinical management of our patients.

0322 INCIDENCE OF ARTERIAL HYPERTENSION IN THE EARLY POST-OPERATIVE PERIOD AFTER PEDIATRIC LIVER TRANSPLANTATION

EJ Troster, GA Costa, DSF Oliveira, CF Oliveira, JG Maksoud, FAC Vaz
Instituto da Criança - University of São Paulo - Brazil

BACKGROUND: Pediatric liver transplantation is considered to be curative for several end-stage liver diseases or acute liver failure. Monitoring and treating, at the intensive care unit, the most frequent complications of the early post-operative period has major impact on receptor's prognosis and includes monitoring graft's function, adequate fluid intake, management of hypovolemia and hypervolemia, early detection and prevention of thrombotic complications and other organ dysfunctions. According to literature, the incidence of systemic arterial hypertension varies from 14% to 29% and occurs exclusively after starting with immunosuppressant drugs. There is no available data about the incidence of arterial hypertension during the early post-operative period, before commencing with immunosuppressants.
OBJECTIVES: To describe the incidence of systemic arterial hypertension (systolic Pressure > 95th percentile for age), use of oral and intravenous anti-hypertensive drugs during the early post-operative period of children submitted to liver transplantation and to propose a protocol to study the possible related causes.
METHODS: Database review of all children admitted to the intensive care unit after liver transplantation during 2004; analyses of patient's records for information on arterial blood pressure, use of anti-hypertensive and immunosuppressant drugs.
RESULTS: Of 416 children admitted to the intensive care unit during 2004, 33 (7.9%) had been submitted to liver transplantation and 3 of them had a re-transplantation; 23 (63.9%) children received the organ from a cadaveric donor and 13 (36.1%) from a living-related donor. Mean age was 66 months (9 to 194) and median age was 56 months; 15 (44.1%) girls and 19 (55.9%) boys, with biliary atresia being the most common underlying disease (20 patients – 60.6%). Considering all the transplantations, seven (19.4%) patients needed nitroprusside to keep arterial blood pressure < 95th percentile for age during the early post-operative period and there was no difference between cadaveric or living-related donor (43.5% x 30.8%; p=0.69). Nine (18.2%) patients died during post-operative period, and only one of them had received nitroprusside and amlodipine. All children that received nitroprusside were changed to oral amlodipine as soon as gastrointestinal tract was available; thirteen (36.1%) patients received amlodipine during post-operative period and 100% of them could discontinue the anti-hypertensive drugs before hospital discharge.
CONCLUSIONS: Arterial blood hypertension is relatively common among children submitted to liver transplantation and available literature suggests this to be a transitory event related to immunosuppressant drugs. In contrast, we found an incidence of 19.4% of arterial hypertension, requiring intravenous medication, before starting with immunosuppressant drugs. We propose a prospective study to investigate the possible related causes to the arterial hypertension observed in our children during the early post liver transplantation period.

0323 ASSESSMENT OF THE KINETICS OF TYPE-B ATRIAL NATRIURETIC PEPTIDE (BNP) IN MYOCARDIAL REVASCULARIZATION

W Homena[1], D Moreira[1], A Camarozano[1], J Albuquerque[2], P Resende[1], B Santos[2], L Alves[2], D Oliveira[1], J Magalhães[1], J Brito[2], V Carreira[1], R Gomes[2]
1 Hospital Barra Dor, Rio De Janeiro; 2 Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

INTRODUCTION: The relation of the increase in type-B atrial natriuretic peptide (BNP) to blood volume and intraventricular pressure has been well established in the literature as a biological marker of heart failure diagnosis and prognosis. However, the literature lacks data that allow the extrapolation of this statement to patients (pts) undergoing cardiac surgery (CS).
OBJECTIVE: To assess the kinetics of BNP in pts undergoing myocardial revascularization (MR) and to correlate it with indirect variables of blood volume.
METHODS: Prospective and observational study consecutively assessing 33 individuals divided into 2 groups: Group 1 (G1), 17 pts without left ventricular (LV) dysfunction; and Group 2 (G2), 16 pts with LV dysfunction. The immunofluorescence technique was used for measuring BNP (pcg/mL) in the preoperative period (PRE), and 1 and 24 hours after surgery. The values found in both groups were correlated with the time of ECC, fluid balance (FB) in the OR and in the first PO day, central venous pressure (CVP), and the P/F ratio in the immediate postoperative period (IPO) and after 24 hours. Statistical analysis comprised the Student t, Fisher exact, and Mann-Whitney tests.
RESULTS: In G1, the mean age of pts was 60 (SD 8.9) years, 81.2% being men, and, in G2, the mean age was 58 (SD 9.4) years, 82.3% being men. The medians of BNP in the PRE and IPO were statistically different between the groups (G1 32.5, G2 203, P=0.0085; and G1 38.8, G2 183, P=0.0031, respectively). No difference was found between the values in the 24 PO hours. A positive correlation was observed in regard to FB between the groups in the perioperative period (G1 median 1000 mL, G2 median 250 mL, P=0.0005). No statistical difference was observed in regard to CVP and P/F ratio between the groups.
CONCLUSION: Although a significant change in ventricular blood volume occurs during MR, the BNP values found in this sample in the perioperative period reflected the BNP kinetics of a nonsurgical population. Further studies are required to infer prognostic significance.

0324 SPONTANEOUS PNEUMOMEDIASTINUM IN SHALLOW-WATER-DIVING. CASES REPORTS

P Cruces[2], A Donoso[1], R Ronco[2]
1 Area de Cuidados Criticos Hospital Padre Hurtado, Santiago, Chile; 2 UCI Pediatrica, Clinica Alemana, Santiago, Chile

Background: Spontaneous pneumomediastinum (SP) is air in the mediastinum that tracks proximally along the vascular structures from the alveoli to the potential space surrounding the heart. Is a rare medical entity occurring almost exclusively in otherwise healthy young individuals without known predisposing factors. Objectives: Reports our experience with patients presenting SP related with diving in the last year.
Case 1: A 9-year-old boy presented with neck pain. The child completed multiple dives to the bottom of pool the preceding four hours. Vital signs and oxygen saturation were within the normal range. He developed subcutaneous emphysema of the neck. Chest radiography confirmed the clinical diagnosis and showed pneumomediastinum. A thoracic CT scan revealed a little laceration of the posterior tracheal wall (1 mm). Patient was placed on oxygen by nasal canula and symptomatic treatment. Clinical evolution was unremarkable. He was discharged at home 3 days after.
Case 2: A 10-year-old boy with pleuritic-type chest pain. The child swam in the pool the preceding hours. Vital signs and oxygen saturation were within the normal range. Mediastinal crunch (Hamman´s sign) was evident in physical examination. Chest radiography revealed pneumomediastinum.
The patient was placed on oxygen by nasal canula and symptomatic treatment. Clinical evolution was satisfactory. He was discharged at home 3 days after.
Conclusions: Spontaneous pneumomediastinum after shallow water diving occurs in children. Is a self-limiting condition that generally resolves without clinical sequel. This entity should be in mind in differential diagnosis of thoracic complaints.

0325 ENDOTRACHEAL INTUBATION DELAY IN PATIENTS WITH NONINVASIVE VENTILATION

G Gonzalez, A Carrillo, A López, MD Rodriguez, A Renedo, M Párraga, JA Soler
Intensive Care Unit. Hospital Morales Meseguer. Murcia. Spain

Introduction: Noninvasive ventilation (NIV) has been used in different acute respiratory failure (ARF) etiologies to avoid endotracheal intubation and complications related. Although nonfree of risks, NIV presents less complications and less severe than the invasive modality. However, the intubation delay in patients without NIV response, can cause a worsening of clinical evolution.
Methods: Observational prospective study of all patients entered in ICU by ARF and need VNI. Intubated patients were divided according to the moment of intubation (early:< 2 days from beginning of NIV or delated:>2 days). The results were expressed as percentage and averages ± SD. The comparisons between two qualitative variables have been made by means of Ji^2, and between quantitative and qualitative by means of ANOVA. The variables that presented $p<0.05$ in univariante analysis were introduced in a multivariant model through a logistic regression.
Results: Between January 1997 and December 2004 we admitted in ICU 1682 patients with ARF and NIV. 299 of them, were intubated (17.8%), 191 early and 108 late. Between both groups, were not difference in age (63 vs 65 years; p:0.256), but the patients with early intubation were more severe (SAPS II: 51±15 vs 46±11; p:0.007). NIV lenght was greater in deaths (2.59± 2.41 versus 1.84±1.78 days; p:0.002). In the early group, respect to the delayed it differed: hospital stay (30±26 versus 23±23 days; p<0.001), maximum SOFA (14±3 versus 12±3; p<0.001) and hospital mortality (55% versus 79.6%;p<0.001). In a multivariate analysis the factors related to death were: age (OR:1.054; CI-95%:1.031, 1.077), maximum SOFA (OR:1.463, CI-95%:1.334, 1.606), Glasgow pre-NIV (OR:1.231, CI-95%:1.074, 1.411) and disseminated cancer (OR:4.306, CI-95%:1.188, 15.590).
Conclusions: Endotracheal intubation delay in patients with ARF and NIV can favor a worse prognosis, multiorganic failure and finally death.

0326 CLINICAL IMPACT OF THE PROPHYLACTIC USE OF INTRA-AORTIC COUNTERPULSATION IN HIGH-RISK PATIENTS UNDERGOING MYOCARDIAL REVASCULARIZATION

W Homena, J Albuquerque, D Moreira, B Santos, A Weksler, R Vegni, A Pontes, S Olival, L Alves, F Gouveia, J Brito, R Gomes
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

INTRODUCTION: The use of intra-aortic balloon (IAB) has been well established in the clinical management of patients (pts) with problems, such as refractory myocardial ischemia, cardiogenic shock, and difficulty in weaning from extracorporeal circulation (ECC). However, the literature lacks evidence supporting the "prophylactic" use of IAB in high-risk pts undergoing myocardial revascularization (MR).
OBJECTIVE: To assess the clinical outcome of surgical high-risk (HR) pts undergoing MR, who received "prophylactic" IAB.
METHODS: Prospective and observational study of a population undergoing elective MR. High-risk pts were defined as those having severe LV dysfunction (EF < 35%) on TT ECHO and/or lesion in the left main coronary artery (obstruction > 50% of the luminal diameter). The sample was divided into 2 groups: Group 1 (G1) with "prophylactic" IAB, and Group 2 (G2) without IAB. The influence of the following variables on clinical outcome was assessed: use of amines; fluid balance (FB) in the perioperative period (PER); time of ECC, anoxia, and mechanical ventilation (MVT); intensive care unit length of stay (ICULOS); hospital length of stay (HLOS); complications of the procedure; and death.
RESULTS: G1 comprised 16 pts (87.5% men) with a mean age of 61.6 (SD 8.6) years, and G2 comprised 39 pts (87.1% men) with a mean age of 56 (SD 8.0) years (P=NS). No difference was observed between the groups regarding the other base variables, except for BMI (P=0.00035). In regard to clinical outcome, only FB in the PER (G1 median 1695 mL, inter-quartile interval {IIQ} 923-1865, G2 median 2061 mL, IIQ 1257-2860, P=0.03) and MVT (G1 median 11.5 h, IIQ 7-26 h, G2 median 8 h, IIQ 5-12h) had statistical significance. No significance was observed regarding the use of amines, time of ECC, ICULOS, HLOS, and death. No complications inherent to IAB use were observed.
CONCLUSION: The "prophylactic" use of IAB showed no benefit regarding morbidity and mortality in the population studied. The greater blood volume replacement and prolonged MVT emphasize the need for care when indicating this procedure.

0327 CARDIOGENIC SHOCK: AN EXPERIMENTAL ANIMAL MODEL

C Tanamati, M Monachini, M Cantarelli, PV Khoury, GA Amarante, P Martins, F Coelho, G Schettino
Hospital Sirio Libanês, São Paulo, SP, Brazil

Objective: To create an experimental animal model of cardiogenic shock for learning and to test new therapeutic strategies. Methods: Adult white pigs (70 Kg) received both intravenous (acepromazine 0.3 mg/kg, midazolam 0.2 mg/kg, fentanyl 250 mcg/kg, thiopental sodium 12.5 mg/kg and pancuronium 0.4 mg/kg) and inhaled anesthesia (halothane 1%) and were intubated and mechanically ventilated. An arterial line was obtained through dissection and puncture of common femoral artery. A continuous cardiac output catheter (Edwards Lifescience, USA) was introduced through the dissected internal jugular vein and positioned using arterial pulmonary pressure curve, allowing monitoring right atrial pressure, pulmonary artery pressure, pulmonary wedge pressure (PAop) and SvO2. Through median sternotomy, pericardium was opened longitudinally and the heart was exposed. The baseline ECG and hemodynamic data was recorded and after a 6-0 polypropylene suture was passed under the proximal anterior descending coronary artery that was snared for up to 10 to 15 min. An ECG was then obtained to show typical ischemic alterations, and regional myocardium color change and regional myocardial hypocontratility were observed. The presence of cardiogenic shock was defined by cardiac output index < 1,8 L/min/m2, PAop > 20 mmHg and mean arterial pressure < 50 mmHg. Carotid artery and external jugular vein were cannulated and ECMO support was used (flow 100-150 ml/kg/min) after induced cardiogenic shock. Results: The model was tested in 8 animals. Four animals died immediately after coronary occlusion because of ventricular fibrillation, and cardiogenic shock was reproduced in the other 4 animals and these animals were kept alive for 4 hours with supportive interventions (inotropic drugs and ECMO).
Conclusions: The experimental animal model created by ischemic myocardial infarction induced cardiogenic shock and can be used to study and test new therapeutic strategies.

0328 A PROSPECTIVE INCIDENCE STUDY OF NOSOCOMIAL BACTERIAL INFECTIONS IN A PEDIATRIC INTENSIVE CARE UNIT IN TUNIS

N Ben Jaballah, A Bouziri, W Kchaou, K Mnif, S Belhadj, A Hamdi, A Khaldi
Hôpital d'Enfants de Tunis, Tunis, Tunisia

Background: Bacterial infections account for the majority of nosocomial infections in pediatric intensive care wards. Knowledge of the incidence of nosocomial infections allows the targeting and implementation of preventive strategies for reducing morbidity and mortality related to these infections.
Objective: The objective of this study was to describe the incidence of nosocomial bacterial infections in a pediatric intensive care unit (PICU) in Tunis (Tunisia).
Methods: A prospective surveillance study, from January 2004 to December 2004, was performed in the PICU of the University Children's Hospital of Tunis. All patients who remained in the PICU for a minimum of 72 h were included. Centers for Disease Control and Prevention criteria were applied. Nosocomial infections rates were calculated as a density incidence rate (per 1000 patient-days). Device utilisation ratio was defined as central venous catheter days+mechanical ventilation days/length of stay at onset date of nosocomial infection.
Results: During the study period, 340 patients, aged 0 to 15 years (mean age = 5,7 ±22 months), remained in the PICU for a minimum of 72 h with a total patient days of 2809 and an average length of PICU stay of 8.2±7 days. The patient population included 73 % neonates. Twenty two patients (6.5%) had a total of 22 nosocomial infections. The incidence of nosocomial infections was 7.8 per 1000 patient-days. The mean time of onset of infections was 7.2±2.6 days. Neonates had the highest nosocomial infection rate (8.3 per 1000 patient-days). The most frequent episodes of nosocomial infections were primary bloodstream infection (68.2%), pneumonia (22.7%) and secondary bloodstream infection (9.1 %) which gives 5.3, 0.7 and 1.8 infections per 1000 patient-days, respectively. The most frequently isolated pathogens were gram-negative bacteria (79%) with multiple drug–resistant Klebsiella pneumoniae isolates accounting for 26.3 %. Gram-positive bacteria caused 21 % of nosocomial infections, with Staphylococcus aureus being the main pathogen (15.8 %). The most common isolate in primary bloodstream infection was Klebsiella Pneumoniae (33.3%), followed by Staphylococcus aureus (25 %). Pseudomonas aeruginosa was the most common isolate in pneumonia (40%). Multivariate logistic regression analyses showed significant associations between nosocomial infection and device utilisation ratio >1 (OR aj = 9.6; 95% CI 2.8-32.6; p=0.0003), bacterial colonization with multiple drug–resistant gram-negative bacteria (OR aj = 3.1; 95% CI 1.1-9.2; p = 0.03) and blood transfusion (OR aj = 9.5; 95% CI 3.4-26.4; p<0.0001)
Conclusions: The major type of nosocomial bacterial infections in our unit was primary bloodstream infection and the majority of nosocomial bacterial infections resulted from multiple drug–resistant, gram–negative bacteria. Extrinsic risk factors associated with nosocomial bacterial infections have been identified in our unit. Implementation of improved infection control practices is required.

0329 NURSING CARE NEEDS AND THERAPEUTIC INTERVENTIONS IN INTENSIVE CARE UNITS: A COMPARATIVE STUDY OF ELDERLY AND NON-ELDERLY PATIENTS

KG Padilha[1], JT Ciampone[1], LA Gonçalves[2], FOM Maia[2]
1 University of São Paulo - School of Nursing; 2 Hospital Universitário da Universidade de São Paulo

Objectives: The objectives of this study were to compare the nursing care needs and the therapeutic interventions carried out on elderly and non-elderly patients in ICU, according to the Nursing Activities Score (NAS). Method: The sample was composed of 50 adult patients admitted into the ICU of a university hospital in the municipality of São Paulo, with a starting date of September 26, 2003. The NAS was applied daily, from the time of admittance to release from the ICU, for a total of 339 measurements. Patients 60 years of age or older were considered elderly patients. The Mann-Whitney test was used to compare the variables. Results and conclusions: The mean age of the patient sample was 70 years. The most frequent type of treatment was clinical (78.0%) and most patients were transferred from the emergency room (40.0%). The mean stay was 3.5 days and the mortality rate was 38.0%. The mean score for NAS was 66.57% (+ 9.15) and remained above the 60.0% mark for the entire period analyzed. No difference was observed between the mean NAS scores for elderly (66.44%) and non-elderly (66.33%) patients, just as no difference was observed between the therapeutic interventions carried out in the two groups of patients. The results show the need for further discussion on admittance to ICU, regarding the ethical, social and economic implications inherent in intensive care.

0331 CLINICAL IMPACT OF ATRIAL ELECTRIC STABILIZATION IN PATIENTS WITH CHRONIC ATRIAL FIBRILLATION UNDERGOING CARDIAC SURGERY

W Homena, M Padilha, D Moreira, B Santos, F Gouveia, J Pedrosa, G Silva, L Alves, J Brito, R Gomes
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

INTRODUCTION: Atrial fibrillation (AF) is frequent in patients (pts) undergoing cardiac surgery (CS). Despite the high prevalence of chronic AF in patients with valvular heart disease, few studies have assessed the clinical evolution of these pts when undergoing CS.
OBJECTIVE: To assess the clinical outcome of pts with chronic AF undergoing CS who evolved with electric atrial stabilization in the immediate postoperative period (IPO).
METHODS: Prospective and observational study of pts undergoing CS with extracorporeal circulation (ECC) divided into 2 groups: Group 1 (G1), pts who maintained AF; and Group 2 (G2), pts who reverted AF in the IPO. The following preoperative (PRE) parameters were assessed: left (LV) and right (RV) ventricular function; functional class; left atrium (> 5 mm); LV hypertrophy (>12 mm); presence of SAH, DM, COPD, CAD; use of AA drugs; and LBBB. The following perioperative (PER) parameters were assessed: atrial thrombus; plication of the atrial auricle; time of ECC and of anoxia; and chemical and/or electric CV. The following variables influenced the clinical outcome: mechanical ventilation time (MVT), ICU length of stay (ICULOS), hospital length of stay (HLOS), and maintenance of AF. The statistical analysis involved the following tests: Student t, Fisher exact, and Mann-Whitney tests.
RESULTS: G1 comprised 21 pts (14 women - 66.6%) with a mean age of 52.6 years, and G2 comprised 33 pts (15 women - 45%) with a mean age of 49.8 years (P=NS). No statistical difference was observed in regard to the PRE and PER variables, except for the LA size > 5 mm (G1 85.7%, G2 45%, P=0.0031), MVT, ICULOS, and HLOS. Of G1 pts, only 1 (4.7%) reverted his rhythm to sinus rhythm, while, in G2, 24 pts (72.7%) maintained their sinus rhythm until ICU discharge (P=0.000022).
CONCLUSION: In this sample, LA size was the major predictor of maintenance of AF, which did not determine greater morbidity. However, once AF is reverted, one should not restrain efforts to maintain atrial electric stability.

0332 REDUCTION OF NOSOCOMIAL INFECTION WITH NONINVASIVE VENTILATION

G González, A Carrillo, A López, A Renedo, M Párraga, S Botias, A Esquinas
Intensive Care Unit. Hospital Morales Meseguer. Murcia. Spain

INTRODUCTION: The application of noninvasive mechanical ventilation (NIV) through a mask shows numerous advantages respect to the invasive ventilation (IV), being the most important the reduction of incidence of nosocomial infection. Although this diminution is attributed to the avoidance of intubation, the studies that compare both modalities always shows a short length of the NIV respect to IV. Our hypothesis is that the reduction of nosocomial infection is related not only to avoided intubation but also to a short length of artificial ventilation.
METHOD: Cohort observational prospective study of ICU patients with necessity of mechanical, invasive or noninvasive ventilation >48 hours, during a period of 7 years. The patients were grouped according to received only NIV, NIV initially but later they were intubated (NIV-ETI), only IV, or initially IV and after extubation NIV by post-extubation failure (ETI-NIV). The criteria for diagnosis or suspicion of pneumonía nosocomial, bacteriemia and urinary infection are the accepted ones previously. We calculated the rate and density of incidence of the infectious processes in each group. Variables that presented a significant association with the nosocomial pneumonia were introduced in a multivariant model, through a logistic regression.
RESULTS: During the studied period, 8581 patients entered, 1514 (17.5%) received NIV and 2032 (23.6%) IV. 941 (62.1%) of these, were ventilated > 48 hours with noninvasive ventilation and 1091 (53.6%) through an endotracheal tube. 644 patients formed the NIV group, 204 the ETI-NIV, 794 IV group and 93 NIV-ETI group. The four groups differed in age (p<0.0001), SAPS II (p<0.0001) and MV lenght (invasive and/or noninvasive): 3.7, 17.4, 10.9 and 14.8 day respectively (p<0.001). The rates of incidence, expressed in n/1000 patients*day or risk factors*day in the 4 groups were:

	NIV	NIV-EIT	IV	EIT-NIV
Nosocomial Infection	12.6	22.0	24.4	21.0
Nosocomial Pneumonia	7.2	22.2	19.4	17.3
Urinary Infection	6.3	8.1	9.1	6.3
Bacteraemia	6.9	10.0	10.0	5.4

In a logistic regression analysis, nosocomial pneumonia risk factor were: Central catheter (OR:2.91, CI-95%:1.32, 6.38; p:0.008), mechanical ventilation days (OR:1.12, CI-95%:1.11, 1.41; p<0.001) and NIV (OR:0.41, CI-95%:0.21, 0.78; p:0.007).
CONCLUSION: The use of NIV as a ventilatory support in acute respiratory failure patients, reduces the nosocomial infection risk and this is related with short length of this ventilatory mode.

0333 SAFETY AND EFFICACY OF ENOXAPARIN DURING PERCUTANEOUS CORONARY INTERVENTION: ANALYSIS OF 282 PATIENTS

S Sá Jr[1], F Braga[2], J Kezen[1], G Nobre[2], M Carvalho[1], C Vilella[2], F Afonso[2], J Mansur[1], L Antelo[2], C Akstein[1]
1 Hospital samaritano; 2 Hospital Rio-mar

Background: Enoxaparin, a low-molecular-weight heparin, is used worldwide for the deep vein thrombosis prophylaxis. However, the routine use during the heart catheterization is not so common, mainly when a percutaneous coronary intervention (PCI) is required.
Objectives: Analyses the prevalence of ischemic and hemorrhagic (TIMI major or minor bleeding) complication in patients submitted to PCI, in elective or acute coronary syndrome set.
Methods: We reviewed 282 patients (pts) who underwent PCI and were treated with subcutaneous(SC) enoxaparin, 1mg/kg/q12h. Additional intravenous (IV) doses (weight adjusted) were given just before the procedure, when the following conditions met: 1) less than 2 previous dose of enoxaparin or 2) more than 6 hours of the last SC dose.
Results: Of the 282 pt, 195 (69.1%) were men. The mean age was 62.3 + 11.8 years. Eighty five pts (30.1%) underwent elective PCI for stable angina and 197 pts (69.1%) underwent urgent or emergence PCI for acute coronary syndromes (8.2% ST elevation and 60.9% Non-ST elevation). IV dose was given to 152 pts (66.1%, mean dose=33 + 5mg). The incidence of TIMI major and minor bleeding was 1,1% and 7,4% respectively. Logistic regression analysis identified age 65 years old and use of Glycoprotein IIb/IIIa inhibitors as total (major and minor) bleeding predictors (OR=3.4 95% CI 1.4 -8.7 and 2.5 95%CI 1.1 to 6.0, respectively). The in-hospital, 30 day and 6 month rates of cardiovascular death were 0.7%, 1.1% and 1.8% respectively. No fatal or non-fatal complications occurred during the PCI.
Conclusions: Enoxaparin used during PCI was associated rates of major and minor bleeding similar to those reported in the literature (about 2% for major and 7% to10% for minor bleeding) for unfractionated heparin(UFH), without increase ischemic complications, regardless of the clinical context. Based on this data, enoxaparin is a safe therapy in patients who will undergo PCI, and eliminates the need for UFH during the procedure.

0334 NEUROLOGIC COMPLICATIONS IN CARDIAC SURGERY: CAN RISK SCORES BE APPLIED?

W Homena, D Moreira, B Santos, M Nolasco, A Weksler, S Olival, R Vegni, A Pontes, L Alves, J Brito, R Gomes
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

INTRODUCTION: Neurologic complications (NC) in cardiac surgery are not rare (5-15%). Their etiopathogeny is multifactorial, and the risk factors are numerous. Neurologic complications result in high morbidity and mortality rates, and high hospital costs. Most risk scores assess mortality, and the risk for stroke assessed by the AHA/ACC score refers only to patients (pts) with coronary disease. One may thus question whether risk scores for NC can be applied in a general population.
OBJECTIVE: To assess the risk scores of pts with NC undergoing cardiac surgery (CS).
METHODS: Retrospective observational study including information about 1431 pts from a databank, of whom, 45 (3.1%) had reversible or permanent neurologic deficit. The sample was divided into 2 groups: Group 1 (G1), pts with NC; and Group 2 (G2), the historic control. The Cleveland score, Euroscore, and AHA/ACC score for stroke were assessed, as was the occurrence of death. The Student t test was used for analyzing the means of continuous variables.
RESULTS: G1 comprised 24 men (53.3%), and the mean age of pts was 63.5 (SD 13.6) years. The surgeries were as follows: 26 myocardial revascularizations (57.7%), 12 valvular replacements (26.6%), 1 combined (2.2%), 2 congenital (4.4%), and 3 aortic surgeries (6.6%). The means of the Cleveland score, Euroscore, and AHA/ACC score were in G1: 4.5 SD 3.3, 6.1 SD 4.2, and 4.1 SD 2.6, respectively; and in G2: 2.9 SD 2.6, 3.6 SD 2.8, and 2.5 SD 2.5, respectively, with statistical significance (P<0.0001, P<0.0001, and P<0.0001). The mortality rate was 24.4% in G1 and 9.2% in G2 (P=0.002).
CONCLUSION: The risk scores for cardiac surgery applied for mortality reflected a greater incidence of neurologic complications in this population.

0335 PATIENT-CATEGORIZATION IN PRE-HOSPITAL EMERGENCY UNIT

M Zunkovic
Emergency center, Pre-hospital medical unit, Maribor, Slovenia

Background. Categorization of patients by Rush method, intoduced in 1970 in USA, helps us to classify patients according to their needs for special nursing care, to balance effectively the patients' needs for medical resources, provided by the nursing staff in order to control and plan the nursing-staff activities.
Our aim was to classify the needs for nursing care and nursing staff individualy, according to the patients' individual medical condition. The aim was also to introduce this categorization method to our medical unit in order to make the work easier, to improve quality of work and find better solutions to improve quality of healith care.
Material and method. Were included 31 patients from the 15th of April to 22nd of April 2004 and followed the for eight days. All the interventions in each patient were registrated by the Rush method.
Results. We documented all the interventions performed by the medical staff and afterwards we analyzed them The analysis demonstrated the need for larger number of health care providers to optimize our work and to increase the quality of health care in the field.
Conclusions. Our investigation demonstrated that the Rush method of categoriztion of patients in the pre-hospital setting is need to organize and to plan the work more efficiently. More research in this field is needed to improve organization and planning in pre-hospital units.

0336 DAILY NEEDS PROFILE FOR NURSING CARE IN AN INTENSIVE CARE UNIT: ANALYSIS BY NURSING ACTIVITIES SCORE (NAS)

KG Padilha[1], PC Garcia[2], EMA Finardi[3], RHK Hatarashi[3], SCT Bento[3]
1 University of São Paulo - School of Nursing; 2 Hospital Universitário - São Paulo; 3 Hospital Nove de Julho

Objectives: The objectives of this study were to characterize the patients hospitalized in an ICU, identify the daily nursing care needs and verify the suitability of human nursing resources to the actual care demand according to NAS. Method: This is a quantitative, descriptive study conducted in a general ICU, with adult patients, in a private hospital in the municipality of São Paulo. The sample was made up of 68 patients, 18 years old or older, who had been hospitalized in the unit for at least 24 hours, and took place in October of 2004. The NAS was collected prospectively, over the period of admission to release from the ICU, from patient records and nurses, for a total of 690 measurements. Results and conclusions: Most of the patients were over 60 years of age, stayed a mean of 12 day in the ICU, were transferred from the surgical unit and were released into semi-intensive care Unit. The NAS mean was 63.6% (± 2.4), and remained above 60.0% for the entire study. It was observed that, on average, for each 6-hour shift, there was 4.88 hours of nursing shortage. These results contribute to the debate on human resources in ICU nursing and show the need for more research using NAS.

0338 INFECTION SURVEILLANCE AND CONTROL IN INTENSIVE CARE. A 3-YEAR STUDY. CONCLUSIONS

F Daminato, R García Turiella, D Rovira, R Guidi, G Ceconi, G Arana, M Gini, E Barral
Hospital Italiano Garibaldi-Rosario-Argentina

OBJECTIVES: To describe the nosocomial infection pattern within an intensive care setting. *To obtain the overall nosocomial infection rate within an ICU. *To obtain the incidence density of the most prevalent infections (ventilator, catheter and urinary associated) as comparative parameter. To compare two study-periods in which the surveillance was carried out. *To correlate the unit intrinsic factors and the risk of acquiring a nosocomial infection. *To assess the impact of prevention and control measures. MATERIAL AND METHODS: Two-year prospective follow-up study (09/20/03 to 09/20/05). A first cut-off point for analysis was done between 09/20/03 and 09/20/04. A second cut-off point was done between 09/20/04 and 01/31/05. Patients were included if their ICU stay had been 48 hours or longer. Positive bacteriologic cultures were recorded up to 48 hours after discharge from ICU. Positive cultures thought to meet the CDC/NNIS criteria for nosocomial infection were collected and studied. CIPS (Pugin's clinical score for lung infection) was used for ventilator-associated pneumonias (VAP), and tracheal aspiration was the bacteriologic method used (cut-off point 105). The following data were collected in an infection sheet: patient origin, ICU stay (number of days), evolution, co-morbid conditions, invasive procedures in ICU, antibiotics used before culture (type and number); documented and site infection, and APACHE II score to infection diagnosis date. Statistical process control and likelihood ratio test were done. RESULTS: 2003/2004 overall infection rate: 11.9 %. Average Apache score: 17.2. The Incidence density of VAP: 28.8/1000 days, central catheter-associated infections: 6.76/1000 days, and bladder catheter-associated infections: 41.8/1000 days. Overall infection rate from the 2004/2005 period data: 7.6%, incidence density of VAP: 27.2/1000days, central catheter-associated infections: 0/1000 days, and bladder catheter-associated infections: 2/1000 days. Average time of central catheter insertion to removal: 6 days (r 2-18). Prevalent infection site: bronchial secretion, 44.4%; average APACHE score: 16; patient origin: surgery.(44.5%). Most of them did not take third generation cephalosporine (88.9%).
CONCLUSIONS: Overall, the rates of nosocomial infection in the ICU are among the standard ones. The decrease in infection incidence in the second period studied to date may indicate improved knowledge of the ICU, the antibiotic prescription, and stricter definition criteria for infection events to avoid overdiagnosis. The prevalence of respiratory infections shows the need to continue active surveillance and deal more in depth with strategies and measures for prevention and control, such as airway care and interpersonal transmission control. The implementation of infectology surveillance systems is rather simple and inexpensive and it is warranted in an ICU because of its major benefits.

0339 NONINVASIVE VENTILATION IN ONCOHEMATOLOGICAL PATIENTS WITH ACUTE RESPIRATORY FAILURE

A Carrillo, G González, A López, M Párraga, A Renedo, S Botias, JA Soler
Intensive Care Unit. Hospital Morales Meseguer. Murcia. Spain

INTRODUCTION: Inmunosupressed patients affected of solid organ or hematological neoplasias, are specially susceptible to respiratory infections. For that reason in the treatment of these processes is tried to avoid endotracheal intubación to prevent nosocomial pneumonia. The use of noninvasive ventilation (NIV) has shown a reduction in the rate of intubation, increasing the survival of these patients.
METHODS: Observational prospective study of ICU patiens with NIV necessity, during a period of 8 years. The patients diagnosed of diseminated solid organ neoplasia, lynphoma, leukemia or myeloma were grouped and compared with the patients without cancer. The quantitative variables were expressed like averages and the qualitative ones like percentage. The comparison between two qualitative variables was made by the Ji2 test, and between qualitative and quantitative by Student' T. The variables that showed significant association were introduced in a logistic regression.
RESULTS: 1682 patients were studied. 115 (6.8%) of them, were oncohematological patients (OH). The age of OH group was smaller (62 versus 69 years, p<0.001) and severity, SAPS II, greater (49 versus 43, p<0.001). The respiratory failure etiology is diferent in both groups, predominating pneumonía and ARDS in group OH (45.2%) and cardiac edema and chronic respiratory pathology in the group without cancer. The PaO2/FiO2 before NIV did not differ significantly between both groups (146 and 153). The success of NIV (avoidance of intubación and survival to ICU) was 55.7% in OH and 72.7% in group without cancer (p:0.001), and hospital mortality was 53% and 27% respectively (p<0.001). The variables associated to failure of the NIV were:

	Odds Ratio	CI-95%	p
SAPS II	1.023	1.010 1.037	0.001
Chronic respiratory disease	0.423	0.276 0.647	<0.001
Maximun SOFA	1.510	1.425 1.600	<0.001
PaO2/FiO2 before NIV	0.972	0.965 0.980	<0.001
PaO2/FiO2 1 h. after NIV	0.957	0.949 0.980	<0.001
PaCO2 before NIV	0.961	0.943 0.980	0.003
PaCO2 1 h. after NIV	1.035	1.018 1.020	<0.001
Respiratory rate before NIV	1.043	1.041 1.085	0.003
Respiratory rate 1 h. after NIV	1.177	1.131 1.325	<0.001

CONCLUSIONS: The patients with oncohematolological processes and respiratory failure present a greater rate of failure with NIV. However in multivariate analysis, the severity index, respiratory parameters and multiorganic failure severity, are related to the failure of the NIV.

0340 SAFETY AND EFFICACY PROFILE OF COMBINED THERAPY WITH ENOXAPARIN AND TIROFIBAN IN PATIENTS WITH NON-ST ELEVATION ACUTE CORONARY SYNDROME

S Sá Jr[2], F Braga[1], J Mansur[1], M Carvalho[1], J Kezen[1], F Afonso[2], L Gustavo[2], C Vilella[2]
1 Hospital Samaritano; 2 Hospital Rio-mar

Background: A number of new therapies and interventions have been developed to decrease mortality in patients (pts) with non-ST elevation acute coronary syndrome (NSTEACS). Enoxaparin, a low-molecular-weight heparin, and Glycoprotein IIb/IIIa inhibitors (GPI) like tirofiban are among those many therapies, but the safety and effectiveness of their use in combination are unclear.
Objectives: To determine the safety and efficacy of combination therapy with subcutaneous (SC) enoxaparin and intravenous (IV) tirofiban in pts with NSTEACS.
Methods: We retrospectively reviewed non-CABG-related, 30-day rates of TIMI major and minor bleeding, as well as a composite end point consisting of death, acute myocardial infarction (AMI), and refractory ischemia in pts with NSTEACS. Complications occurring during percutaneous coronary intervention (PCI) were also assessed. The combination regimen consisted of SC enoxaparin (1mg/kg q12h) and IV tirofiban (PRISM-PLUS proposed regime). Such therapy was not discontinued even if PCI was required. An additional weight-adjusted IV dose of enoxaparin was administered if PCI was performed > 6 hours after the last SC dose of enoxaparin and if pts had received 2 doses of SC enoxaparin by the time of PCI. Unfractioned heparin (UFH) was not used.
Results: A total of 117 pts (65% men) were admitted to coronary care unit with NSTEACS and were treated with combination enoxaparin and tirofiban. Mean age was 59 + 11 years. TIMI major and minor bleeding were 2.6% and 8.5%, respectively. The incidence of the combined endpoint of death, AMI and refractory coronary ischemia was 11.1%. Logistic regression analysis identified major bleeding (OR=18.7; 95%CI, 1.57-223.5), and refractory angina (OR=1.4; 95%CI, 1.05 - 2.07) as predictors of the occurrence of the combined endpoint. Binomial test for proportions was conducted in order to draw a comparison with the UFH plus tirofiban arm of the PRISM-PLUS trial. No statistically significant difference was found for major or minor bleeding rates (p>0.05). There was a trend towards a higher incidence of death, AMI and refractory ischemia in the UFH plus tirofiban regimen from PRISM-PLUS (11.1% vs. 18.5%, p=0.052).
Conclusion: Our data show that combination therapy with enoxaparin and tirofiban appears to be at least as safe and effective as UFH plus tirofiban. However, our findings from this retrospective study cannot establish that the trend towards a lower incidence of death, AMI and refractory ischemia were indeed due to enoxaparin. Such hypothesis can only be proven by a randomized trial in which both combination therapies are directly compared in a prospective fashion.

0341 COMPARISON OF PATIENT-CATEGORIZATION BY THE RUSH AND SAN JOAQUIN METHOD IN MEDICAL INTENSIVE CARE UNIT

V Zunkovic
Intensive Care Unit, General Hospital Maribor, Slovenia

Background. Categorization of patients by San Joaquin or by Rush method helps us to classify patients according to their needs for special nursing care, to balance effectively the patients' needs for medical resources, provided by the nursing staff in order to control and plan the nursing-staff activities. San Joaquin method, introduced in 1970 in the USA, is more extensively used in Slovenia than the Rush method.
Our aim was to compare both categorization methods and to evaluate their efficiency in the real world and every-day clinical work in respect to material resources and staff availability.
Material and methods. Included were 29 patients consecutively admitted to medical intensive care unit from 1st of March to the 8th of March 2004 and followed for eight days. All the interventions in each patient were registrated by the Rush and by San Joaquin method and the results of both methods were compared.
Results. Between the two methods significant differences were observed. The Rush method classified patients more efficiently, regarding the patients' needs for nursing care and therefore the needs for the nursing staff, but also the material resources, needed for quality work in the medical intensive care unit.
Conclusions. The Rush method seemed to be more objective and precise in categorization of health care than the San Joaquin medthod in patients in medical ntensive care unit.

0342 THE USE OF ENOXAPARIN IN ACUTE CORONARY SYNDROME ONSET. THE IMPORTANCE OF DO NOT CROSSOVER HEPARINS

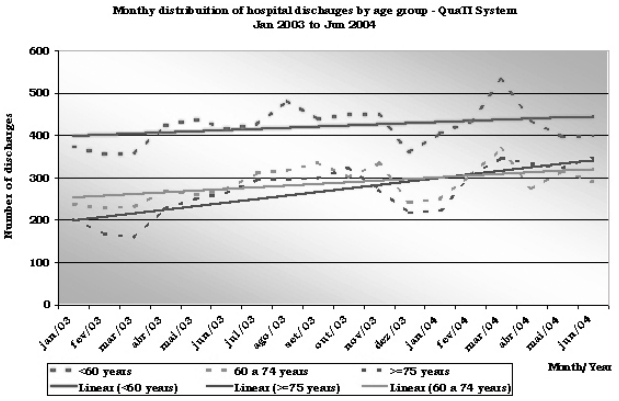
S Sá Jr[2], F Braga[1], G Nobre[2], M Carvalho[1], P Nogueres[1], F Afonso[2], C Vilella[2], J Kezen[1]
1 Hospital Samaritano; 2 Hospital Rio-mar

Background: Subcutaneous (SC) enoxaparin, a low-molecular-weight heparin (LMWH), seems to be at least as safe and effective as unfractionated heparin (UFH) in patients with non-ST elevation acute coronary syndromes (NSTE-ACS). However, the recently published SYNERGY trial showed an increase in TIMI major and minor bleeding rates, explained for crossover between pre and post randomization treatments, making with patients receive LMWH and UFH.
Objectives: Test the Hypothese above, using a group of patients with NSTE-ACS
Methods: We retrospectively reviewed 259 patients admitted to the coronary care unit with NSTE-ACS, treated with enoxaparin, subcutaneous (SC) 1mg/kg/q12h and additional intravenous (IV) dose, when a coronary angiography were required (none took UNF), looking those who could fill the SYNERGY inclusion and exclusion criteria. After selection, using the Binomial test for proportion, test the SYNERGY's probabilities of all baselines characteristics, in-hospital events and procedure through 30 days, concomitant medications during hospitalization, 30days death, 30 days death and acute myocardial infarction (AMI), TIMI major and minor non CABG-related bleeding, all of then using UNF arm.
Results: We found 77(29,7%) SYNERGY like patients, with a mean age of 73.9 + 6.5 years (49% men). The TIMI major non CABG-related bleeding were 0% vs. 1.8%; and minor bleeding 16.8% vs. 7.6% (p=NS) respectively for our serie and SYNERGY. The 30 days death, and 30days death or AMI were 3.8% vs. 3.1% (p=NS) and 6.5% vs. 14.5% (p=0,03) respectively for our serie and SYNERGY. Regardless of higher use of clopidogrel (97.4% vs. 63.3%, p<0,0001) and glycoprotein IIbIIIa inhibitors (31,2% vs. 41,8% p=0,038), our serie did not show increased bleeding. The higher rates of percutaneous coronary angioplasty (100% vs. 47.4%, p<0.0001) and clopidogrel and glycoprotein IIb/IIIa inhibitors use could explain the lower rate of death or AMI in 30 days
Conclusion:. The use enoxaparin without crossover to UFH, together with a invasive approach is a safe and effective in patients with high risk ACS.

0343 TRENDS OF AGE UTILIZATION IN ICU RESOURCES ARE MATCHED BY POPULATION AGING PROCESS IN BRAZIL

MG Rocha[1], D Schout[2], SC Oliveira[2], M Knibel[1]
1 Amib, São Paulo, Brazil; 2 Dixtal, São Paulo, Brazil

Introduction – The QuaTI System, sponsored by AMIB and DIXTAL, is developing an important database for Intensive Care in Brazil. QuaTI System offers significant information for the participating ICUs for their continuous improvement, and gives data, although partial, of demographic characteristics of patients seen at participants ICUs. In our country, there is steady decline in natality and mortality in the past 30 years, showing an irreversible and accelerated aging population process. Life expectancy at birth is 68 years and expectation at 60 years is more 18 years in average. In 1970, 5,07% of population was older than 60, in 2000, 8,56%, and in 2002, 9,3%. In South and Southeast, 10,2% of population are more than 60 years old.
Material and Methods – The QuaTI System is formed by 53 ICUs. Descriptive analysis of the database for the period January 2003 to June 2004.
Results and Discussion – The database contains 17.620 records. We observed a linear growing tendency for all age groups. In 60-74 years old age group there is a more marked increase em relation to those less than 60 years old. Patients older than 75 years show an even more accentuated tendency as showed in Graphic 1. The conditions responsible for this increase are Acute Myocardial Infarct and Femur Fracture. In this database, 58,8% of all records are of patients older than 60 years, 28,7% between 60-74 years old and 30,1% older than 75 years.
Conclusion: These findings confirm the trends showed by populational studies in Brazil and call attention of ICU care providers to develop plans to support this older group of patients with proper care.



0344 FEVER IN AN ADULT INTENSIVE CARE UNIT

H Caballero, H Bianco, R Ferreira, K Davalos, S Baez, B Figueredo, C Ayala, M Villafane
Clinics Hospital, Faculty of Medicine of the Asuncion National University. Paraguay

Objectives To determine the frequency, causes and characteristics of fever in an adult Intensive Care Unit (AICU)
Methods: an observational, prospective study was conducted in an ICU between January 2001 and July 2003. All patients with ≥38.4ºC axillary is temperature in two or more occasions in a period of 48 hours (hs) were included. There were counted all the episodes that had began ≥48 hs after admission to the unit or a new episode separated from the last one for ≥hs. Variables analyzed: day of onset, temperature reached, conditions for admission to the unit, causes of fever and mortality. It was considered early fever when it started from day 0 and 5, and late fever when it started in the day 14 or more.
Results: Of 872 patients included, 166 (19.03%) were febrile and it was found 205 episodes of fever. Conditions for admission were medical 52.79%, surgical 47.2%. Median age was 51.5 ±19.8, women account for 57.2%. Median APACHE II was 17 ±8.6, SAPS 34.19 ±16.6. Between the day of admission and the first episode of fever, the median was 11.3±13.4 days. Early fever was found in 40% (n:82) and late fever in 20.55% (n:42). Maximum temperature reached was 42ºC and the median was 39.6ºC. Origins of fever related to infectious 71.2% (n:146), non infectious 4% (n:8), undetermined 24.9% (n:51). Among infections, 33.4% were pneumonias, 27.5% urinary tract infections, 17.5% catheter related, 10.3% bloodstream, 6.4% surgical site, 4.4% other. Among non infectious, 28.6% were central fever, 14.3% were due to atelectasy, 14.3% had peripheral catheter, 14.3% other. Mean temperature according to origins was, infectious 39.39±0.64, non infectious 39.13 ±0.40, undetermined 39.85 1.06 (p=0.005). Medical conditions were associated to infectious origin in 73.8% vs 64% in surgical conditions [OR1.18 (0.45-3.10) p 0.7]. General mortality was 43%, and associated risks were: early fever [OR1.9 (0.7-4.8) p0.1]; infectious fever [OR1.04(0.4-2.2) p0.9]; temperature ≥39ºC [OR2.56 (1.24-5.30) p0.005].
Conclusions: almost 1:5 patients in ICU presented fever in the period of study, most of them of infectious origin, with a mean late date of onset. Temperature was variable according to the origin. Mortality was high, specially in those with ≥39ºC.

0345 USE OF ENOXAPARIN IN THE MANAGEMENT OF NON-ST ELEVATION ACUTE CORONARY SYNDROME DURING PERCUTANEOUS CORONARY INTERVENTION: INTRAVENOUS BOLUS DOSE OR NOT ?

S Sá Jr[1], F Braga[1], J Mansur[1], G Nobre[2], P Nogueres[1], C Vilella[2], F Afonso[2], C Akstein[2], L Antelo[2], J Kezen[1]
1 Hospital Samaritano; 2 Hospital Rio-mar

Background: Subcutaneous (SC) enoxaparin, a low-molecular-weight heparin, seems to be at least as safe and effective as unfractionated heparin in patients with non-ST elevation acute coronary syndromes (NSTE-ACS). However, the ideal anticoagulation regimen when percutaneous coronary intervention (PCI) is required is unclear, and many strategies have been proposed.
Objective and Methods: We retrospectively compared the outcomes (bleeding and ischemic complications) between patients who received weight-adjusted intravenous enoxaparin (WAIE) during PCI and those who did not receive WAIE. Patients admitted to the coronary care unit (CCU) with NSTE-ACS who had undergone PCI and had been previously treated with SC enoxaparin 1mg/kg q12h were included. Criteria for WAIE use were as follows: 1) PCI carried out more than 6 hours following the last SC dose of enoxaparin; and 2) Less than 24 hours (2 doses) of SC enoxaparin therapy prior to PCI.
Results: A total 163 patients (66,9% men) were included in the analysis; 45 (27,6%) received WAIE and 118 (72,4%) did not receive WAIE. There were no significant differences between the 2 groups regarding platelet inhibition therapy with aspirin, clopidogrel or glycoprotein IIb/IIIa inhibitors. The incidence of major and minor bleeding was 0% and 0,8%, and 7,6% and 13,3%, respectively, for the WAIE and no-WAIE groups (p=NS). The in-hospital, 30-day and 6-month rates of cardiovascular death were 0,8% and 2,2%; 0,8% and 4,4%; 2,5% and 4,4% for no-WAIE and WAIE groups, respectively (p=NS for all). The arterial sheaths were removed sooner (< 8 hours after the last SC enoxaparin dose) in the no-WAIE group (89, 8% vs 40%, p<0,00001) without increase in local complications. There were no thrombotic complications during the procedure in any of the groups, and all PCI were successfully carried out. The in-hospital, 30-day and 6-month incidences of ischemic events were not statistically different between the 2 groups (p>0,05).
Conclusion: Both treatment approaches were safe and effective. However, the use of no additional intravenous enoxaparin during PCI allowed for an early removal of the arterial sheath.

0346 THE USE OF GLYCOPROTEIN IIBIIIA INHIBITORS IN THE ELDERLY PATIENTS WITH ACUTE CORONARY SYNDROME: SAFETY ANALYSES

S Sá Jr[2], F Braga[1], J Mansur[1], F Alvin[1], C Akstein[2], F Afonso[2], L Antelo[2], C Vilella[2], L Gustavo[2], G Nobe[2]
1 Hospital Samaritano; 2 Hospital Rio-mar

Background: Despite of recent advances in the treatment of acute coronary syndrome (ACS), elderly patients (EP) still have an elevated mortality, as high as 30% in patients older than 75 years, when compared with rates of 1 to 5% in younger populations. This may in part be due to the fact that new therapeutic strategies, such as glycoprotein IIb/IIIa inhibitors (GP2b3al), are not routinely used in the EP for fear of bleeding complications.
Objectives: Retrospectively assess the safety and efficacy of the GP2b3al in patients older than 75 years with ACS compared to those younger than 75.
Methods and Results: Of 152 patients admitted to the coronary care unit with ACS and treated with GP2b3al , 13 (8.6%) were older than 75 years (mean 78.7 + 5 vs. 58.8+ 10 years). Ten (76.9%) received tirofiban and 3(26.1%) received Abciximab; 11(84.6%) EP had non ST elevation ACS and 2 (15.4%) had ST elevation ACS. All EP were revascularized: 9 (69.2%) by percutaneous coronary angioplasty and 4 (30.2%) by coronary artery bypass graft surgery. The TIMI major and minor bleeding rates were 30.8% and 7.7%, respectively, while the bleeding rates in those younger than 75 were 1.4% and 8.6%, respectively. Only the rates of minor bleeding were statistically significant (p=0.03; Fisher exact test, OR=4.7, 95% CI=1.2-17.5). The in-hospital 30-day and 6-month rates of cardiovascular death (7.7% for all the three follow ups) were not statistically different (p>0.05). Four (30.8%) EP underwent PCI within the first 6 hours of hospital admission.
Conclusion: Despite the four-fold increase in minor bleeding events, the EP treated with GP2b3al had lower mortality rates than those reported in the literature. More importantly, no increase in cardiovascular mortality after hospital discharge was observed, pointing out that future prospective randomized trials should not neglect this patient population

0347 INSERTION OF NURSES JUST GRADUATED IN THE INTENSIVE CARE UNIT THERAPY: WHAT ARE THEIR DIFFICULTIES AND HOW TO HELP THEM?

S Mori[1], KJ Nakagawa[2], IY Whitaker[3]
1 RN, Nursing Department, Universidade Federal de São Paulo - Unifesp; 2 RN, Intensive Care Unit, Hospital São Paulo; 3 RN, MSN, PhD, Nursing Department, Universidade Federal de São Paulo - Unifesp

Introduction: The Intensive Care Unit (ICU) is characterized for its assistance complexity and the use of specific technological resources. Thus, experienced nurses in the ICU are given priority when employed, but it must be highlighted that the employment of nurses who have recently graduated generates concerns regarding knowledge, assistance and productivity. Objectives: To identify the main difficulties reported by the recently Nursing Graduates and Nursing Specialization - Modality - Residence in the ICU, whose first job was in the ICU position and to identify the main subjects analyzed during the course that have contributed to their practices. Methodology. This is a descriptive study that includes recently graduated nurses from the Nursing Courses between 1999 and 2003 and Specialization Modality - Residence ICU from 1997 to 2003 in Federal University of São Paulo (Unifesp). From the list supplied by Unifesp with 287 names from the Nursing Course and 25 names from Specialization, it was ruled out those already known who did not initially worked in the ICU. To obtain the data, a questionnaire was sent with questions related to their first professional initiation in ICU and the consent form to 175 nursing graduates and 23 from Specialization. Results: Among the Nursing Graduates it was noted that 25 (14.28%) answered the questionnaire, of these ones 19 (76%) had begun professionally in ICU in the University hospital. 15 (60%) answered that the ICU was not the area of their first choice. The main difficulties were regarding to: how to handle the equipment (20), technical assisting skills (16), interpersonal relationship (12), management (11) and the theoretical knowledge (7). The nurses quoted that the subjects which have helped them most in their practice have been: states of shock, advanced cardiac life support (ACLS), neurological evaluation, respiratory failure and mechanical ventilation. As to the Specialization Graduates it was observed that 15 (65, 21%) answered the questionnaire. Of these, 10 (58.82%) had been hired in the ICU of the University hospital. Among the main difficulties quoted we can mention: management (10), how to handle the equipment (5) and interpersonal relationship (4). The subjects quoted as the most helpfull in their practice were: shock state, mechanical ventilation, neurological evaluation, respiratory failure, electrolyte regulation, renal failure, dialysis therapy, disorders of glucose, ACLS and poisoning. Actually the theoretical knowledge does not guarantee the practice, but the practice cannot exist without the solid theoretical knowledge. In a wider view this context may have influenced the difficulties among the graduates. Conclusion: The results support the importance of directing the nursing teaching in ICU in order to develop a better nurses' skills during their education. The nurses have to develop a solid base knowledge in order to be able to process the critic thought, to deal with technology and to accomplish the clinical judgment in ICU environment.

0348 ACCURACY OF THE GRAM STAIN EXAMINATION OF RESPIRATORY TRACT SAMPLES IN THE PREDICTION OF VENTILATOR ASSOCIATED PNEUMONIA (VAP) AND ITS UTILITY IN THE SELECTION OF THE EMPIRIC ANTIBIOTICS

R Valentini, D Yagupsky, I Bonelli, S Attie, L Mazzuoccolo, G Jannello
Instituto Universitario C.E.M.I.C. (Centro de Educación Médica e Investigaciones Clínicas), Buenos Aires, Argentina

Introduction: early and appropriate use of empiric antibiotics (ATB) is essential to the treatment of VAP. Tests that contribute with early diagnosis and selection of the initial ATB in patients(pt)with VAP are useful. Objective: to evaluate the accuracy of the Gram stain examination of the respiratory tract samples in the prediction of VAP and its potential role in the selection of empiric ATB. Materials and methods: prospective evaluation of pt with clinical suspicion of VAP defined as a new or progressive infiltrate on the chest xR, with ≥2 of the following: leukocytosis or leukopenia, $T^o > 38^o$ o $< 36^o$, decrease of the PaO2/FiO2 and purulent tracheal secretions. Specimens for bacteriologic analysis were obtained by bronchoscopy BAL or blind mini-BAL (minibal) through a protected catheter. VAP was confirmed when the quantitative cultures of the BAL and minibal were $\geq 10^4$ufc/ml and $\geq 10^3$, respectively. We included pt who were not under ATB (≥48 h) or without any changes in the ATB in the 48 h previous to the BAL or minibal. The sensitivity (S), specificity (Sp) and predictive positive (PPV) and negative values (NPV) of the Gram stain were calculated considering the BAL-minibal culture results as a reference. We also compared what was observed in the sample stain (gram-negative bacilli -GNB- or gram-positive cocci -GPC-)with the BAL-minibal culture. Results: we included 95 episodes of 69 pt with suspected VAP. Age: 68 ± 14 y/o, 56% male, Apache II 19 ± 6. Days on mechanical ventilation: > 4 days in 87%. Respiratory samples were obtained by BAL in 54%, minibal in 46%, and under ATB in 74%. VAP was confirmed in 52 cases (55%). Etiology: GNB in 42 and GPC (allstaphylococcus) in 10 cases. VAP was polymicrobial in 23 out of 52 (74%, mixture of GNB and 26%, staphylococcus plus GNB). The Gram stain was positive in 31 cases. (all with VAP diagnosed). In 64, Gram stain was negative, but VAP was diagnosed in 33%. The S of the Gram stain in predicting VAP was 60%, Sp 100%; PPV: 100% and NPV: 67%.The match between the Gram stain and the culture results showed:

	VAP (+) GNB (n=42)	VAP (-) GNB(n=53)			VAP (+) staph. (n=11)	VAP(-) staph.(n=84)
Gram stain positive for GNB	22	0		Gram stain positive for GPC	10	0
Gram stain negative for GNB	20	53		Gram stain negative for GPC	1	84

The accuracy of a GNB stain was: S 52%; Sp:100%; PPV: 100%; NPV: 72% and the accuracy of a GPC stain was: S: 91%; Sp: 100%; PPV: 100%; NPV: 99%. Conclusions: positive Gram stain examinations of respiratory tract samples were highly predictive of VAP but a negative stain did not assure its absence, especially if VAP was caused by GNB. However if GPC was not observed, staphylococcus causing VAP was very unlikely. It would be feasible to avoid the empiric use of anti-staphylococcus therapy according to the Gram stain result but it should be necessary to know the safety of this approach in future studies.

0349 QUATI SYSTEM - CLINICAL AND EPIDEMIOLOGIC PROFILES OF ICU CARE IN BRAZIL –

MG Rocha[1], D Schout[2], AL Santoro[1], SC Oliveira[2], M Knibel[1]
1 Amib, São Paulo, Brazil; 2 Dixtal, São Paulo, BrazilL

Introduction - QuaTI System (Qualidade em Tratamento Intensivo) is the Critical Care Data System for Intensive Care Units (ICU) in Brazil. It was created by AMIB (Associação de Medicina Intensiva Brasileira) and DIXTAL in 1999 to measure and describe the care of the ICU patient in Brazil. To accommplish this mission, the Brazilian Society created a Board with critical care praticioner members to develop the needed data set, that include demographics, resource utilization and APACHE III. Now ICUs throughout Brazil collect those data and periodically forward then to QuaTI System central site for analysis. Participants generate several local reports for their use, and receive mensal reports comparing their patients, their care, and outcomes with those from similar units. The central database is valuable resource for applied research in critical care. DIXTAL, from São Paulo, implemented the QuaTI System data set, check for data quality and prepare and distribute all reports generated by QuaTi user registry software. The data set, user software and associated documentation was beta tested in 10 ICUs during 2000, and all suggestions were implemented for its launch in 2001.
Material and Methods – The database contains 41.130 admission records. Descriptive analysis for the period between January 2001 to December 2004.
Results and Discussion - As December 2004, 53 ICUs in 46 hospitals were participating, 45 Adult and 8 Pediatric. Most ICUs (27) have 10 or less beds, 16 have between 10 and 15 beds, 9 ICUs have more than 16 beds, with a average number of 11,1 beds. The mean lenght of stay is 7,1 days; 55,5% are medical patients, 10,5% coronary care and 34% surgical (elective and emergency). SMR is 0,9, mortality rate in ICU is 16,3 %. Age distribuition show 54,9% of admissions for patients more than 60 years old, with 25,5% more than 75 years old. Use of resources show that 34,7% used invasive mechanical ventilation, 8,9% used non-invasive mechanical ventilation, 8% had renal replacement therapy and 7,4 % used invasive hemodinamic monitoring.
Conclusion – QuaTI System is providing useful information of ICU care in Brazil. The local user organize a proper set of indexes and severity criteria, generating reports that facilitate unit benchmarking, quantitative self-assessments and quality improvement activities.
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0350 CHECKING AND MEASUREMENT OF NURSING ERRORS IN ICU

S Portella, A Carta, LM Contrin, G Simonato, MV Caldeira, L Beccari, MRL Jabur, SMA Lobo
Hospital De Base

Critical-care nurses search the quality of nursing assistance through the improvement of their work. The processes carried out by the staff must be monitored and measured in order for them to offer opportunities for assistance improvement. The objective of this prospective study is to measure and quantify the errors made by the General Surgical Clinical ICU nursing staff of a 24-bed hospital school. The data collection was carried out from September 2004 to January 2005. A total of 400 patients were enrolled in this study, and 514 error evaluations were performed, totalizing 550 errors related to medications and nursing procedures. Out of these, 41.94% of occurrences took place in the morning, 40% at night, and 44% in the afternoon in the period mentioned. Medication errors were related to unedifying drugs (43.47%), prescribed and not undertaken medications (23.18%), schedules errors (17.39%), and drug administration (2.17%). As for the procedures not undertaken in the research period, 33.98% of the errors were related to undifined serum catheters; 21.35% to the incorrect fluid balance; 15.29% to the vesicais probes without attachment, and 10.92% to past due serum catheters that have not been changed. However, we can conclude that it is important to know and to analyze the errors that might happen, so that interventions and permanent education could be considered in order to sensibilize the staff about the problem and to afford medical assistance with quality.

0351 EPIDEMIOLOGY OF CANDIDEMIA IN CRITICALLY ILL PATIENTS

R Reina, C Balasini, S Carino, G Saenz, G Martins, M Toro, G Ferrara, F Pereda, P Casteluccio, I Zoilo, E Estenssoro
Servicio de Terapia Intensiva. Hospital Interzonal de Agudos General San Martín, La Plata, Buenos Aires, Argentina

Background /Objectives: Candidemia is the fourth most common bloodstream infection worldwide. This infection is particularly relevant in the ICU, where it is associated with increased mortality and morbidity. Our goal was to describe clinical characteristics and outcomes of candidemia in the ICU.
Methods: This was a prospective cohort study that included all patients admitted between 1/1/00 and 1/4/04 that developed primary and catheter-related candidemia (PC and CR-C respectively) in a mixed, university-affiliated hospital ICU. The following data were recorded: epidemiological variables, day of diagnosis of candidemia, SOFA score and shock on the day of diagnosis ($SOFA_c$ and $Shock_c$), typification of Candidaspecies; outcome, days on mechanical ventilation (MV) and hospital length of stay (LOS H). Results are expressed as %, mean ± SD or median [IQ range], as appropriate.
Results: 27 patients developed candidemia: 2.5 episodes/1000 admissions; 25 (93%) PC and 2 (7%) CR-C. Patients´ age was 43 ± 19; male gender 52 %; diagnosis at admission: 13 (48%) surgical, 14 (52%) medical APACHE II 21 ± 7 and SAPS II 39 ± 13; expected mortality 42% and 39%, and observed mortality 41%; Mc Cabe score 1.4 ± 0.7; SOFA at admission 7 ±3. MV duration was 32 [17-51] days, and LOS H was 44 [20-54] days.
Eleven (41%) patients had septic shock, with 73% mortality. All patients but one had indwelling central venous catheters at the moment of diagnosis of candidemia. Additional data are shown in the table.

Candida species	n patients	n episodes	Day of diagnosis	SOFAC	shockC	mortality
C. albicans	5	5	21[10-38]	5±2	60%	60%
C. tropicalis	9	9	22[11-38]	5±2	44%	22%
C. parapsilosis	8	8	20[10-38]	5±2	38%	25%
C.speciess	3	3	32[5-42]	6±2	67%	100%
C. glabrata	1	1	28	6	-	-
C. alb + C. trop+ trop	1	1	9	6	-	-

There were no significant differences in baseline and clinical characteristics between C. albicans(n= 5) and C. non albicans(n= 22). Despite this, patients with C. albicanswere older (54 ± 22 vs 41 ± 17; p=0.2), and had a tendency towards spending more days on MV (44 [17-54] vs. 30 [17-50]; p=0.1), and in the hospital (50 [17-54] vs 39 [21-54]; p= 0.3).
Conclusions:1) Candidemia was an infrequent infection in our ICU, with an incidence similar to that described in the literature. 2) Patients with C. albicansand nC. non albicans were similar, but those with C. albicansinfections tended to be older and to spend more time in MV and in hospital. 3) Presence of septic shock at the moment of candidemia increased mortality.

0352 THE BALANCED SCORECARD AS THE EMERGENCY DEPARTMENT'S MANAGEMENT MODEL

G Jung[1], A Di Leoni Ferrari[1], EJ Jacques[2]
1 Hospital de Pronto Socorro Deputado Nelson Marchezan; 2 Hospital Mãe de Deus

Background: The health care scenario is getting more complex every time. Multiplicity of factors such as: progressive lack of resources, the demand for cost reduction, concerns about waiting times and length of stay and accessibility to primary care, continuously force the health care providers to re-think management models for the Emergency Department (ED). Addressing to put into practice the Balanced Scorecard (BSC) as the management model for the ED, this study reviews the specialized literature about this matter. From that learning, together with an analysis of the health care scenario and methodology premises, it also describes the construction process of a specific management model for the ED.
Objectives: Recommend the BSC as the management model for the ED, so as to contribute to the improvement of the hospital's management practice.
Methods: 1) Review the literature about application of the BSC method within health care organizations; 2) to analyze the proved ED's problematic scenario; 3) to structure a strategic planning for it; 4) construct the proper indicators and elaborate the strategic map for the ED; 5) definition of the ED's management model and align the proper evaluation system to strategic objectives. The objectives set for the study demanded to make two variations to the traditional BSC's structure: 1) the health care management was divided into: a) economic – financial management and b) health care management in itself; 2) regarding the ED's peculiarities, we added a number of new perspectives (External Processes, Community and Health care outcomes) to those previously existing within the BSC's premises.
Results: The resulting model, structured through the BSC methodology, pointed out 7 management focus or perspectives and 30 strategic objectives. These were divided into 10 economic – financial and 20 objectives related to health care. Altogether we obtained an equilibrated group of measures in the financial and non-financial spheres: patients and family (13); internal processes (20); external processes (07); persons (15); community (5); financial (09) and health care outcomes (13). The presented categorization demonstrates that internal processes, persons and health care outcomes, should occupy a considerable amount of the management's action time.
Conclusions: The success of the recommended management model for the ED is based upon the management team's capacity to monitor the health care scenario, to plan, anticipate and act in advance, mainly in front of deviations that could determine the exhaustion of the resources and impede the achievement of the best results. Moreover, this study focuses the necessity of setting the strategic objectives in the clearest manner and to be coherent when choosing the indicators, along with the identification of distinctive perspectives that will lead the management action, contributing to obtain better health results and to augment the society's health value.
Key words: emergency department – balanced scorecard – management.

0354 THE BRITISH COLUMBIA EXTRACORPOREAL LIFE SUPPORT (ECLS) COMBINED NICU-PICU EXPERIENCE

H Osiovich, AJ Singh, A Cogswell
British Columbia Children's Hospital

Background: ECLS is a modified form of respiratory and or cardiovascular support used to provide bypass for patients with potentially reversible respiratory and or cardiac failure. ECLS can be achieved, when hemodynamically feasible, with the use of a double lumen venous cannula (VVDL) placed in the right atrium as compared to venoarterial (VA) for respiratory and cardiac support that requires the insertion of venous and arterial cannulae.
At BCCH a combined team of neonatologists and pediatric intensivists along with ECLS specialists work together to provide ECLS care to this extremely sick newborn and pediatric population.
The Extracorporeal Life Support Organization (ELSO) is an international consortium of health care professionals whose primary mission is to maintain a registry of the results of ECLS in active ELSO centers. To date (January 2005) more than 30,000 patients have been treated with ECLS worldwide.
Objective: To review the results of the ECLS experience at BCCH and to compare them with those from the ELSO registry.
Methods: Retrospective review of all medical records of patients who were placed on ECLS at BCCH from 1999 to 2004. Venovenous (VV) ECLS is our preferred mode of support for neonatal and pediatric respiratory failure.
Results: A total of 70 patients aged one day to 15 years underwent a total of 73 runs of ECLS at BCCH for the following indications: Neonatal respiratory failure 24 with a survival to discharge (SD) of 60%. Pediatric respiratory failure 8 (SD 63%). Cardiac failure: Medical 7 (SD 57%); Surgical 28 (SD 43%). Combined cardiac 35 (SD 46%). Other indications: fulminant septic shock 3 (SD 0%).
Survival results from BCCH and ELSO registry are shown below:

		Total (n)		ECLS survival %		Survival to discharge %
		BCCH	ELSO	BCCH	ELSO	BCCH
Neo Resp	MAS	11	6663	91	94	91
	CDH	9	4629	78	52	33
	PPHN	4	2996	75	78	50
Ped Resp	ARDS	8	2142	63	56	63
Cardiac	Medical	7	505	57	55	57
	Surgery	28	5059	75	39	43
Other	Sepsis	3		0		0

Venovenous ECLS was used in 24 (75%) of 32 patients cannulated for either neonatal or pediatric respiratory failure with an ECLS survival of 87% and a survival to discharge of 70% compared to ELSO data (n = 5260 and ECLS survival of 82%). VA was used for respiratory failure in 8 patients with an ECLS survival of 87% and a survival to discharge of 38%.
VA was the only mode of ECLS support for cardiac failure.
Conclusions: VV ECLS can be used with good results for support of patients with respiratory failure. Our overall results are similar to those published by the ELSO registry.

0356 CARDIAC ARREST INCIDENCE DURING ANESTHESIA AND SURGERY IN A SURVEY FROM 1996 TO 2002 AT A TERTIARY TEACHING HOSPITAL

LG Braz[1], NSP Módolo[1], JRC Braz[1], P Nascimento Jr[1], LR Carvalho[2], MG Braz[1]
1 UNESP, School of Medicine, Botucatu, São Paulo State, Brazil; 2 UNESP, Institute of Bioscience, Botucatu, São Paulo State, Brazil

Background and Objectives – The incidence of cardiac arrest and its causes during anesthesia and surgery are variable and difficult to compare due to the various designs used in the major studies. This survey aimed at evaluating the incidence and causes of perioperative cardiac arrests that occurred from 1996 to 2002 at a tertiary teaching hospital.
Methods – After obtaining institutional approval of the Medical Ethical Committee, the prospective incidence of cardiac arrests during anesthesia and surgery was identified from an anesthesia database. Within the seven years of the study, 40,941 anesthetics were performed. Data collected included age; sex; ASA physical status; urgency of procedure (elective, urgent and emergency); anesthetic techniques; type of surgery; and the incidence of mortality. All cardiac arrests were retrospectively reviewed by a Committee in order to identify the main triggering factors, such as patient's disease/condition, and surgical and anesthetic complications.
Results – There were 138 cardiac arrests (33.7:10,000 anesthetics), most of which occurred in neonates (143.7:10,000), in children aged less than 1 year (65.3:10,000), in elderly people (59:10,000), in males, in patients at ASA III physical status (55.7:10,000) or poorer (ASA IV: 351:10,000 and ASA V: 1.925:10,000), in emergency surgeries (242:10,000), during general anesthesia (50.3:10,000) and cardiac (385:10,000), thoracic (147:10,000), vascular (71:10,000), pediatric (56:10,000), gastroenterology (52:10,000) and orthopedic (21:10,000) surgeries ($P < 0.05$). Patient's disease/condition was the greatest cause of cardiac arrest (21.7:10,000) followed by surgical (9.28:10,000) and anesthetic (2.69:10,000) complications ($P< 0.05$). Eighty-nine patients died (21.7:10,000 anesthetics). The main causes of cardiac arrests attributable either to patient disease/condition or surgical factor were sepsis and multiple organ failure (22.8%), complications associated with cardiac surgery (18.1%) and trauma (17.3%). The main causes of cardiac arrests attributable to anesthesia were problems in airway management (63.6%), medication-related events (27.3%) and fluid overload (9.1%).
Conclusions – The incidence of cardiac arrests during anesthesia is high while the incidence related to an anesthetic factor is lower in comparison to patient disease/condition or surgical factors. Most perioperative cardiac arrests were related to airway management as well as medication and anesthetics administration. Improvements focused on these areas may result in better outcomes.

0357 SOFA AND PCR TRENDS IN PATIENTS WITH SEVERE SEPSIS/SEPTIC SHOCK TREATED WITH ACTIVATED PROTEIN C

A Gullo, G Di Capua, F Iscra
Department of Perioperative Medicine, Intensive Care and Emergency, University–Hospital, Trieste, Italy

Background. It is known that early intensive directed therapy is beneficial in patient affected by severe sepsis/septic shock. The best time for interventation is not well established. The aim of our clinical study is observation of timing rhAPC therapy effects on trend of SOFA score and C-reactive protein (CRP) in a group of septic patient with standardized intensive therapy.
Methods. A group of 15 patients with severe sepsis/ septic shock and >2 organ failure was studied. The patients were treated with standardized intensive therapy (as mechanical ventilation, inotropic/vasopressory infusion, antibiotics, artificial nutrition, insulin for glycemic control).The infusion of rhPCa at 24 mcr/kg for 96 hour was started after a time for study enrolling (< 48h). SOFA score was calculated at the admission in ICU and every day during the patients stay in ICU and serum CRP (mg/dl) was measured during the same period. Data were showed as mean with standard deviation (Standard error of mean SEM); statistical analysis was performed with non parametrics serial test (Friedman test); $p < 0.05$ was considered statistical significant.
Results. We recorded clinical data of 13 patients suffering severe sepsis and septic shock; 3 patients deceased (1 patient sepsis related, 1 patient as consequence of MOF, 1 patient died for septic shock, with pump failure after cardiac surgery). The results are shown in tab 1.

TAB 1	Incoming	rhAPC	+24 h	+48 h	+72 h	+96 h	+168 h
§ SOFA	8.3	10.2	9.8	9.0	7.8	6.7	2.2
M ± (SEM)	(0.9)	(0.6)	(0.8)	(0.8)	(0.8)	(0.9)	(0.4)
** CRPmg/dl	19.3	21.8	20.1	17.0	14.6	12.0	7.1
M ± (SEM)	(2.6)	(1.9)	(1.7)	(2.0)	(2.1)	(1.9)	(1.1)

Friedman test §: <0.001; **: <0.003

Discussion and conclusion. During the ICU stay the patients SOFA score significantly worse until the begin of rhAPC infusion (40 ± 2 hours); after 48 hr of drug infusion SOFA score decreased. The serum CRP values increased after ICU patients admission, and it reduced significantly after 96 h of drug infusion. Both SOFA score as CRP values shown a significantly decrease after infusion of rhAPC associated with aggressive therapy. Surviving sepsis campaign (1) focussed that early management and improving standards of care are the two pillar of clinical decision making thinking that lag between the time from admission of septic patients in ICU and rhAPC administration could be harmful.
References. Dellinger RP, Carlet JM, Masur et al. (2004) Surviving sepsis campaign guidelines for management of severe sepsis and septic shock. Crit Care Med.32(3):858-887

0358 NUTRITIONAL SUPPORT IN THE INTENSIVE CARE UNIT DURING SIX CONSECUTIVE YEARS

E Menendez, M Perman, C Kecskes, M Goldin, S Ilari
Nutrition Support Team- Adult Intensive Care Service-Hospital Italiano De Buenos Aires-Argentina

Objective: To evaluate some results of a Nutrition Support (NS) program of an adult Intensive Care Unit (ICU) of a teaching hospital.
Methods: The registered data of NS team in the ICU was assessed from 01/01/1998 till 31/12/2003. The data recorded in an Excel file, include nutrition assessment, patients' conditions and events, nutritional indications and NS problems and complications.
Admission diagnosis was used to classify patients as: Neurological/neurosurgical (N), Medical (M), Surgical (S), and Trauma (T). The nutritional assessment was performed at admission with the Subjective Global Assessment (SGA) methods. All problems and complications of the NS were registered according previous definitions.
Results: A total of 1,364 patients were assessed, with a mean age of 60.29 years. According to their diagnosis they were grouped as: M = 486 (35.5%), N = 470 (34.5%), S = 384 (28.2%) and T = 24 (1.8%). The SGA were: "A" = 831 (60.9%), "B" = 393 (28.8%), "C" = 119 (8.7%), non-assessed = 21 (1.5%). The average time until beginning of NS was 3.8 days. Enteral feeding (EF) was administered in 1,158 patients (84.9%), parenteral feeding (PF) in 87 patients (6.38%) and combined feeding (CF) in 119 (8.72%). Total EF = 14.452 days and mean EF duration time = 12.5 days; total PF = 709 days and PF days = 8.2; CF = 426 days and CF = 3.6 days. Eighty percent of PF was administered to surgical (S) patients.
The EF was administered by large-bore tubes in 311 patients (24.3%), polyurethane small-bore tubes in 736 (57.6%), very small-bore PVC tubes (positioned trough the biopsy channel of an endoscope) in 148 (11.5%), jejunostomy in 62 patients (4.8%), gastrostomy in 14 (1.1%) and gastro-jejunostomy in 6 patients (0.4%).Tube location was: gastric in 620 patients (48.5%), and post-pyloric in 657 patients (51.4%).
Mechanical complications of EF tubes were: accidental removal and displacement in 272 patients (56.5%), mal-position in 165 (34.3%), obstruction in 38 patients (7.9%) and rupture in 6 patients (1.2%).
Complications of EF were: diarrhea in 183 patients (14.4%), constipation in 482 (37.8%), gastroparesis in 473 (37.1%), distension in 279 (21.9%), high residual volume in 178 (14.0%), vomiting in 39 (3.1%) and aspiration in 13 patients (1.0%). Hyperglycemia was observed in 46.0% of the patients receiving NS, corresponding to 44.9% in EF and 49.0% in PF + CF.
Conclusions: Some of the results interesting to comment are:
Some degree of malnutrition in 37.53% of the patients at admission, beginning NS in the first 72 and 96 hours Only 6.4% of the patients received PN, but another 8.7% received PN jointly with EN. Large bore tubes was used only at the beginning of EF and changed after testing the gastric tolerance. 53% of enteral tubes were inserted postpiloric by a blind method at bedside and 11.6% with endoscopic aid. More constipation than diarrhea, probably due to the common use of morphine for sedation The percentage of patients with hyperglycemia are similar in EF and PF.

0359 RANDOMIZED CLINICAL TRIAL OF SEDATION GUIDED BY PROTOCOL VERSUS CLINICAL CRITERIA IN MECHANICALLY VENTILATED CRITICALLY ILL PATIENTS

A Lanas, E Tobar, S Pino, P Aspeé, S Rivas, R Asenjo, D Prat, J Castro
Hospital Clínico Universidad de Chile. Santiago, Chile

Background: The proper use of sedation and analgesic drugs give relief and confort to the critical patients in mechanical ventilation (MV). These are not free from adverse effects, the most harmful prolongation of MV itself. In spite of the actual evidence and recommendations to use protocols guided by goals, this is not an habitual practice.
Objetive: To compare the use of sedation guided by protocol versus clinical criteria in Intensive Care Unit (ICU)patients in MV. The primary end point is 20% reduction of midazolam dose. The secondary end point is an increase of 10% in sedation quality.
Methods: Randomized Clinical Trial. Midazolam and fentanyl infusion were used in both groups. Inclusion criteria was the need of MV for more than 48 hours. Exclusion criteria were hepatic cirrhosis, hepatic transplantation, acute neurologic diseases, neurosurgery, pregnancy, recovered cardiac arrest and limitation of therapeutic efforts. The study was approved by the hospital ethic committee. At admittance to ICU patients were randomized to conventional or protocol group. Clinical and demographic data were collected at protocol inclusion. APACHE II and SOFA were registred.
The protocol group was guided by nurses that were blind to the study goals. Patients were monitored with the Sedation Agitation Scale (SAS) and conductual physiological parameters, to estimate pain. Sedation goals were proposed for each patient at least once a day, based in clinical evolution. The drug doses were adjusted to achieve goals. Acute Agitation (AA) was defined as SAS from 5 to 7. If patient present AA, an algorithm for management was applied. In the conventional group, drugs were adjusted by clinical resident criteria. SAS was registered independently in this group. Sedation quality was defined as the proportion of SAS in target. Weaning was similar in both groups, using a local protocol. It was allowed the suspension of drugs for weaning based in the resident criteria. To compare median in both groups Mann-Whitney U test was used. The comparison of proportions was made by Chi square test for the total of evaluations.
Results: During a 9 month period, 40 patients were included: 22 in protocol and 18 in conventional branch. Median age was 60 v/s 70 years, APACHE II 18 v/s 18, SOFA 8,5 v/s 7,0. Severe sepsis 82% v/s 94% and ARDS 59% v/s 55% respectively. No significant differences were found between the two groups in mentioned characteristics. The midazolam median dose was 0.0395 mg/kg/h in protocol and 0.0565 mg/kg/h in conventional group (p=0.0054). Fentanyl dose was 1,0 v/s 0,988 ug/kg/h respectively (p= 0.37). The sedation goal was obtained in 43,9% of protocol and 31.1% in the conventional group (p=0.001). The evaluations with SAS under 3 were 36,6% v/s 51,5% respectively (p=0.001). There were no difference in the number of AA.
Conclusions: Protocol implementation of sedation in ventilated patients for more than 48 hours in ICU, reduced the midazolam doses and improved the sedation quality.

0360 TRANSTHORACIC INTRACARDIAC CATHETERS IN CHILDREN SUBMITTED TO CARDIAC SURGERY: COMPLICATION DURING THE USE AND THE WITHDRAWAL

R Mantovani, MN Chaud, MLG Pedreira, WB Carvalho
Federal University of São Paulo

Background: The hemodynamic monitoring is often an essential issue during the intensive care provided to children submitted to congenital heart disease surgery. Transthoracic intracardiac catheters implanted during the surgery can be useful for vascular pressure gradient measurements in the post operative period.
Objectives: This study aimed to verify complications related to the use and withdrawal of transthoracic intracardiac catheters implanted in children.
Methods: Retrospective and descriptive study comprised a population of 88 medical charts of children who had received the implantation of transthoracic intracardiac catheters during the surgical intervention, and that had carried through the postoperative period in a pediatric intensive care unit of a university hospital located in the city of São Paulo, in the period of January, 1998 to July, 2003.
Results: The results showed that the majority (61.4%) of the children was female, with an average of 2.4 (± 2.5) years of age and had been submitted to surgery for the total or palliative correction mainly of Ventricular Septal Defect (20.5%), Tetralogy of Fallot (18.2%) and Double Outlet Right Ventricle (13.6%). A total of 132 transthoracic intracardiac catheters had been identified, being 59.1% implanted in the Left Atrium, 31.8% in the Pulmonary Artery, and 9.1% in the Right Atrium. All the catheters were four French of diameter, manufactured in polyurethane, and 98.5% had one lumen. Beyond the monitoring purpose, 44 (33.3%) transthoracic intracardiac catheters had been used for infusion of drugs and blood collection. The stability of the patient (52.3%), presence of complications (32.5%) and death (15.2%) had been identified as reasons of transthoracic intracardiac catheters use interruption. The study of the complications related to the use of the transthoracic intracardiac catheters identified: blockage (46.5%), displacement of the catheter (23.2%), cardiac tamponate (9.4%), catheters non-function (9.3%), emptying (9.3%) and cardiac arrhythmia (2.3%). The main complications observed during the catheters' withdrawal, were resistance to the withdrawal (52.2%) and the bleeding (30.5%), most frequents in transthoracic intracardiac catheters of Left Atrium (65.3%).
Conclusions: Complications were present during the use of transthoracic intracardiac catheters mainly related to catheters' blockage and displacement. Resistance to the withdrawal and the bleeding were the main problems verified during the catheters' withdrawal.

0361 SEDATION OF CHILDREN IN MECHANICAL PULMONARY VENTILATION: CONCORDANCE BETWEEN CLINICAL ASSESSMENT, COMFORT AND RAMSAY SCALES

DM Kusahara, RC Rego, MLG Pedreira, MAS Peterlini, WB Carvalho
Federal University of São Paulo, São Paulo, Brazil

Background: One of the most important goals of the pediatric intensive care is to achieve the pain and stress relief caused by treatment interventions or treatment. During mechanical ventilation the achivement of an optimal sedation level can improve results and the child's well-being, including the prevention of adverse events. Several scores have been developed for the assessment of sedation level. The COMFORT scale was initially designed to evaluate sedation level of children submitted to mechanical pulmonary ventilation, and currently it is one of the most validated sedation scales for pediatric patients. However, the complexity and time spent for COMFORT application can be discouraging, when it is compared with other easier and faster to apply scores as the Ramsay sedation scale.
Objective: The aim of this study was to verify the level of concordance between the sedation levels of ventilated children scored by health care professionals, COMFORT and Ramsay sedation scales.
Methods: A descriptive and correlative study was performed at two pediatric intensive care units of teaching hospitals from the city of São Paulo, Brazil. The sample was composed by 77 ventilated children whose clinical conditions did not request deep sedation or sedation withdraws at the moment of the data collection. The sedation scales were applied by trained observers, and at the same time the health care professionals responsible by the child care expressed their clinical opinion about the sedation level. The sedation levels were classified as adequate or inadequate (insufficient/excessive). The data was analyzed through percentage of agreement and Kappa (k).
Results: The results indicated that the children had in average 5.08 years of age (median=5,6 years), the majority was female (57.1%) and received benzodiazepines (96.1%) as sedative. The percentage of agreement identified between COMFORT and Ramsay scales was of 80.0%, with a Kappa of 0.59 expressing a tendency to concordance. The health care professional's assessment showed a similar percentage of agreement with COMFORT (47.0%) and with Ramsay scale (50.0%). However, the kappa statistics showed a higher concordance level between the health care professionals, clinical assessment and the scores expressed by the Ramsay (k=0.66) than with COMFORT scale (k=0.1).
Conclusions: The results of this study indicated that COMFORT and Ramsay scales had a good level of agreement; the health care professional's assessments showed a poor level of concordance with COMFORT and a good concordance with Ramsay scale. Indeed, health care professionals should use scales to assess ventilated children's sedation level.

0362 CORRESPONDENCE BETWEEN CT MORPHOLOGICAL ANALYSIS AND ELASTIC MECHANICAL PROPERTIES IN NORMAL AND ACUTE LUNG INJURY SWINE MODELS

A Roncally[1], F Jandre[1], AV Pino[2], R Rodrigues[1], F Bozza[1], J Salluh[1], FA Lima[1], F Ascoli[3], A Giannella-Neto[1]
1 Federal University of Rio de Janeiro, RJ Brazil; 2 Pelotas Catholic University, RG; 3 Oswaldo Cruz Institute, RJ

Background: The analysis of the inflection point of the pressure volume (PV) curve, though not easily obtained at bedside, has been used as a guide to set the positive end-expiratory pressure (PEEP) in mechanical ventilation. A clinical alternative is to set the PEEP that minimises the elastance of the respiratory system (ERS), but there is no evidence that this level of PEEP avoid alveolar collapse. This work compares the ventilatory distribution, assessed by the CT-scan morphological analysis of lung compartments, and the behaviour of the ERS in normal and Acute Lung Injury (ALI) piglets during a PEEP titration manoeuvre.
Methods: Four piglets (17.3 ± 2.0 kg) were mechanically ventilated (FIO2 = 1.0, PEEP = 5 cmH2O, VT of 8-10 ml/kg, respiratory frequency of 25–30 bpm) and after stabilisation, a PEEP titration (decreasing PEEP from 16 cmH2O to 0 cmH2O in steps of 2 cmH2O, with 3-minute intervals between each step) was performed. The ALI was then induced by a venous infusion of oleic acid (0.05 ml/kg) until PaO2<200 mmHg. Then, lungs were recruited with 30 cmH2O during 30 s, VT was set to 6–8 ml/kg and a similar PEEP titration from 26 cmH2O was performed.
Airway pressure and flow signals were recorded and ERS, resistance and PEEP were estimated by the least squares method, according to the homogeneous single compartment equation of motion.
Helical CT-scans of the chest were obtained at end-expiratory pauses during the PEEP trials in normal and ALI conditions. The lungs were manually selected from the image and the hyperinflated (-1,000 to – 900 Hounsfield units), normally aerated (-899 to -500), poorly aerated (-499 to -100) and non-aerated areas (-99 to +100) were calculated.
Results: In normal animals, the reduction of PEEP decreased the hyperinflated areas (ranges from 24-62% to 1-7%) while increasing normally aerated areas (30-66% to 72-83%). In ALI animals, there was a reduction in normally and hyperinflated areas (72-76% to 15-26% and 2-16% to 0-1%) and a proportional rise in poorly and non-aerated areas (8-21% to 24-31% and 1-2% to 45-58%). The PEEP that minimised the ERS (16 cmH2O with ERS ranges 54- 81 cmH2O/l and 8 cmH2O with ERS ranges 26-31 cmH2O/l in ALI and normal) presented similar percentages of normally aerated areas (63-79% in normals versus 61-69% in ALI) with less hypinflated areas in ALI (1-8%) as compared to normals (9-29%). In both, normal and ALI, non-aerated areas were minor (1-2% and 2-4%) at the best PEEP and for lower PEEPs the ERS rose with a predominantly increase in non-aerated areas in ALI and poorly aerated areas in normal animals (Figure).
Conclusion: The PEEP that minimised ERS seemed to avoid alveolar collapse in ALI accordingly to CT-scan. High levels of PEEP seem to be applicable to reduce the poorly aerated areas with minor effects on hyperinflated areas. In normal lungs, the dynamics of the normally aerated areas at the best PEEP were reverse to ALI.

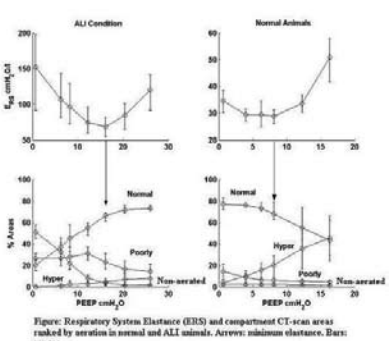

Figure: Respiratory System Elastance (ERS) and compartment CT-scan areas ranked by aeration in normal and ALI animals. Arrows: minimum elastance. Bars: ranges

0363 TISSUE PLASMINOGEN ACTIVATOR FOR ACUTE ISCHEMIC STROKE WITHIN THREE HOURS WINDOW IN THE BUENOS AIRES BRITISH HOSPITAL

FJ Lombi, P Bonardo, RC Reisin, J Halfon, O Martinez, JE Ubaldini, ED Soloaga, MH Pérez, JV Mazzioti, HF Azcona, AA Chueco, RF Vaca Narvaja, MM Fernandez Pardal
Hospital Británico de Buenos Aires

Background: Systemic fibrinolysis for acute ischemic event is an expanding practice in developed countries. The NINDS trial showed that intravenous Tissue Plasminogen Activator (t-PA) administered within three hours window improved clinical outcome at three months. The STARS study and other phase 4 trials demonstrated that these results could be reproduced in community hospitals. To date there is limited information about the application of this therapeutic strategy in South American countries.
Objectives: To report the outcome of the intravenous t-PA for acute ischemic stroke patients in our Hospital.
Methods: Since 1999, our Hospital uses guidelines for systemic fibrinolytic treatment within three hours of stroke onset. All consecutive stroke patients from 18 to 80 years old admitted to our hospital within three hours window between June 1999 and June 2004, were evaluated to receive intravenous t-PA according to the NINDS criteria and TC findings of ECASS II trial. Patients selected to receive t-PA were evaluated with NIHSS pre-therapy, one hour post- therapy and at three months.
Results: 15 patients were thrombolysed within three hours of stroke onset (mean age: 62.23;SD 24.04, range 53-83 years, m/f 7/8). Mean onset to needle time was 157 minutes (SD 26), basal NIHSS: 18 (SD 7.8), post therapy NIHSS: 14 (SD 7.1) NIHSS at three months: 4.2 (SD 4.7). There were four deaths, two were stroke related. 33% of our cases had favorable (NIHSS 0-1) outcome and recovered full capacity. There were four protocol violations (26%) (age >80 years, more than 120 DAP, lower doses of t-PA). Complications included 4 cases of asymptomatic intracerebral hemorrhage and 5 cases of systemic minor bleeding. There were no cases of symptomatic intracerebral hemorrhage.
Conclusions: Our series shows that with strictly adjustment to inclusion and exclusion selection criteria, t-PA is feasible, safe and effective treatment in our local context.

0364 AGGRESSIVE TREATMENT OF RUPTURED ANEURYSMS IN PATIENT IN POOR NEUROLOGICAL CONDITIONS (HUNT Y HESS GRADE 4-5)

MM Baccanelli, JM Zaloff Dakoff, L Langhi, AT Rabadan, R Garcia Monaco, O Peralta, LA Camputaro
Hospital Italiano de Buenos Aires, Capital Federal, Argentina

Objective: The aim of the present study was to analyze the overall management of ruptured aneurysms in patients with poor neurological condition (HH grade 4-5), performing an institutional protocol of early endovascular or microsurgical treatment followed by an aggressive management therapy of the further complications.
Methods: Out of a series of 152 patients with subarachnoid hemorrhage admitted in the intensive care unit between June 1999 and September 2004, 27 patients with 30 aneurysms admitted in poor neurological conditions, (Hunt and Hess grade 4 or 5) were treated. Initially a non- contrast CTscan was performed followed by an angiography in every case. 28 aneurysms of 27 patients were occluded by microsurgical clipping (n=5) or endovascular therapy (n=23) taking account of aneurysmatic architecture and topography, presence of intracerebral hematoma and patient's co-morbidities. The outcome was evaluated with the Glasgow outcome scale at 30 days after the admission.
Results: There were no deaths or complications directly related to the therapeutic procedure. Five patients underwent microsurgery due to the presence of extensive intracerebral hematoma. 22 patients were successfully treated by Guglielmi detachable coils (Boston Scientific/ Target, Fremont, CA) obtaining complete occlusion of aneurysmal sac in 15 cases, 98% in 2, 95% in 3, 90% in 1 and 80% in one. At thirty days after admission 9 patients were alive: 2 had good outcome, 4 patients were moderately disabled and 3 patient was severely disabled.
Conclusion: Despite the small number of patients, this study encourages support aggressive and early treatment for patients with a poor neurological condition after aneurysmal subarachnoid hemorrhage.

0365 PROSPECTIVE STUDY OF RISK FACTORS FOR VENTILATOR-ASSOCIATED PNEUMONIA CAUSED BY ACINETOBACTER SPECIES

C Formento[2], J Medina[1], J Pontet[2], A Curbelo[1], C Bazet[2], J Gerez[1], E Larrañaga[1]
1 Intensive Care Unit Hospital Policial; 2 Hospital Pasteur

Background. The incidence of Ventilator- Associated Pneumonia by Acinetobacter spp is increasing and has high morbility and mortality. It is imperative to identity risk factors for it to be able to employ prevention policies and start with directed empirical therapy.
Objective: identify specific risk factors for Ventilator-Associated Pneumonia by Acinetobacter spp.
Design: prospective clinical study.
Interventions: none
Setting two medical- surgical ICUs.
Measurements During a period of 36 months (from May 2000 to May 2003) all patients with > 48 hours on Mechanical Ventilation and suspected of having a Ventilator-Associated Pneumonia were enrolled. Only bacteriologically confirmed Ventilator-Associate Pneumonia were analyzed.
Results: 218 consecutive patients with clinical suspicion of Ventilator-Associated Pneumonia were enrolled. 125 of Ventilator-Associated Pneumonia were confirmed by culture, 46 Acinetobacter spp. and 79 by other pathogens.
By univariate analysis of the 38 potential risk factors for Acinetobacter spp. 10 were found to have $p < 0.20$ and multiple logistic regression analysis was performed on them.
Previous use of ceftriaxone ($p=0.009$, OR = 5.04) and of ciprofloxacin ($p= 0.006$, OR = 6.65) was significant independent predictors for development of Ventilator-Associated Pneumonia by Acinetobacter spp.
Conclusions: Previous use of ceftriaxone and ciprofloxacin are independent risk factors for the development of Ventilator- Associated Pneumonia by Acinetobacter spp.

0366 INFLUENCE OF THE ORAL ANTICOAGULATION ON D-DIMER LEVELS IN PATIENTS WITH ADVANCED HEART FAILURE

MI Bittencourt, RM Rocha, HCV Rey, F Ferreira, FT Oliveira, FLB Gutierrez, FOD Rangel, R Esporcatte
Hospital Pró-Cardíaco - Unidade Coronariana / PROCEP

Background: We know that advanced heart failure (HF) is associated to several coagulation disturbances, including elevation of the circulating D-dimer levels, contributing to patophysiology and thromboembolic events. We don't know, however, about the influence of oral anticoagulant on D-dimer levels in patients with HF.
Objectives: Verify if patients (pt) with decompensated HF treated with oral anticoagulant present differences in D-dimer levels regarding the other pt without oral anticoagulant
Methods: A cohort study with 70 patients with decompensated HF (85.7% NYHA FC IV) admitted in coronary care unit during 1 year. Of this sample, 53 pt had a D-dimer dosage in the admission and were divided in 2 groups: group A - pt taking oral anticoagulant; and group B – pt that didn't take oral anticoagulant. We compare D-dimer values between the groups. Student "t" test was performed for the analysis and statistical significance defined by $p \leq 0.05$.
Results: The group A (8 pt) had average of age =78.7±11.8 years and 37.5% were male. In this group the RNI average = 4.09±2.61. When compared with group B (45pt; 77.0±10.1 years; 57.7% male) regarding admissional D-dimer levels, we don't observe difference (A – 1326.5mg/dl vs B – 1426.2mg/dl, p = 0.81).
Conclusions: The study indicate that oral anticoagulant therapy did not influence circulating D-dimer levels , despite adequate anticoagulation, suggesting that this drug does not protect completely against all coagulation abnormalities observed in HF.

0367 LUNG MECHANICAL STRESSES INDUCED BY PROTECTIVE STRATEGIES IN ACUTE LUNG INJURY

CP Pássaro[1], PS Leme[1], CML Barbosa[1], MM Morales[1], DS Faffe[1], MB Amato[2], WA Zin[1], PRM Rocco[1]
1 Federal University of Rio de Janeiro; 2 University of São Paulo

Background: Mechanical ventilation using inappropriate settings can produce acute parenchymal lung injury and an acute inflammatory response in the lung. Lung-protective strategies during mechanical ventilation proposed for ARDS patients try to avoid high alveolar pressures by using small tidal volumes (VT) and attempt to keep alveoli open at end expiration with sufficient positive end-expiratory pressure (PEEP). However, excessive reduction in tidal volume may result in harmful alveolar derecruitment depending on the level at which PEEP is set. Conversely, high-PEEP strategies can also lead to detrimental consequences, such as the development of air leaks.
Objectives: The aim of this study is to compare the level of lung mechanical stress induced by overdistension with that determined by shear stress forces generated by repeated opening and closing of the collapsed alveoli in ALI. For such purposes, tissue mechanics and type III procollagen (PCIII) mRNA expression were analyzed in control animals and in those with acute lung injury.
Methods: 30 Wistar rats (180-220 g) were randomly divided in two groups (n=15, each). In control (C) and acute lung injury (ALI) groups, saline (0.1 mL) and paraquat (15 mg/kg) were intraperitoneally injected, respectively. Strips (10x3x3mm) were cut from the left lung and submitted to sinusoidal oscillation at 1 Hz frequency, under amplitude of 5% of unstressed resting length (L0), and force similar to the calculated basal tension (FB) for 5 min (basal condition). Thereafter, both C and P strips were divided into three subgroups (n=5, each) and oscillated for 1 h at the same frequency and amplitude, at basal force (FB group), half of basal force (FB/2 group), or double of basal force (2FB group), in order to simulate CRF level, low PEEP and high PEEP ventilation conditions, respectively. Measurements of tissue resistance (R), elastance (E), and hysteresivity (h) were obtained before and after 1 h of oscillation. Then, the strips were prepared for mRNA analysis of procollagen type III (PCIII) by semi-quantitative method of reverse transcription and polymerase chain reaction (RT-PCR).
Results: Oscillation at double basal force induced a significantly greater change in tissue elastance (46% and 87%) than the oscillation at half basal force (22% and 31%) in both control and ALI groups, while h showed a higher change only in ALI group. Besides, oscillation at basal force led to increased PCIII mRNA expression in ALI groups and this effect was accentuated in doubled basal force (29% with 2FB and 9% with FB/2).
Conclusion: Overdistension trigged more type III collagen fiber than shear stress forces, being more intense in the presence of ALI.
Supported by: PRONEX-MCT, PRONEX-FAPERJ, CNPq, FAPERJ

0368 VARIABILITY IN THE LOCALIZATION OF EXTERNAL REFERENCE POINT FOR CENTRAL VENOUS PRESSURE MEASUREMENT IN CHILDREN

MLG Pedreira, ASC Belela, MAS Peterlini, GCG Gentil, DM Kusahara, WB Carvalho
Federal University of São Paulo

Background: The accuracy of central venous pressure (CVP) monitoring can be influenced by the correct localization and constant use of the same external reference point of the right atrium. It is possible to verify in the literature, as well as in practice, a diversity of external reference points and specific criteria for locating it. The midaxillary line is one of the most commonly used landmark, as an external reference point for CVP measurements in children.
Objective: The aim of this study was to verify the variability among health care professionals and a trained evaluator in locating the midaxillary line as external reference points for CVP monitoring.
Methods: A prospective study was performed at a pediatric intensive care unit of a teaching hospital from the city of São Paulo, Brazil. During CVP monitoring, five evaluations performed in the same patient by nursing and physicians staff and one realized by an evaluator were compared, resulting in a total of 120 measurements performed by 44 health care professionals and 24 measurements realized by an evaluator trained to locate the midaxillary line halfway between the anterior and posterior axillary folds, using a metric parameter to identify it. Data obtained was analyzed by "t" test, Qui-square, ANOVA and Kruskall Wallis tests with a significance level set at 5%.
Results: A statistical significant difference ($p<0.001$) was obtained in the average of variation identified for each studied group (professionals and evaluator). Comparing the variability between the external reference points determinations performed by the professionals, 56 (46.7%) were lower than the ones indicated by the evaluator (variation between – 0.5 to –9), 44 (36.7%) were higher (variation between 0.5 to 4), and 20 (16.7%) were similar (variation 0). The variability (p=0.778) and the concordance level (p=0.899) were not significantly influenced by the professional category; however, a significant negative correlation (r = -0,26 p = 0,005) was verified in measurements variability and length of intensive care experience of the professionals.
Conclusions: The data demonstrated a significant variation between measurements realized by the professionals and the trained evaluator. The variability was not influenced by the professional category (nursing or physicians staff), although professionals with higher length of experience in intensive care demonstrated a tendency of agreement with the evaluator.

0369 MORTALITY IN WORKING DAYS VS. WEEKEND DAYS: THE ARGENTINE EXPERIENCE

C Castarataro, A Gorenstein, M Hepner, A Gallesio, AL Fernandez
Hospital Italiano de Buenos Aires

Background: According to bibliography, mortality in hospitals increases in weekends. This repeats in the ICUs as well. The probable causes include: the decrease of the employees that take care of the patients, less qualified and motivated doctors and nurses, etc.
If you don´t consider the special variablity of weekends, the patients´mortality should be associated to the pathology (intrinsic conditions and comorbilities) and not to the day of the admission.
This homogeneity of results could be considered as evidence of quality in medical care and collaborates to the prestige of the ICU and the Institution.
Objective: To evaluate if mortality of patients admitted in working days is different from the patients admitted in weekends.
Methods: Observational study from a retrospective cohort: patients admitted from 01/01/2003 to 31/12/2003, registered in the soft SATI-Q 2.1 modified.
Stata 7.0
Patients have been classified in three categories of increasing risk: 1. Continuous monitoring. 2. High risk. 3. Critical.
The quick mortality rate during the first 48 hours since the admission (QMR), was divided in "working days" and "weekend days", and then compared through the Chi squared test.
Logistic regression was made. The outcome: "mortality ≤ 48 hours of the admission" and the variable of interest: "admission during weekends".
It was considered the number of nurses, staff doctors and residents, pathology, risk, gender and age of patients.
Through a run chart and a control chart, we evaluated the crude and QMR in each month and each trimester.
Results: 1167 Patients: Female: 45 %. Critical: 32%. Admitted in weekend days: 19%.
We didn´t find significant differences in age (p:0.07), Apachell (p:0.089), LOS (p:0.12), TISS28 (p:0.2) or risk (p 0.32) between the patients who were admitted in working days and those admitted in weekend days.
The global mortality was 15%. The global QMR was 5.91%: for those admitted in "weekend days": 8.5% and for those admitted in "working days": 5.3%. There is no statistical significant difference (p>0.05).

Patients characteristics	Media	SD
LOS	5.4 (1-212)	9.66
Age	59.59 (16-95)	17.65
Apache II	15.18 (1-53)	7.65
Tiss 28	22.94 (7-52)	6.76

Only the risk of the patients is associated with the QMR. There was an increase of the global and QMR in the "weekend days" of the third trimester. The control chart shows it as an special variability and it was associated to an eventual deficit of the nurse´s hours in this period.
Conclusions: In our experience, we don´t find a Statistical significant difference between the QMR, whether "working days" or "weekends".
The risk of the patient was the variable more significant.
Despite we are in a developing country, we could maintain the same standard of attention every single day of the week. The difference in the QMR, though it is not significant, could be decreased and homogenized through a cycle of continuous quality improvement of medical care. Our hypothesis is that the changes in the number and qualification of human resources and the availableness of medical materials and diagnosis would decrease even more the mortality variability.

0370 A COMPARATIVE STUDY OF INDEXES PREDICTING THE WEANING OUTCOME

SN Nemer[1], CSV Barbas[2], JB Caldeira[1], LM Azeredo[1], ST Machado[1], R Gago[1], T Clipes[1], PR Filho[1], LK Ferreira[1], L Tabajaras[1], PCP Souza[1]
1 Hospital de Clínicas de Niterói, Rio de Janeiro - Brazil; 2 Universidade de São Paulo, São Paulo - Brazil

BACKGROUND / OBJECTIVES: Indexes predicting the weaning outcome are frequently inaccurate. With the present study, we aim to evaluate the predictive performance of a new index to predicting the weaning outcome, that we called integrative weaning index (IWI).
METHODS: Two hundred and fifty patients of several etiologies in weaning process that remained up to 24 hours in mechanical ventilation were evaluated (all with PaO2 > 60 mm Hg with FiO2 < 0.4 and PEEP < 8 cm H2O). All patients were submitted to a two-hour trials of spontaneous breathing. Those who sustained two-hour of spontaneous breathing without return to mechanical ventilation in the following 24 hours were considered weaning, while those who could not sustain two-hour of spontaneous breathing or returned to mechanical ventilation in the following 24 hours were considered not weaning. Frequency / tidal volume ratio (f / Vt ratio), airway occlusion pressure at 0.1 second after the onset of inspiratory effort (P 0.1), the product of P 0.1 and f / Vt (P 0.1 x f / Vt), respiratory rate (RR), Quasi-static compliance of the respiratory system (Cqst, rs), PaO2 / FiO2 ratio and the new integrative weaning index (IWI = Cqst, rs x SaO2 / f/Vt ratio) were evaluated in all patients. Arterial blood gas was collected with FiO2 in 0.35. Sensitivity, specificity, positive predictive value, negative predictive value and the receiver operating characteristic (ROC) curves were calculated in order to evaluate the predictive performance of each index. The nonparametric method of Hanley and McNeil was used to compare the area under the ROC curves of each index.
RESULTS: Two hundred and eighteen patients were weaned, while thirty-two were not weaned. The IWI presented the larger area under the ROC curves (0.97), followed by the f / Vt ratio (0.90), Cqst, rs (0.89), f / Vt x P 0.1 (0.85), RR (0.80), P 0.1 (0.70) and finally by the PaO2 / FiO2 ratio (0.60). The area under the ROC curves of IWI was larger than those for f / Vt ratio ($p < 0.0001$) and also larger than those for the other indexes ($p < 0.0001$).
CONCLUSIONS: In our study, even compared with others essentials indexes of the literature, the IWI showed to be the best criteria to predicting the weaning outcome. With the obtained results, we believe that with the use of the IWI in other countries, we may prove more and more its accuracy.

0371 TOTAL PLASMA CORTISOL AND PROGNOSIS IN ICU PATIENTS WITH SIRS

C Loudet, M Perman, S Ryan, C Castarataro, E San Roman, A Gallesio
Adult Intensive Care Service, Hospital Italiano, Buenos Aires, Argentina

OBJECTIVES: To evaluate the level of total plasma cortisol (C) in adult critically ill patients (P) with SIRS and it relationship with etiological, physiopatological, severity and outcome parameters.
METHODS: Inclusion criteria: consecutive P with SIRS within 72 hours of it onset, without any clinical manifestation of shock or adrenal insufficiency and not receiving corticoid therapy. The P were grouped for analysis by the admission diagnosis (medical, surgical and neurological/neurosurgical); physiopathology of SIRS (sepsis, tissue injury and brain injury); illness severity (APACHE II, TISS28 and SOFA scores); age, length of stay and mortality in ICU. C was measured by RIA (DP Corp., USA). T test, chi2 and logistic regression uni and multivariate was done as required using the progam STATA 7.0; $p \leq 0.05$ was considered significant. Results were expressed in mean ± SD and percentage.
RESULTS: 80 P; clinical: 32%, surgical: 39%, neurological/neurosurgical: 29%; males: 63%; age: 56 ± 17 years; APACHE II: 17 ± 5; TISS28: 26 ± 7; SOFA 5.7 ± 3; mechanical ventilation 75%; mortality 31%; LOS in ICU 16 ± 12days.
The mean C level of all P was 29.9 ± 28.60 µg/dl (range 1.1-209 µg/dl). The C of survivors (n = 55) was 27.6 ± 28.6 µg/dl and non survivors (n = 25) 35.0 ± 28.4 µg/dl (p = 0.14)
The C of P grouped by other parameters were: APACHE II ≤ 15 (n = 53) = 27.5 ± 16.3 µg/dl and > 15 = 34.6 ± 44 µg/dl (p = 0.85); SOFA < 6 (n = 42) = 29.9 ± 32.7 µg/dl and ≥6 = 29.9 ± 22 µg/dl (p = 0.50); age < 65 (n = 51) = 30.4 ± 33.2 µg/dl and ≥ 65 = 28.9 ± 18.1 µg/dl (p = 0.59); septic (n = 33) = 37.0 ± 39.9 and non septic = 24.9 ± 15.3 µg/dl (p = 0.97). The C of P grouped by admission diagnosis, physiopathology of SIRS and infectious complications during ICU stay were not statistically different.
24 P (30%) had C <18 µg/dl and 43 (54%) < 25 µg/dl. Mortality was not statistically different at following cutoff values of C: 18, 23, 25, 28, 30 and 35 µg/dl. The P with C ≥ 40 µg/dl (n = 18) had an increased risk of mortality: 50% death rate vs. 26% (OR = 2.87, p = 0.05).
The univariate regression of C against mortality was not significant, neither the multiple regression with other severity and outcome parameters. The only parameters significantly associated with mortality were LOS, TISS28 and SOFA score
CONCLUSIONS: The minimum level of C reported as adequate for P with SIRS varies between 18, and 25 µg/dl; 30 and 54% of our patients had values lesser than that without hypotension or clinical signs of adrenal insufficiency. We could not obtain any significant relationship between C and severity/outcome parameters, except for mortality and C ≥40 µg/. The results are probably related to the daily variability of C values according to the physiological response to stress and/or to the measurement of total plasma cortisol levels (changing level of the C binding protein). It will be useful to measure plasma or saliva free cortisol, but this is expensive and/or difficult to do it routinely in ICU P

0372 IMPACT OF MECHANICAL VENTILATION IN ICU PATIENTS A COMPARATIVE STUDY ACCORDING TO AGE

JE San Roman, SE Giannasi, AO Gallesio, C Castararo
Hospital Italiano de Buenos Aires

Objetive: To compare ventilated patients evolution according to age (younger or older than 65 years old) and different etiology of respiratory failure.
Material and methods: Retrospective observational descriptive study to compare two populations of different age on Mechanical Ventilation and the impact of different etiology of respiratory failure in mortality.
All patients ventilated in a period of 24 month in an adult surgical/clinical ICU of a teaching hospital were enroled. The following variables were considered: age, sex, APACHEII, TISS28, length of stay in mechanical ventilation, length of stay in ICU, and mortality. The patients were gruped for analisys by the admission diagnosis: trauma, clinical, elective surgery or emergency surgery.The statical analisys was done with STATA 7.0 program with univariate and multivariate logistyc regression .The following variables were dichotomiced as: Neurologic, COPD , ARDS, Sepsis and age ≥ or < 65 years old. The data were colected from SATI-Q program.
Results: 1288 were colected (832 < 65 years old)

APACHE II TISS28 LOS death male
≥65 21(SD 7,4) 23.5 9.7(SD 11) 183(40%.) 60%
< 65 17 (SD 8) 23.5 13.9 (SD:28) 191 (22%) 55%
p 0.00001 0.89 0.0001 0.0001 0.1237

COPD NEURO ARDS SEPSIS
≥65 9.7% 22% 8.1 % 18.4
< 65 4.0% 20% 11.7 % 9.25
p 0.001 0.408 0.04 0.0001

In a table above the significant variable to predict mortality are: APACHE II. LOS, COPD;ARDS; and Sepsis. Patients older than 65 years with ARDS have grater risk of death than younger. (OR 4.22: 0,04)
Conclusion.: In our population poore outcomes in older than 65y. with mechanical ventilation are associated with: Apache II, COPD and ARDS

0373 IN A TOCOGYNECOLOGICAL UCI: WHICH SCORE PHYSIOLOGICAL TO USE?

FM Soares, CE Roma, JP Souza, AO Neto, CR Ferreira, SP Gonçalves
Caism (Centro de Assistência Integral a Saúde da Mulher)/UNICAMP Campinas/São Paulo -Brasil

Background - Currently, we more frequently find the existence of specific UCIs (unit care intensive), units that take care of to a population specifies. Although many similarities in the functioning and behaviors in diverse the UCIs especifics, occur frequent processes and exclusive procedures in each type of unit. Between the diverse processes that are carried through in the UCI find the use of scores physiological, that although used in the units specifies, they are constructed based in general UCIs. Objective – To establish if exists a bigger effectiveness between three scores physiological, Apache II (Acute physiology and Chronic Health evaluation, version II), SAPS II (Simplified Acute Physiology Score, version II) and MPM (Mortality Probality Models) and one score categorical Tiss 28 (Therapeutic Intervetion Score System, version 28), internationally used, and to apply them in the specific UCI. Methods - Carried through a study with 450 patients submitted to the internment in a UCI specifics, that they had been divided in groups for reason of the internment, and soon after applied the four scores in the each group. The evaluation of the effectiveness was carried of the scores, through the comparison of curves ROC (receiver operating characateristic) of each score, in of each group. Results - The comparison of curves ROC, showed that when applied the three scores physiological a population specifics, as pregnancy women with hypertension or cardiopathies, them are not efficient, however when applied to the groups of patients taken care of in the UCI it specifics, having for internment reason pathologies or complications that would justify its internment in any UCI, them they had shown effectiveness, and a little significant difference between them, being that SAPS II, showed to greater effectiveness, followed for APACHE II and later the MPM. The only score categorical tested showed to effectiveness between all the groups, however, following the trend of bigger effectiveness of the others scores, it was less significant in the group with pregnancy women. Conclusion – Despite scores to be known and validated internationally, when applied the populations very you specific, it presents little effectiveness, generating the necessity of the creation of score specific for certain populations.

0374 NOREPINEPHRINE USE AT THE TIME OF EXTUBATION WAS NOT ASSOCIATED WITH WEANING FAILURE FROM MECHANICAL VENTILATION IN SEPTIC PATIENTS

TF Tonietto[1], C Teixeira[1], RV Cremonese[1], AS Machado[1], JH Barth[1], RP Oliveira[1], SFM Brodt[1], ES Oliveira[1], FAC Alves[1], P Balzano[1], JA Hoher[1], NB Silva[1]
1 Intensive Care Unit of Hospital Moinhos de Vento – Porto Alegre, Rio Grande do Sul, Brazil; 2 Central Intensive Care Unit of Complexo Hospitalar Santa Casa – Porto Alegre, Rio Grande do Sul

Background: weaning from mechanical ventilation (MV) is a moment of great oxygen consumption by respiratory muscles and we could expect that vasoactive drugs would lead to blood flow redistribution for vital organs instead of these muscles. Stable cardiovascular system is necessary to begin discontinuation of ventilatory support. Current guidelines recommend no or minimal vasopressor – dobutamine or dopamine – to start the weaning process, but do not refer to norepinephrine (NE).
Objectives: evaluate the effect of low to moderate doses of NE on weaning from MV.
Methods: prospective observational study, performed from January 2004 to September 2004 on all septic patients considered able to wean while still on NE infusion. Clinical, ventilatory and hemodynamic variables were recorded: age, sex, APACHE II score, baseline disease, etiology of respiratory insufficiency, Glasgow coma scale, muscle strength, frequency to tidal volume index, CROP index, maximal inspiratory pressure, days in Intensive Care Unit, MV days, drugs used, blood arterial gases, vital signs, T-tube size and outcomes (reintubation and death). Data are expressed as mean + SD or percentage.
Results: Sixty three patients with septic shock were studied. Male: 61.9%, age: 59.6 ± 17.6, APACHE II: 22.3 ± 6.5, APACHE II: 11.7 ± 5.3 at the time of extubation, MV days: 9.4 ± 5.9, maximal NE dose: 0.52 ± 0.29µg/kg/min, spontaneous breathing test (SBT) NE dose: 0.12 ± 0.10µg/kg/min. The reintubation rate was 19% and mortality was 15.9%. The clinical, ventilatory and hemodynamic variables did not relate to weaning outcome.The maximal and SBT NE dose was not different in the patients who failed or were successfully weaned from MV. The maximal and SBT NE dose was not different in survival and non-survival patients.
Results are expressed in the table:

	Outcomes	Maximal NE dose*	p	SBT NE dose*	p
Weaning	Failure	0.51 + 0.27	0.28	0.11 + 0.1	0.64
	Success	0.59 + 0.39		0.14 + 0.14	
Survival	Dead	0.44 + 0.19	0.92	0.13 + 0.06	0.39
	Alive	0.54 + 0.31		0.11 + 0.1	

* expressed as µg/kg/min;
Conclusion: patients with septic shock can be extubated while still using low to moderate dose NE, without increased risk of weaning failure.

0375 HOSPITAL DE CLÍNICAS CARACAS ATTENTION'S QUALITY EVALUATION IN THE INTENSIVE CARE UNIT

S Pereira, M Delgado, G D'empaire
Unidad de Cuidados Intensivos. Hospital de Clinicas Caracas. Caracas. Venezuela

Background: To evaluate the attention's quality from user's point of view must be a very important element in the critic patient's care. Not much has been evaluated about the patient and family's point of view of the attention they receive. Is for this reason that a group of suggestions can be taken from the patient, related to its attention to obtain information to benefit the institution.
Objectives: To get to know the patient and family's point of view about the institution, in order to identify the related factors with each other and their needs, regarding the attention received.
Method: To evaluate the different aspects of the I.C.U's quality, according to the patient and family's point of view, an exploratory study has been made. A survey was elaborated and approved. This survey had been applied to a group of 60 patients and 75 families who had been in the I.C.U, during the time of the survey.
Results: Quality service according to patients: 76% (48) received clear information, 67% (40) received always correct information about studies and treatments, 79% (51) considered that the visit covered their emotional needs.
Regarding the medical staff, 92% (56) received full service, 32% (28) reacted with confidence after the visit, 26% (22) felt secure.
Regarding the nursing staff, 73% (45) of patients received information about their procedures, 17% (10) didn't always get that information, 89% (56) considered the staff available, and 96% (60) told to receive a respectful treat.
Regarding the unit's facilities, 50% (31) suggested the noise didn't bother them, but 31% (20) said it did, 58% (37) said the unit's lighting system doesn't bother, but 25% (16) said it does, 78% (48) expresses their intimacy was respected.
The survey reveals about family members the following in quality's service: 95% (17) say the services were always accurate, same with the patient's treatment, 82% (62) said the patient's pain was always treated on-time.
Regarding the medical staff, family members said that 86% (64) received clear information, 93% (70) were always treated with respect, 88% (66) perceived the medical staff was always available.
Regarding the nursing staff, 81% (61) received clear information and a respectful treatment, 88% (66) said they were always available.
Regarding the psychology staff, 79% (60) expressed they felt their support, 75% (56) perceived a correct communication with doctors helped by psychologist 86% (65) received a respectful treatment.
Regarding the clinic's facilities, 84% (63) was satisfied with the visiting hours, 81% (61) were satisfied with the duration of those visiting hours. The waiting room resulted comfortable for 52% (39), but 48% (36) thinks it is not.
Conclusions: Service and attention's quality according to families and patients reflects 80% satisfaction in information and how they treat people, but there are some difficulties to 16% in some parts of the clinic's facilities and noises.
This suggests the need to establish ways to improve these aspects and continue giving an addecuate service.

0376 SERUM FROM PATIENTS WITH SEPTIC SHOCK MODULATES THE EXPRESSION OF ISOFORMS ALPHA AND BETA OF THE HUMAN GLUCOCORTICOID RECEPTOR

J Guerrero, K Salas, IA Goecke
Instituto de Ciencias Biomedicas, Facultad de Medicina, Univrsidad de Chile, Santiago. Chile

Background: Glucocorticoids (G) regulate a variety of biological processes. These actions are mediated mainly through the glucocorticoid receptor (hGR), a cytoplasmatic protein which, upon hormone binding, regulates target gene expression. There are several isoforms of the hGR, generated by processes such as mutations, polymorphisms, alternative splicing or alternative translation initiation of single gene. Alternative splicing generates two highly homologous isoforms: hGRα and hGRβ, the former being the classical receptor for G actions. There is evidence that proinflammatory cytokines, in vitro, increase the cellular concentration of hGRβ which exerts a dominant- negative effect over hGRα. In chronic inflammatory diseases, a higher concentration of hGRβ in immune cells has been associated with a decreased response to G treatment. As far as we know, there is no information about the expression of hGR isoforms in severe acute inflammatory diseases such as septic shock.
Objectives: To evaluate whether the serum from patients with septic shock modifies the expression of the hGR isoforms α and β in a lymphoid cell line.
Methods: CEM cells were cultured for 48 hours in RPMI supplemented with human serum either from healthy volunteers or patients with septic shock at 30% or 50% final concentration. The expression of the hGR isoforms α and β was determined by immunocytochemistry. Image analysis was performed using NIH Image 1.56 software for PC. Wilcoxon test was used for statistical analysis of data. A $p< 0.05$ was considered significant.
Results: CEM cells incubated with septic serum at both 30% and 50% final concentration presented a significantly increased expression of hGRβ (55% and 34% increase respectively, $p<0.0001$ for both) in comparison with normal serum. The expression of hGRα significantly increased at 50% septic serum final concentration (7% increase, $p<0.001$) but not at 30% septic serum final concentration (3% increase, NS).
Conclusions: Serum from septic shock patients, on lymphoid cells in culture, induces a marked increase in hGRβ expression, with a weaker effect on hGRα. We postulate that since hGRβ is a negative-dominant inhibitor of hGRα, a higher expression of this isoform in septic shock, is involved in the decrease glucocorticoid cell sensitivity reported in this condition.
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0377 SISE, A TOOL TO SUPPORT THE NURSING SYSTEMATIZATION

FM Soares, CE Roma, CR Ferreira, SP Gonçalves
Caism (Centro de Assistência Integral a Saúde da Mulher)/UNICAMP Campinas/São Paulo –Brasil

Background - The nursing systematization is increasingly becoming part of the daily nurses routine, either in the direct assistance to the patient or within the academic life, however, it is a process that stops being dominated, needs daily intimacy and availability for study of its scientific bases. Objective - Based in these needs, our objective was to create a software that facilitated the process of learning and the use of the nursing systematization. Methods – The use of a programming language, used internationally and national and international books as data base; we created a software that provides the user with a complete process of systematization of the nursing attendance. Results - The software guide can be used in different ways, providing the nurses with different levels of experience, from beginners to experts. The program supplies each serves as apprentice of the nursing systematization individually or generates all process, depending on the needs of the user. Conclusion - software SISE, works as a useful tool, to accomplish the daily nursing systematization, and it has access in different forms, the regular use of the software allows the user to increase its knowledge on the nursing systematization, and assists on the dissemination of this knowledge.

0378 CRITICAL CARE NURSES EXPERIENCE OF CARING FOR DYING PATIENTS: EXISTENTIAL DISTRESS AND EDUCATION NEEDS

SF Prestoy
Kutztown University, Kutztown, PA USA

Background
The critical care hospital environment is emotionally charged. The patient's sudden illness or death dramatically impacts the family, resulting in a range of grief reactions. The family's ability to cope and adapt to sudden loss has been a focus of numerous studies. Nurses work closely with the patient and family and are the primary care givers. The impact of the patient's death and the family's grief on the nurse however, has not been a major research focus.
Objective
The major objective of this study was to explore the critical care nurses' lived experience of caring for dying patients.
Methods
A phenomenological /case study method was used to analyze 40 case studies submitted by 14 registered nurses who worked in critical care units including ICU, NICU, S ICU, CCU, and the ER. An open-ended research question asked study participants to describe a professional experience with a dying patient and family, including the nurse's feelings, reaction and adaptation. Case studies were shared in writing with the researcher, and many were also discussed individually or in a group setting. This research sample was a subset of a larger study that examined nurses' lived experience of caring for dying patients.
Results
Major findings could be divided into two main thematic areas. The first discovered that nurses experienced Existential Distress, questioning why certain particularly tragic or untimely deaths had occurred. Also included in this thematic category, many of the reported death cases emotionally impacted the nurses, to the point where deaths were recalled in vivid detail, and were accompanied by nurses' feelings years later. The second major thematic finding involved the need for education and training, particularly in communicating with the dying, their families, and physicians.
Conclusions
The findings of this study suggest that hospital and nursing administration may need to address the emotional needs and occupational stress caused by caring for dying patients. Also, hospital educational departments may need to assess educational needs of nurses who provide care to the dying, and provide specific programming related to communication.

0379 NON-INVASIVE VENTILATION: A TWO-YEAR EXPERIENCE IN ICU

A Chena[2], J Marengo[1], G Zakalik[1], R Fernandez[1]
1 Hospital Lagomaggiore; 2 Terapia Intensiva

Objective: To show 2-year experience in the management of patients with non-invasive ventilation (NIV). Materials and methods: The study included all the patients admitted in ICU from January 2003 to December 2004 who met the criteria for applying NIV as treatment in Acute Respiratory Failure. The information recorded was: age, sex, admission diagnosis, length of stay, APACHE II, evolution (survivor or dead), reason for NIV, NIV complications, failure requiring intubation, length of NIV, gasometry on admission and after two hours of NIV. Statistical significance: $p \leq 0,05$ Results: From January 2003 to December 2004, 59 patients received NIV, 31 (52,5%) females and 28 (47,5%) males. The age median was 57 (43 – 66). According to cause for admission, they were divided into exacerbation COPD, 16 patients (27,1%), and non- COPD, 43 patients (62,7%). The latter group included CAP (19), CPE (11), ARDS (9) and other (4). The global APACHE II was 14,83 ± 6,16 points. The median length of stay was 6 (3 – 11) days and overall mortality was 37,3 % (22). The median length of NIV was 2 (1 – 4) days and the failure rate was 45,8 %. The most frequent causes of failure were: hemodynamic instability 44,7%, intolerance 36% and exhaustion 12%.%. No intolerance with HELMET was observed. The APACHE II of patients with successful NIV was 14,5 ± 6,4 vs. 17,2 ± 5,7 of patients with failed NIV, ($p<0,05$). Analysing the patients with Exacerbation COPD(16) had a mean APACHE II of 17,5 ± 4,9. Group overall mortality was 25% (4) and the percentage of failure was 43,7%. The total number of dead patients corresponded to those in whom the method failed (57,1%), the length of stay in ICU was 8,8 ± 6, and the length of NIV was 2,05 ± 1,8 days. The successful COPD patients improved their PAFI within two hours (p=0,05). Analysing the non-COPD group, the CAP patients had an APACHE II of 13,7 ± 7,1, a length of stay in ICU of 9,7 ± 7,7 days, and a length of NIV of 3,3 ± 2,1. The CPE patients had an APACHE II of 14,8 ± 5,6, a length of stay in ICU of 9,2 ± 7,8 and a length of NIV of 2,2 ± 1,3. The ARDS patients had an APACHE II of 16,6 ± 5,8, a length of stay in ICU of 3,8 ± 2,5 and a length of NIV of VNI 3,1 ± 2,3. The overall failure rate for the CAP, CPE and ARDS patients was 35,8%, with 36%, 27,3% y 33% respectively. In the non-COPD group with successful NIV, an improvement in PAFI and pH was observed within two hours with a statistical significance of p= 0,01 and p= 0,01 respectively. Conclusions: In our population, both gravity by APACHE II and PAFI within 2 hours were good predictors of success, whereas method failure was associated with high mortality. The most frequent cause of failure was hemodynamic instability. No intolerance was observed with the use of HELMET

0380 FAMILIES PSYCHOLOGICAL SUPPORT IN INTENSIVE CARE UNIT. EIGHT YEARS EXPERIENCE

C Mujica, M Parada, G D'empaire
Hospital Clinicas Caracas. Caracas. Venezuela

Background: Hospitalizacion of a patient to an Intensive Care Units (ICU), usually produces many emotional responses in the patient's relatives that cannot be handled satisfactorily. These reactions should be trated by a specialized help.Research by Molina (1983)proposed the psychologist's roles into ICU, Alarcòn and Tenorio (1994) revealed ahigh level of misinformation among relatives of ICU patients; whereas Dos Santos and Guardia (1996) proposed an Information Center for ICU family members. With this concern, the Orientation and Family Support Unit (OFSU), was created in 1996, with two psychologists who have an assistance and emotional support role based on Ethical Principles , to help relatives of patients admitted to the ICU.
Objetive: To evaluate the applications of Psychotherapeutical Processes for relatives of ICU patients
Method: A descriptive methodology was used, Expost-facto qualitative type methodology, based on the Intervention-Action-Evaluation after the data collection carried out in abductive form.The following Psychotherapeutical Processes were developed: Intervention in Crisis, Emotional Support, Support to the relatives of the patient next to pass away, Intervention in Crisis to the patient, Reformulation of the life style, Observance of the Ethical Principles, Communicational Connection and Sensorial Overload.Each of these Processes include seven-eight different psychological aids (PA)
Results: From 1996 through 2004 OPSU has attended 4474 family groups. The Process most frequently used was Intervention in Crisis with a total of 12091 PA, the most frequent being Inmediate Contac with the family to the moment of the income of the patient (37%), followed by the Explanation of the procedures to be carried out in the UCI (30%) and Keeping company with relatives according to the psychological stages they go through during the critical situation. (27%). Second place goes to Emotional Support with a total of a 4756 PA, the most frequent being Keeping company and visit modeling (67%). In third place the Intervention in Crisis applied to conscious patient with a total of 2391 PA, the most frequent being the Inmediate Contact (49%) followed by Emotional Support offered during their stay at the ICU (28%)
Conclusion: The OPSU offers an important and sustained psychologcial aid to relatives of ICU patients which permit an important support during the critical situation that they live during their relative hospitalization.

0381 SPIC, THE BIRTH OF ONE SCORE FOR INTENSIVE OBSTETRICS PATIENTS

FM Soares, CE Roma, JP Souza, AO Neto, CF Ferreira, SP Gonçalves
Caism (Centro de Assistência Integral a Saúde da Mulher)/UNICAMP Campinas/São Paulo -Brasil

Background - With the specific UCI (Unit Care Intensive) sprouting, have occurred the necessity of the development of processes and exclusive procedures to be used in populations that possess characteristics specifies. Many of these processes are born of adptations of similar systems created for application in general populations. Between these processes we can cite the scores physiological, that possess great variety of functions, since to stratify the gravity of patients taken care of, to serve as base for scientifics comparisons between different services, and mainly to serve as parameter to evaluate the effectiveness of the attendance carried through in the units. Objective - To initiate the development of one score physiological for women who possess necessity of intensive cares and have the obstetric profile (pregnancy and after parturition). To evaluate the use of physiological parameters and its percentiles 10 and 90 (p10 and p90) as indicating ones for the construction of score, SPIC. Methods - Through a retrospective study of 124 interned obstetrics women in a UCI. The measured outcome was the complex handling, defined as superior permanence the six days or occurrence of death. They had been used the physiological variables, with the worse values presented in first the 24 hours of internment in the UCI. The value of percentile 10 and 90 for the variable was gotten, and had punctuation of the women for the reached of these values. Carried through it analyzes of score with curve ROC (receiver operating characteristic) and logistic regression. Results - 20 women with complex handling had been identified. Using the described methodology above we create an equation that determines the probability of complex handling. Conclusion - Physiological answers in first the 24 hours in the UCI of the population studied, serve for the construction of score applicable to the women with obstetric profile in the UCI.

0382 A COMPARATIVE STUDY OF INSPIRATORY MUSCLE STRENGTH, NEUROMUSCULAR DRIVE TO BREATH AND ITS RATIO IN WEANING OUTCOME

SN Nemer[1], CSV Barbas[2], J Caldeira[1], L Azeredo[1], T Clipes[1], R Gago[1], M Andrade[1], PR Filho[1], R Avila[1], C Coimbra[1], PCP Souza[1]
1 Hospital de Clínicas de Niterói, Rio de Janeiro - Brazil; 2 Universidade de São Paulo, São Paulo - Brazil

BACKGROUND / OBJECTIVES: The indexes used to evaluate the weaning outcome nowadays are more integrative, once the weaning failures generally have multifactorial origin. Inspiratory muscle strength and neuromuscular drive to breath, evaluated by maximal inspiratory pressure (MIP) and airway occlusion pressure (P 0.1) respectively, are important factors in weaning. The aim of this study is to evaluate the MIP, the P 0.1 and its ratio (P 0.1 / MIP) in weaning outcome.
METHODS: Seventy consecutive patients of several etiologies in weaning process that remained up to 24 hours in mechanical ventilation were evaluated (all with PaO2 > 60 mm Hg with FiO2 < 0.4 and PEEP < 8 cm H2O). All patients were submitted to a two-hour trials of spontaneous breathing. Those who sustained two-hour of spontaneous breathing without return to mechanical ventilation in the following 24 hours were considered weaning, while those who could not sustain two-hour of spontaneous breathing or returned to mechanical ventilation in the following 24 hours were considered not weaning. MIP < - 25 cm H2O, P 0.1 < 4.2 H2O and P 0.1/ MIP < 0.14 cm H2O were used to predict the success in weaning outcome. The predictive performance of each index was evaluated through the sensibility, specificity, positive predictive value, negative predictive value and diagnostic accuracy. The results were also evaluated by the area under the "receiver-operating-characteristics" (ROC) curves. The nonparametric method of Hanley and McNeil was used to compare the area under the ROC curves of each index.
RESULTS: MIP presented the area under the ROC curves smaller than those for P 0.1 (0.52 + 0.08 x 0.76 ± 0.06 respectively; p = 0.004) and also smaller than those for P 0.1 / MIP (0.52 ± 0.08 x 0.78 ± 0.06 respectively; p = 0.0006). P 0.1 / MIP presented excellent predictive performance in weaned patients, with sensibility of 98.08, but with the area under the ROC curves only slightly larger than those for P 0.1 (0.78 ± 0.06 x 0.76 ± 0.06 respectively; p = 0.69).
CONCLUSION: In our study, Pi max was the criterion with worse predictive performance. P 0.1 showed to be a very important criterion to evaluate the respiratory center output, although with limitations in evaluating weaning failure. Patients with P 0.1 / Pi max ratio > 0.14 are not always associated with weaning failure, but values < 0.14 were highly associated with successful in weaning outcome.

0383 SYSTEMIC INFLAMMATORY RESPONSE SYNDROME (SIRS), SEPSIS, SEVERE SEPSIS AND SEPTIC SHOCK IN CRITICAL ILL PATIENTS OF LIMA – PERU

NA Luque[1], G Ascencio[2], I Coronado[2]
1 Regional Hospital of Ica; 2 Guillermo Almenara Irigoyen National Hospital

Objective:
To determine the punctual prevalence, frequency and clinical characteristics of SIRS, sepsis, severe sepsis and septic shock in critical ill patients of the different units from intensive cares of the city of Lima – Peru. October 8th, 2003.
Methods:
The sampling was non probabilistic, including 13 ICU's of the Social Security hospitals (EsSalud), Ministry of Health, Armed Forces and private clinics. We included 60 patients, over 18 years, that fulfilled the criteria of inclusion according to the American College of Chest Physicians/Society of Critical Care Medicine for SIRS, sepsis, severe sepsis and septic shock. This is a multicenter study of prevalence, descriptive, transversal.
To evaluate factors associated to the main variables of the study the statistical were used: i) for the categorical exact Fisher test, ii) for the continuous variables Analysis of the Variance (ANOVA) All the test were used a significance level alfa=0.05.
Results:
There was a predominance of masculine sex 60%, the patients entered to the (Intensive Care Unit)ICU after 5,72 days ± 9,30 of their admission to the hospital. 36,1% were admitted from Trauma Shock and 28.3% after surgery. The antecedents of greater importance were diabetes mellitus II 25.2% and hypertension 42.2%. Respiratory failure 58.3% was the principal reason of admission.
We found association between age, older than 65 years, and septic shock (p=0.025). Also we found association between severe sepsis and use of ranitidine (p=0.048), hematology derivatives(p=0.015), use of nasogastric tube(p=0.021), cardiovascular failure(p=0.000), renal failure(p=0.000), respiratory failure (p<0.000).
Staphilicoccus aureus 8.3%, and E. coli 6.7% were the most frequent germs involved. Also were reported Candid spp 5%, Pseudomona aureginosa 5%, In addition we reported 41.7% of negative cultures. Vancomycin and Imipenem were the antibiotics of election in 26.7% and 21.7% respectively. 47% of the patients were under mechanical ventilation of less than 21 days, and 68.3% had enteral nutrition. The use of muscular blocking agents was of 3.3%. In relation to blood derivatives red globule transfusion was given in 30% of the patients, specially those from EsSalud.
Conclusions:
We reported a frequency of septic shock of 6.7%, severe sepsis 31.7%, sepsis 33.3% and 28.3% of SIRS. The punctual prevalence for septic shock was 4,30/100 patients, severe sepsis 20,42/100 patient and sepsis 21,50/100 patient admitted.

0384 MORTALITY AND LIFE CONDITION BEFORE AND AFTER HOSPITALIZATION IN INTENSIVE CARE UNIT IN PATIENTS OLDER THAN 75 YEARS

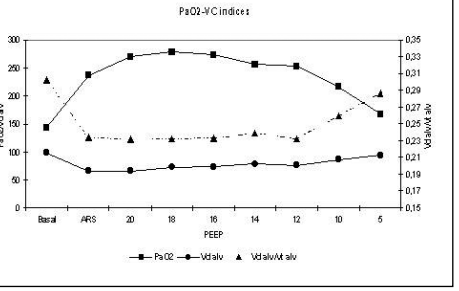
JC Pal, S Salva, D Urbina, G D'Empaire, MA D'Empaire
Unidad de Cuidados Intensivos. Hospital de Clínicas Caracas. Caracas, Venezuela

Background: The morbidity and mortality of patients older than 75 years hospitalized into ICU are greater than the other patients. There are a few trials that have established the life condition and mortality as well as the physical and mental impairment after discharge from ICU.
Objectives: Evaluation of the mortality of patients older than 75years during ICU stays and after three month from discharge. Evaluation of the lifestyle, according to mobility, autonomy, anxiety, pain and level of daily activity in patients older than 75 years before they were treated in the ICU and after three month from discharge.
Methods: We studied 100 patients aged more than 75 years hospitalized in ICU at "Hospital de Clínicas Caracas". We registered: name, age, gender, religion, proceeding place, occupation, SAPS II, diagnostics, personal history, long of stay in ICU and hospitalization and mortality. We develop a scale to measure five variables: mobility, autonomy, anxiety, pain and daily activity level. Evaluation was made in two times, at admission at the ICU and three months after discharge from ICU. A phone call was made by psychologist to the surviving parent or relatives to get the information.
Results: From 100 patients 52% were females and 48% were males, SAPS II 20 to 59 (average ± SD). The hospitalization causes were 41% post surgery, 25% respiratory failure and 19% acute coronary accident, 11% stroke. The mortality was 15% in ICU, 11% during next three month after discharge 3% in hospitalization and 8% at home. When the variables were evaluated: 1–Mobility: 83.5% kept the same status in relation to pre hospitalization, 12.3% were worst and 4.1% improved their condition (Pearson Chi-square 50.92 $p<0.001$); 2–Autonomy: 86.3% kept the same status in relation to pre hospitalization, 12.3% were worst and 1.3% improved their condition (Pearson Chi-square 53.86 $p<0.001$); 3–Daily activities: 84.9% kept the same status in relation to pre hospitalization, 13.6% were worst and 1.3% improved their condition (Pearson Chi-square 46.78 $p<0.001$); 4–Pain and Discomfort: 80.8% kept the same status in relation to pre hospitalization, 12.3% were worst and 6.8% improved their condition (Pearson Chi-square 66.03 $p<0.001$); 5–Anxiety and Depression: 78% kept the same status in relation to pre hospitalization, 12.3% were worst and 9.5% improved their condition(Pearson Chi-square 67.29 $p<0.001$).
Conclusions: In this group of patients we found a high mortality after discharge. A significant number of patients present physical and mental impairment three month after discharge compared with their life condition before hospitalization.

0385 ROLE OF DEAD SPACE AS MONITOR OF PEEP TITRATION DURING A RECRUITMENT MANEUVER IN PATIENTS WITH ARDS

E Turchetto[1], G Tusman[1], N Fuentes[1], J Lobo[1], F Suárez-Sipmann[2], S Böhm[3]
1 Hospital Privado de Comunidad, Mar del Plata, Argentine; 2 Fundación Jiménez Díaz, Madrid, Spain; 3 Hospital das Clinicas, USP, Sao Paulo, Brazil

Background: Open the lungs and keep it open with a recruitment maneuver (RM) was a strategy proposed to antagonize the refractory hypoxemia observed in ARDS patients. The open lung PEEP, i.e. the level of PEEP after a RM that keeps the lungs open, is difficult to assess at the bedside.
VC was useful to asses ventilatory heterogeneity in patients with acute lung injury. The effect of a lung recruitment maneuver on the Volumetric Capnography (VC; i.e. the curve formed by the expired CO2 and tidal volume) has been described in anesthetized patients. Dead space and several VC derivate indices, variables that are closely related to efficiency of gas mixing and exchange of the lungs, changed dynamically as pulmonary physiology was affected by a RM.
Objectives: The aim of the study was to analyze the role of dead space as monitor of the open lung PEEP after a RM in patients with ARDS.
Protocol: We studied five patients with early ARDS (< 72 hs of mechanical ventilation) defined according to the American-European Consensus Conference. Patients were ventilated in VCV with VT of 7 ml/kg, I:E of 1:1.5, RR 15 bpm, PEEP 5 cmH2O and FIO2 of 1 during 30 min. Afterward, a RM was performed in VCV with the same setting. During incremental limb, PEEP was sequentially increased in step of 5 cmH2O every 2 min, from 5 to 20 cmH2O. Then, 2 minutes of maximal recruitment (i.e PIP of 60 together PEEP of 25 cmH2O) was allowed. During decremental limb, PEEP was decreased 2 cmH2O every 5 min until 5 cmH2O.
Alveolar dead space to tidal volume ratio (VDalv/VTalv) was defined as:
PaCO2 -PACO2/PaCO2; where PACO2 was estimated by the mean expired alveolar CO2 concentration. VDalv was calculated as PaCO2 - PACO2/PaCO2 * VTalv.
PaO2 was used as marker of the response to RM. Hemodynamic, dead space and respiratory mechanics variables were recorded on-line. PaO2 was measured at baseline, during maximal recruitment and in each level of PEEP in the decremental limb.
Main Results: Five patients (age 72.8 ± 5.9, APACHE II 28.4 ±11.4 and LIS 2.7 ± 0.2) were studied. Three patients had pulmonary and 2 extra-pulmonary ARDS. Baseline PaO2 was 77 ± 52 mmHg, after RM the increase until 241 ±111 mmHg and then decrease to 151 ± 37 mmHg at 5 cmH2O of PEEP. The main results are included in figure 1. VDalv (r = 0.88) and VDalv/VTalv (r = 0.97) were highly correlated with PaO2 during the whole protocol.
Conclusion: VDalv and VDalv/VTalv showed good correlation with PaO2 in our patients. These variables could be useful for monitoring the open lung PEEP after a RM.
Reference: 1)Lachmann B. Open up the lung and keep the lung open. Intensive Care Med 1992;118: 319-321. 2)LI Blanch et al.Volumetric capnography in patients with acute lung injury: effect of positive end-expiratory pressure.Eur Respir Journal 1999;13:1048-54. 3)Tusman G et al. Alveolar recruitment improves ventilatory efficiency of the lungs during anesthesia. Can J Anesth 2004;51: 723-27



0386 THE USE OF IV ADDITIVE DISPENSING PIN FOR ASPIRATION OR INJECTION - AN INFECTION RISK?

J Henriksen, E Lingaas, M Svendberg
Rikshospitalet Norway

Background:
Some sterile medication comes in multidose containers. But is it possible that repeatedly aspirations of these sterile containers may lead to a bigger risk of contamination. To reduce the risk of contamination, we often use "mini-spike plus", an IV additive dispensing pin for aspiration or injection. We wanted to find out if the sterile medicine containers get contaminated with the use of a "mini-spike Plus".
Material and methods:
"Mini-spike Plus" was used on multidose containers with 50 and 100 ml of normal saline 0,9% (NS). Each container was used by one patient only. It was used for multiple aspirations of NS, drawn out with a sterile syringe as needed, in a period of no longer than 24 hours. Each withdrawal was registered and counted.
After 24 hours a sample was taken from each "mini-spike Plus". These samples were cultivated on a medium consisting of blood or chocolate.
The containers were added a growth-promoting bouillon, incubated at room temperature for 5 days and after this another 5 days at 37 C. All the procedures where done on a sterile bench, with sterile coat and gloves. The IV additive dispensing pin was kept on the container during the examination.
Results:
110 containers were examined. (42 with 50 ml and 68 with 100 ml). We found growth in 2 of the multidose containers (1,8%). From the first one of these we also found growth of the same bacteria (staphylococcus aurus) around the IV additive dispensing pin. In the second we found a mix of Staphylococcus hominis and Micrococcus luteus in the container, but no growth in the IV pin.
Conclusion:
What we found indicates that there is a risk for contamination using IV additive dispensing pin. We tried to minimize the chance for contamination at the laboratory by using sterile procedures. Therefore we assume that our results show real contamination and we have gone through all our routines by using IV additive dispensing pins and changed some of our usage.
In our search we added a growth-promoting bouillon into the NS containers, for optimal growth of the microorganism. In normal saline 0,9% the growth conditions are poor and the chances that the microorganism can multiply are low.
Contamination probably happens because: the IV additive dispensing pin construction allows finger touch. The tip of the siring may be contaminated before aspiration from the multidose container. It is probably a bigger risk when the same siring is used more than once. The air that is let into the container can be contaminated. The IV additive dispensing pin can be displaced, in or out, of the container's rubber-cork during usage.

0387 A COMPARISON OF PRESSURE CONTROL INVERSE RATIO VENTILATION AND PRESSURE CONTROL VENTILATION IN PATIENTS WITH ARDS AND LUNG INJURY SCORE > 3.25

SN Nemer, I Seródio, E Farias, C Cadilhe, C Geraldo, J Dias, L Caldeiras, J Brust, C Savedra, L Silva, M Polycarpo, J Goulart, PCP Souza
Hospital de Clínicas de Niterói, Rio de Janeiro - Brazil

BACKGROUND / OBJECTIVES: The acute respiratory distress syndrome (ARDS) still present high mortality, besides the advance in last years with the protective strategy. The aim of this study is to compare the effectiveness of pressure control inverse ratio ventilation (PC-IRV) as opposed to pressure control with conventional ratio ventilation (PCV) in patients with ARDS and Lung Injury Score (LIS) > 3.25.
METHODS: Thirty eight patients with ARDS, according to the following criteria: acute onset, bilateral chest radiographic infiltrates, pulmonary-capillary wedge pressure < 18 mm Hg and PaO2 / FiO2 ratio < 200. Patients were randomized in two similar groups, one with 20 patients, that received PC-IRV and other group, with 18 patients, that received PCV. All patients were initially sedated, paralyzed and submitted to recruitment maneuvers with continuous positive airway pressure of 35 to 40 cm H2O for 40 seconds. Positive end expiratory pressure (PEEP) was preset according the best compliance and oxygenation. Days in mechanical ventilation, in control mechanical ventilation and to weaning, LIS and mortality were compared between the two groups through the Mann-Whitney test. Decrease in LIS at day seven after the randomization in the same group was evaluated through the Wilcoxon test.
RESULTS: Mortality was not statistically different, although was lower in PC-IRV group (40 % x 44 % - P = 0.78). LIS decreased more at day seven in PC-IRV group (2.15 ± 0.29 x 3.13 ± 0.49 - P = 0.0001). Days in mechanical ventilation (17.45 ± 10.41 x 28.33 ± 14.26 – P = 0.015), in control mechanical ventilation (13.7 ± 6.85 x 24.33 ± 13.93 – P = 0.004) and to weaning (4.22 ± 0.91 x 9.67 ± 1.89 - P = 0.003) were significantly lower in PC-IRV group.
CONCLUSION: Although the mortality didn't differ statistically, PC-IRV was effective in decreasing the LIS and the days in mechanical ventilation as comparison with PCV, may be used as alternative ventilatory strategy in ARDS.

0388 INVESTIGATION OF CHILDREN'S MAIN NURSING PROBLEMS ADMITTED TO THE PEDIATRIC INTENSIVE CARE UNIT: CASE REPORT

G Tayar, RP Santos, DP Dal'Ge
Instituto Israelita de Ensino e Pesquisa Albert Einstein. Albert Einstein Hospital, São Paulo / São Paulo, Brasil

Background: In pediatric intensive care units (PICU), the nurse performes the assistance for children with different kinds of pathology, however in order to this assistance be holistic, individualized, and humanized since the admission in the PICU; the nurse needs to perform a precise investigation of current and potential nursing problems developed by the child. They should be in the nursing prescription, verified in the assistance, with the purpose of avoiding and minimizing traumas, and physical and psychic sequelae.
The investigation of the child's problems takes part in the systematization of nursing assistance, being data for the selection of nursing interventions aiming at reaching the results which the nurse is responsible for. This procedure allows the plan, coordenation, and evaluation of actions prioritizing the client assistance.
Objectives: This paper had the goal to identify the main nursing problems verified by the nurses in the pediatric intensive care unit during the child admission.
Methods: The methodology of this paper was performed in two phases. In the first phase, there was a bibliographical study based on Lilacs and Medline. In the second one, the verification of admitted child report was conducted in the pediatric intensive care unit of a private hospital in São Paulo city, in the period from July 2004 to January 2005.
Results: From 46 analyzed reports were verified 22 nursing problems. The most frequent incidents were falling (100%), alterations of breathing pattern (73,9%), pain (69,5%), risk of infection related to central or peripheral venous catheter (67,3%), potential pressure ulcer development (47,8%), possible alteration of conscience level (45,6%), risk of alterated nutrition (39,1%), risk of broncoaspiration and hemodynamic alteration (34,7%).
Conclusions: We conclude that through the investigation of children's main nursing problems admitted to the PICU, it was possible to define the clients' profile, and, consequently, to improve and to specialize the nursing assistance.

0389 QUALITY OF CARE ON AN INTENSIVE CARE UNIT (ICU): USING OBJECTIVE INDICATORS AS ANALYSIS TOOLS

M Knibel[1], R Hatum[2], C David[1]
1 Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 2 CardioTrauma Ipanema Hospital, Rio de Janeiro, RJ, Brazil

INTRODUCTION: The routine follow up of objective quality indicators (product analysis) and subjective quality indicators (service analysis) has essential importance to an adequate manegement of an ICU. It allows continous PDCA cicles (to plan, to do, to check and to act) and the adoption of preventive and corrective measures, wich is a simple, dynamic and efficient manegement system.
PATIENTS AND METHODS: We followed 405 patients admitted to our ICU from february to november of 2003. We accessed the following indicators: non-programmed thracheal extubation, pressure ulcers occurrence, ICU re-adimittion rate, ICU lenght of stay and ICU mortality rate matched to APACHE II estimated mortality. The first four indicators were compared to the mean rates obtained from the QuaTI software® - Quality in Intensive Care Medicine – developed by the Brazilian Intensive Care Medicine Association and that contains data from 40 brazilian ICU, allowing adequate benchmarking. The statistical analysis used qui-square 2 and Fisher tests. We accepted p<0,05 as significance level. The software pack used was SAS® System.
RESULTS: Non-programmed thracheal extubation:
Our – 4 %
QuaTI – 2,46 % p=0,17
Pressure ulcers occurrence:
Our – 4,94 %
QuaTI - 2,42 % p=0,002
ICU re-adimittion rate:
Our – 0,49 %
QuaTI - 2,08 % p=0,027
ICU lenght of stay:
Our – 6,2 days
QuaTI - 7,18 days p=0,0001

Pressure ulcers occurrence (february to november 2004)
Our – 3,66 %
QuaTI – 3,66 % p=0,99

Mortality rate x APACHE II:

ICU	Mean APACHE II	Predicted mortality rate (%)	Observed mortality rate (%)
Our	12	11,5	11
QuaTI	10,7	11	13,3

CONCLUSIONS: The analysis of tables allow us conclude the following:
1.Our non-programmed thracheal extubations rate were higher than the system mean rate, but without statistical significance. Regarding pressure ulcers ocurrence, the first results triggered a improvement process that resulted in a critical change, as one can see in the last table (february to november 2004).
2.Our ICU re-admittion rate is significatively lower than QuaTI system one, wich lead us to conclude that our discharge politics is correct.
3.The pressure ulcer occurrence indicator, even significatively higher than QuaTI mean rate, curiously did not influence the final quality indicators (ICU lenght of stay and mortality rate in ICU).
4.It is essential to follow up the objective indicators, submitting them to benchmark, because it really allow us to do PDCA cicles and have the ICU manegement under close control.

0390 EFFECTS OF RESPIRATORY PHYSIOTHERAPY AND PASSIVE MOBILIZATION ON INTRACRANIAL PRESSURE

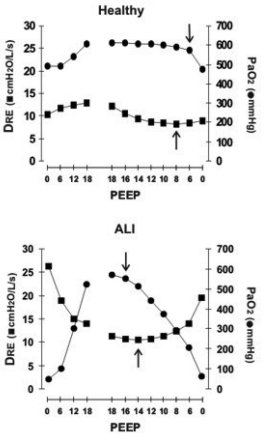
SN Nemer, V Godinho, T Clipes, M Rocha, L Mendonça, V Godinho, R Maia, J Caldeira, C Geraldo, LM Azeredo, PCP Souza
Hospital de Clínicas de Niterói, Rio de Janeiro - Brazil

BACKGROUND / OBJECTIVES: The effects of physiotherapy on intracranial pressure (ICP) are not totally clear. The aim of this study is to evaluate the effects of respiratory physiotherapy and passive mobilization on ICP.
METHODS: Seventy patients with traumatic brain injury (TBI) and stroke with Glasgow coma scale (GSC) < 8 were evaluated. Thirty-degree head-up position was used during the study. ICP was monitored during the following procedures: chest compression, vibration associated to chest compression, unilateral continuous chest compression, tracheal suction with open circuit and closed circuit, passive mobilization of arms and legs, hip rotation, scapular mobilization in lateral decubitus and lateral flexion of the lower trunk. Wilcoxon test was used to evaluate changes on ICP during the procedures.
RESULTS: Initial ICP was 14 ± 6.4 mm Hg. Four procedures changed ICP expressively: lateral flexion of the lower trunk (19.1 ± 6.52 mm Hg; $p < 0.0001$), unilateral continuous chest compression (19.09 ± 6.43 mm Hg; $p < 0.0001$), tracheal suction with open circuit (19.06 ± 6.46 mm Hg; $p < 0.0001$), and with closed circuit (18.2 ± 7.61 mm Hg; $p < 0.0001$).
CONCLUSION: Unilateral continuous chest compression and lateral flexion of the lower trunk should be avoided in patients with intracranial hypertension. Tracheal suction is unavoidable, but should be done quick and carefully.

0391 DYNAMIC AIRWAY EXPIRATORY RESISTANCE IS USEFUL FOR DETECTING THE OPEN-LUNG PEEP AFTER A RECRUITMENT MANEUVER

F Suarez-Sipmann[1], SH Böhm[2], G Tusman[3], H Reismann[2], O Tham[2], T Pech[2], E Turchetto[3], G Hedenstierna[4]
1 Fundación Jiménez Díaz, Madrid, Spain; 2 University Hospital of Eppendorf, Hamburg, Germany; 3 Hospital Privado de Comunidad, Mar del Plata, Argentina; 4 University Hospital of Uppsala, Sweden

Background: The optimal level of PEEP after a lung recruitment maneuver (RM) is difficult to assess in mechanically ventilated patients. Therefore, a non-invasive and on-line monitor is mandatory for the estimation of this pressure at the bedside.
Objectives: We hypothesized that dynamic expiratory airway resistance (DRE) could be helpful in identifying the closing pressure of the lung after RM an thus be useful to titrate the level of open lung PEEP (OL-PEEP) i.e. the level of PEEP that keeps the lungs open according to PaO2 data.
Protocol: 7 healthy (H) and 15 acute lung injury (ALI) pigs were studied. Under mechanical ventilation in volume control (VT of 6 ml/kg, RR of 30 bpm, I:E of 1:1 and FiO2 1), PEEP was sequentially increased during the incremental limb in 6 cmH2O steps every 10', from 0 to 18 cmH2O (H) and from 0 to 24 cmH2O (ALI). Then, a 2 minute RM, i.e. PIP/PEEP of 40/20 cmH2O (H) and 60/30 cmH2O (ALI), was performed. On the decremental limb, PEEP was decreased 2 cmH2O every 10' until ZEEP. DRE and PaO2 were recorded on-line. Data at the end of each PEEP level period were analyzed. OL-PEEP was defined as a fall in PaO2 > 10% related to its maximum value. OL-PEEP was determined and compared to the lowest value of DRE.
Main results: In healthy pigs PaO2 remained within normal values during the entire protocol. In ALI, severe hypoxemia was observed at the lowest PEEP levels. PaO2 increased after RM and remained high during the highest PEEP levels. OL-PEEP was 16 cmH2O in ALI and 6 cmH2O in H pigs. DRE slightly overestimated OL-PEEP in H whereas it slightly underestimated it in ALI. Correlations between PaO2 and DRE were higher in ALI (r = -0.88) and no significant in H (r = 0.33).
Conclusion: DRE was affected by a RM and was useful for non-invasively estimate the closing pressure of the lung, and hence OL-PEEP in healthy and ALI pigs.



0392 INFECTION IS A MAJOR RISK FACTOR TO PATIENTS ADMITTED TO ADULT ICU

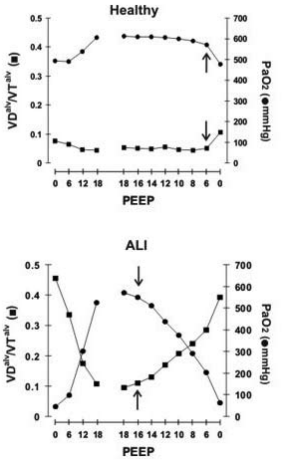
NB Silva, RP Oliveira, C Teixeira, TF Tonietto, RV Cremonese, JH Barth, SFM Brodt, ES Oliveira, FAC Alves
Intensive Care Unit of Hospital Moinhos de Vento – Porto Alegre, Rio Grande do Sul, Brazil

BACKGROUND. Infection is a risk factor that could affect outcomes in critical ill patients in ICUs. The presence of infection at admission or acquired during ICU stay could develop morbidity, organ dysfunction and lessen the capacity of recovery of other co-morbidities.
OBJECTIVE. To evaluate how infection present either at admission (primary) as acquired in ICU (secondary)affect patients outcomes expressed as hospital and ICU stay and mortality.
METHODS. Prospective cohort study including all consecutive patients admitted from December-2003 to December-2004 in a 21 beds medical-surgical ICU. Infection was recognized according CDC definitions. Primary infection was that identified at ICU admission and secondary infection that acquired during ICU stay. Patient's characteristics were: gender, sex, APACHE II, McCabe classification of disease, CMI, co-morbidities. Interventions were: TISS, inotropics, sedatives, insulin, dialysis, nutrition, mechanical ventilation (MV) and surgery. Main outcomes were: time in MV, ICU and hospital stay after ICU discharge, mortality. Variables were expressed in frequencies and means. Student's t test was used to compare means; Chi-square and Fisher exact test for categorical ones, $p < 0.05$ were significant.
RESULTS. From 788 patients, 231(29.31%)had infection, 58.0% males. Patients with infection (primary or secondary origin) were older (69.8±16.8 p<0.02); higher APACHE II OR 3.86 (IC95% 2.64-5.65) p<0.001; more fatal and ultimately fatal disease p<0.001; higher TISS-24h (22.52±8.0 p<0.001); more inotropic use OR 2.7 (IC95% 1.91-3.73 p<0.001); more insulin therapy OR 2.2 (IC95%1.48-3.30 p<0.001); more dialysis OR 3.3 (IC95% 2.32-5.88 p<0.001) and no differences in co-morbidities, comparing to non-infected patients. Infected patients had: higher MV time (7.13±15.2 vs.1.67±6.9 days p<0.01); higher ICU stay (12.1±16.0 vs.6.07±10.8 days p<0.01); higher hospital stay after ICU (12.65±15.1 vs. 8.57±14.9 days p<0.02) and higher mortality (23.8% vs. 8.0%) OR 3.56 (IC95% 2.31-5.46 p<0.01). Identification of the etiology pathogen (19.04%) was not a benefic factor related to outcomes, compared to those infected without identification: mortality 27.4% vs.21.5% p<0.44; as well no differences of ventilators-time and ICU and hospital stay. Comparing patients with primary infection against those with secondary infection there was no difference in mortality (36.5% vs. 41.30% p<0.59) but those with secondary infection had higher MV time (9.32±16.5 vs.14.48±20.2 p<0.09) and ICU stay (14.11±17.4 vs.24.5±22.4 p<0.002) and a trend to higher hospital stay after ICU (10.29±12.72 vs. 14.69±25.6 p<0.19).
CONCLUSIONS. ICU infected patients, primary or secondary in origin, had higher mortality, ICU and hospital stay compared to non-infected patients. Their outcomes in this study were related more properly to the severity of disease at admission and to the need of more intense level of care. Secondary infection had no higher mortality but cause a longer stay in ICU and hospital.

0393 THE RATIO ALVEOLAR DEAD SPACE / ALVEOLAR TIDAL VOLUME IS A GOOD INDICATOR OF LUNG RECRUITMENT

G Tusman[3], F Suarez-Sipmann[1], SH Böhm[2], O Tham[2], T Pech[2], E Turchetto[3], G Hedenstierna[4], H Reissman[2]
1 Fundación Jiménez Díaz, Madrid, Spain; 2 University Hospital of Eppendorf, Hamburg, Germany; 3 Hospital Privado de Comunidad, Mar del Plata, Argentine; 4 University Hospital of Uppsala, Sweden

Objective: In clinical routine gas exchange guides PEEP titration in mechanically ventilated patients. Our goal was to demonstrate the usefulness of a dead space index (VDalv/VTalv) to find open-lung PEEP (OL-PEEP), i.e the level of PEEP that keeps the lung open according to PaO2 data, after a recruitment maneuver (RM).
Methods: In seven healthy (H) pigs and 15 with acute lung injury (ALI) a cycling RM was performed using volume controlled ventilation (VT = 6 ml/kg, RR = 30 bpm, I:E = 1:1 and FiO2 = 1). On the incremental limb, PEEP was increased sequentially every 10'in steps of 6 cmH2O, from 0 to 18 cmH2O (H) and from 0 to 24 cmH2O (ALI). Then, a 2 minutes RM, i.e. PIP/PEEP of 40/20 cmH2O (H) and 60/30 cmH2O (ALI), was performed. On the decremental limb, PEEP was decreased by 2 cmH2O every 10'. PaCO2 and PaO2 were recorded on-line. Data at the end of each PEEP level period were analyzed. OL-PEEP was defined as a fall in PaO2 > 10% related to its maximum value. OL-PEEP was determined and compared to dead space data.
Results: In healthy pigs PaO2 remained within normal limits during the entire protocol. In ALI, severe hypoxemia was observed at low PEEP levels. PaO2 increased after RM and remained higher at higher PEEP levels. The OL-PEEP was found at 16 cmH2O in ALI pigs and at 6 cmH2O in H. In both, H and ALI pigs VDalv/VTalv defined OL-PEEP very well. Correlations between PaO2 and VDalv/VTalv was higher in H (r = -0.92) and ALI (r = -0.99).
Conclusions: VDalv/VTalv is a useful index for OL-PEEP titration at the bedside.



0394 SURVIVAL INVESTMENT FOR DRUGS AND SUPPLIES IN CRITICAL CARE PATIENTS

T Mondragon Rangel[1], GF Vazquez de Anda[1], A Mondragon Rangel[2], FM Gomez Martinez[1], A Jimenez Becerril[1], JA Arzate Villafaña[1]
1 ISSEMyM Medical Center; 2 Universidad Autónoma del Estado de México

Introduction: It has been shown that APACHE II score correlates with costs during the Intensive Care Unit treatment (ICU) (1). Therefore, for each level of APACHE II score a determined cost for Drugs and Supplies (D&S) has to be applied. The aim of this study is to determine the cost of investment for survival for D&S in ICU according the APACHE II score.
Material and Method: From August to December 2004, 191 ICU patients were included The APACHE II score was determined in every patient the next morning of his or her arrival to the ICU and followed until his or her discharge. We used the "bottom up" (1) method for collecting direct cost for D&S in every patient. Four groups of patients were identified according the mortality and APACHE II score. Group I: patients with APACHE II score below 20 points. Group II: patients with APACHE II score between 21 to 24 points. Group III: patients with APACHE II score between 25 to 34 points and Group IV: patients with APACHE II score with more than 35 points.
Results: 70 patients (36.64%) were included in Group I, with a 4.2% mortality rate. The total cost for D&S was $69659.52 USD, with a mean of days in the ICU of 5.86. The total investment for survival was $ 8667.00 USD per patient. 48 patients (25.13%) were included in Group II, with a 8.33% mortality rate. The total cost for D&S was $70272.18 USD, with a mean of days in the ICU of 9.71. The total investment for survival was $1348.13 USD per patient. 62 patients (32.46%) were included in Group III, with a 43.53% mortality rate. The total cost for D&S was $141509.00 USD, with a mean of days in the ICU of 10.81. The total investment for survival was $2145.56 USD per patient. In Group IV 11 patients were included, with a mortality rate of 90.9%. The total cost for D&S was $14088.00 USD, with a mean of days in the ICU of 7. The total investment for survival was $5619.58 USD for patient.
Conclusion: We observed that according to the mortality and severity of the disease, the most important group for investment, as to have an impact on survival, should be mainly applied on patients with APACHE II score of 21 to 25.
Reference: Edbrooke DL, Eades C, Negrini D, Kettle AF, Mills GH. Economics in ICU: an initiative to standardize cost measurements. ICU management 2004; 4:11-13

0395 "HOW SWEET IT IS TO DIE IN COPACABANA PALACE HOTEL!" - QUALITY OF LIFE VS. QUALITY OF DEATH

M Knibel, C Roderjan, R Hatum, E Guimarães, M Lugarinho, M Matos, A Vanzan, C Vasconcelos
São Lucas Hospital; Rio de Janeiro; RJ; Brazil

Introduction - One day before dying Jorge Guinle said: "– I'm going to heaven!" He was actually referring to the last hours of his life that he would like to spend in the Copacabana Palace Hotel, after asking for hospital discharge. Jorginho's option, that turned headline in all brazilian's newspapers, could seem the last excentricity of an eternal playboy. However, a more attentive look reveals a man exercising its free will, choosing the form that judged better to die, without the interference of family or physicians. It showed that, faced to an incurable disease, any medical attitude should lead off a futile suffering of him and his dear relatives.
With the age pyramid invertion and technology development, we are coming across an increase on the incidence of illnesses typical of aging, many of those still without definitive treatment and whose chronic evolution culminates with the society human isolation and limitation to the bed in a full time schedule.
Objectives - A great part of these patients after long hospitalization in Intensive Care Unit (ICU) evolves to death, however we observe a crescent number of patients with needs of hospitalar cares. Where are these patients going? With the creation of an special care unit in a brazilian private hospital in Rio de Janeiro, we noticed an easiness discharge of those patients from the intensive care unit. However, which is the final destiny of those patients? A retrospective evaluation was accomplished in our institution, objectifying the evaluation of age group, prevalent diseases and patients destiny after ICU discharge, inferring an indirect and intuitive impact of the therapy offered in the future quality of life.
Materials and Methods - The study was accomplished in the period between January and February of 2004. The patients were registered after discharge from ICU to Special Care Unit (SCU) and discharge of this last unit to there final destiny (death in UCE, new admission in ICU, discharge to home-care).
Results and conclusions – Eighteen patients were observed during the study. The age average was 73,11 ± 18,21 years (50% men). Two patients died, 3 re-admitted in ICU, 1 referred to another hospital ICU, 3 discharged to home-care and 9 were discharged to room before going home-care. Each day passes, elderly has been the non-surgical patients' age group that were admitted in ICU, with higher rates of hospitalization, and the minority coming back home, exercising there habitual activities, only with partial dependence. The challenge that the medical staff and the society faces is differentiating healing treatment and only palliative one. This issue and its legal, cultural and economical aspects are distorting the real role of the ICU and the medical treatment, especially in elderly life quality.

0396 EVALUATING THE USE OF DROTRECOGIN ALFA (ACTIVATED) IN ADULT SEVERE SEPSIS: A CANADIAN MULTICENTER OBSERVATIONAL STUDY

S Kanji[1], M Perreault[2], C Chant[3], D Williamson[1], L Burry[1]
1 The Ottawa Hospital; 2 Montreal General Hospital; 3 St. Michael's Hospital; 4 Sacre Coeur Hospital; 5 Mount Sinai Hospital

Background/Objectives: Drotrecogin alfa (activated) (DAA), the first novel therapy shown to reduce sepsis related mortality, became available in Canada in March, 2003. We sought to describe DAA use, institutional prescribing policy, resultant clinical outcomes and factors predictive of mortality or bleeding accross the provinces of Ontario and Quebec during the first year of use.
Methods: All hospitals in Ontario and Quebec listing DAA on formulary were approached to participate in this retrospective cohort study. Patients who received DAA during the first year of availability (March 1, 2003 to Feb 29, 2004) were retrospectively identified from pharmacy records. Data related to demographics, illness severity, DAA administration, concomitant therapies, and outcomes related to morbidity, mortality and safety were extracted from the patient's medical record. An institutional demographic survey was also completed at each site. A multivariate analysis was conducted to identify predictors of mortality and adverse bleeding events.
Results: Thirty-four of 69 hospitals with DAA on formulary participated in this study. During the study period 258 patients were treated with DAA representing 5.6 cases per 1000 ICU admissions. Most patients (72%) had community acquired infections with pneumonia (40%) being the most common identified source. Twenty-one percent of patients were transferred from peripheral hospitals. While 89% of hospitals require 2 or more organ failures for DAA eligibility, the mean number of organ failures was 3.3 ± 1.0 and 94% of patients had septic shock. Most patients (76%) received DAA within 24 hours of disease presentation despite 20% of patients having relative contraindications to DAA therapy. Concomitant therapies included steroid replacement (65%), appropriate antimicrobial therapy (93%) and aggressive glycemic control (55%). The incidence of in-hospital mortality was 45% and the incidence of serious bleeding was 9.7%. Predictors of mortality (reported as odds ratios with 95% confidence intervals) were nosocomial infection (2.1, 1.1-4.0), age greater than 65 (3.4, 1.9-6.1), and three or more failing organs (3.3, 1.6-6.9), while treatment within 12 hours was found to be protective (0.5, 0.3-0.9). Predictors of serious bleeding included having four or more organ failures (3.2, 1.3-8.0) and presence of one or more relative contraindications to DAA therapy (2.7, 1.1-6.6).
Conclusions: Mortality and serious bleeding rates both appear higher in our patients than those reported in controlled studies. Reasons for this disparity may include the greater number of failed organs in our cohort, the presence of relative contraindications to DAA therapy, and possible delays in DAA treatment. Future educational efforts should alert clinicians to the modifiable risk factors associated with higher DAA-associated mortality and bleeding.

0397 DOMESTIC VIOLENCE AGAINST CHILDREN AND TEENAGERS: DOCTORS' AND NURSES' KNOWLEDGE

CB Fran, MJ Hara
Universidade Federal de São Paulo, Escola Paulista de Medicina - UNIFESP/EPM

Background: Violence and accidents are a severe and huge problem for public health in Brazil and it is a challenge for preventive education. Violence, in particular, is a universal sociopathy happening with a major or minor incidence in all countries. It overcomes geographical, socio-economic, religious, and ethical boundaries. Crimes are frequent in all societies and they must be seen as a negative aspect of human history. Violence is a complex phenomenon, because its reasons are multifactorial and hard to define. It is based on several areas of knowledge. However, either intrafamiliar or institutional violence play a role of great impact on the child and adolescent victims' health and life quality.
Objective: This study had the goal of verifying doctor's and nurse's knowledge about some domestic violence aspects against children and teenagers of a health institute.
Method: We performed a descriptive study in a State Research Hospital of secondary level and high complexity, located in a county of São Paulo State. Data was collected through the application of a questionnaire to 55 professionals, doctors and nurses, in four different shifts of the Pediatric units, PICU, and Neonatal ICU. The questionnaire consisted of open semistructured and structured questions related to professional category.
Results: 36 (65.5%) doctors and 19 (34.5%) nurses were interviewed. Their mean of graduation time was 07 years for the doctors and 02 years for the nurses. Most of the right answers were presented in the questions on notification and legal denunciation of suspect or confirmed cases, corresponding to 98.2% of the right answers in both questions. The question most wrongly answered was related to the kinds of domestic violence known, with 87.3% of errors. It was observed, also, that there was no meaningful statistically difference between the right number of analyzed questions and the level of professional education with or without post graduation.
Conclusion: Nowadays domestic violence can be considered as an important compound of the cultural violence of a society, because it already takes part in our social outlook. It was observed that the interviewed professionals are conscious about the notification and legal denunciation. However, generally, in specialized literature the professionals who assist children and teenagers agree, with consensus, that a "sub-notification" of domestic violence cases implicate an underestimation of the real number of theses cases. Besides, it makes a strategic plan of prevention in public politics and health advancement difficult.

0398 NOSOCOMIAL INFECTIVE ENDOCARDITIS IN CRITICALLY ILL PATIENTS: AN ANALYSIS OF 33 CASES. MACIEL MONTEVIDEO. URUGUAY

R Vázquez, E Echavarría, M Percovich, R Erlijman, H Bagnulo
Centro de Tratamiento Intensivo Hospital Maciel Montevideo Uruguay

Background Nosocomial infective endocarditis (NIE) in critically ill patients represents an unique entity, with a hight morbilidity and mortalility.Considering its rare occurrence and the multiple confounding symptoms and signs in this group of patients, the diagnosis can be dificult, delayed, or even missed. prospective study of 130 consecutive patients with infective endocarditis (IE)according toNIE in critically ill patients has serious consequences leading to multi-organ failure, which can further complicate the clinical picture as well as the management.
objectives The purpose of this study is to evaluate the epidemilogic, clinical ad microbilogic characteristics of patients with admitted or acquired nosocomial endocarditis in the intensive care unit (ICU) from 1991-2005.
Methods Retropective and prospective study of 130 consecutive patients with infective endocarditis (IE)according to modified Duke' s criteria.
Results NIE was identified in 33/131 episodes. Of these, twenty five male, aged 18-82 yrs (mean 52 ± 18) and SAPS II score was 30 ±17. The reason for the admission to the ICU were congestive heart failure in 11 patients,
neurological complication in 10, sepsis in 9, and septic pulmonary embolism in 4 patients. Twenty five patients were predisposed to infection: prosthetic valve in 9, others predisposing heart diseases in 15 patients. In all cases ,NIE was the consequence of bacteremia related to a medical or surgical procedure: intravascular devices 16,hemodialysis 8, prosthetic valve 9, digestive endoscopy 2, osteomyelitis 1,septic arthritis 2. Gram positive were found in 24/27 of all cultures: Staphylococci 20, Streptococci 4, Pseudomona aeruginosa 3;culture negative 4. Staphylococcus aureus 15/33, was the predominant micro-organism. The echocardiogram was indicative for IE in all patients. Diagnosis of IE was established by trasthoracic echocardiography (TTE) study in 17 patients and by transesophageal echocardiography (TEE) in 15 patients. TEE were required in 5 patients to confirm diagnosis or fully to delineate the extent of disease.The sensitivity of TTE for IE was 63%,compared with 100% for TEE.The overall in hospital mortality was 52% (17/33). Mortality was 76% medical treatment patients, and 23% in surgical treatment. The following clinical factors were associated with outcome: staphylococcus, neurological complications, and cardiac surgery.
Conclusion NIE carries high morbidity and mortality. Prevention needs to be emphasized; patients at risk shold be identified for prophylaxis. Better care of intravascular devices and other invasive procedures must be implemented.
Staphylococcus aureus NIE is associated with high mortality. Patients with Staph aureus bacteremia should be aggressively evaluated for endocarditis.
The mayority of critically ill patiets with NIE meet indicatios for surgery, most of them are considered too ill and unsuitable for it, but who undergo surgery appear to have a better outcome.

0400 PROPOSAL OF AN ALGORITHM FOR DETERMINATION OF DRESSINGS, SECOND TYPE OF OPEN INJURY IN CHILDREN

G Tayar, MA Peterlini, MLG Pedreira
Universidade Federal de São Paulo – Escola Paulista de Medicina, UNIFESP/EPM, São Paulo/SP, Brazil

Background: The wound treatment is part of the nurses' duties. The performance has been increasing progressively in the last years, due to the growing knowledge related to the skin cicatrisation process and the technological and scientific development of nursing cares attending children with many kinds of skin injury. During the post-graduation in pediatrics, the directing of nursing care for children with open wounds and the success of suitable treatment that some of the professionals took in this same institution, when certain dressings were used, made us think about standardizing this care, through the elaboration of a protocol to guide and to support the nurses' decision in the determination of suitable dressing and treatment for children with open injury.
Objectives: This paper aimed at elaborating an algorithm to support the nurses' decision in the determination of treatment in different kind of children's wounds and to evaluate its effectiveness according to the pediatric nurses' opinion.
Methods: We performed a descriptive study in three phases. The first phase was a bibliographical study of physiology and histology of the skin; the cicatrisation process and the different types of dressing. We previously decided that this paper would be based on: Lilacs, Medline, Cochrane, Cinahal, and bibliographical study and the last 10-year dissertations. The second phase was the elaboration of an algorithm. There were some determinations in it related to the evaluation of skin and cicatrisation stage, the cleaning of wound and the type of primary and secondary bandage to be used. In the third phase, a questionnaire was developed. It was composed of average related to nurse identification and applicability checking of algorithm in relation with the graphic presentation, easy reading, sequence, relevance of description of the type of injuries and dressings and support for the nurses' decision during the dressing choice. The categories of the questionnaire were divided into excellent, good, so-so, and bad. There was space for suggestions. 24 nurses of the pediatric department filled out this form in two of the institutions investigated.
Results: The 24 (100%) nurses who took part in the evaluation of algorithm were graduated in a mean period of two years and since then they have been working in pediatric area; 87,5% had postgraduation and a 100% have been assisting one to four children with open wounds on the mouth. As regards the evaluation of algorithm, most of them of verified average, the protocol was considered excellent and 95,84% of the nurses considered important the protocol for the application in the assistance practice.
Conclusions: The proposed algorithm was created and underwent a reformulation after the evaluation of the nurses, who took part in the study. Most of the participants considered important the application of this protocol to support the nurses' decision in the choice of suitable dressings in children with open wounds.

0401 FOLLOW UP OF SUSPENSION OF TREATMENT IN INTENSIVE CARE UNIT

M Knibel, C Roderjan, R Hatum, E Guimarães, M Lugarinho, C Vasconcelos, M Matos, A Vanzan
São Lucas Hospital; Rio de Janeiro; RJ; Brazil

Introduction – In the setting where the preventive medicine is no longer the protagonist, and the act of cure became the rule at any cost, the growing technological development allows, a lots of time, to making mistakes in medical judgement of possible reversion of a pathological process and just to put back the death. However, prolong the life sometimes only means perpetuate suffering, and in this context the Intensive Care Unit (ICU) is where we faced this controversy daily.
Objectives – Not so long ago, the only patients named terminal, were those suffering from advanced cancer. However, this and other patients finish their days in the ICU, even when death is an inevitable process. Seeking for a profile of those patients that develop terminal diseases, collection of data was accomplished regarding the various diseases and evolution in the Intensive Care Unit until the moment of refusion or suspension of treatment.
Materials and Methods – In the period between January and February of 2004, all patients of the ICU an Brazilian Private Hospital in Rio de Janeiro, that already interned developed multiple organ failure and had decided for refusing some treatment, were analyzed. Besides the general demographic data (age, sex, reason of the hospitalization in ICU) were described also those with any acquired organic failure, the time among refusing treatment and death; which professionals and relatives participated in the decision; what motivated the decision; and therapies refused (from objective measures of treatment, like vasoatives amines use, to general confort measures, as analgesia and sedation). The examiners have no direct intervention in the decisions.
Results and Conclusions - The reduced number of patients evaluated to the moment (10 patients) is the bias that cannot generate significant statistical dates to the above-mentioned objectives. The studied group had an average of 69,4± 15,07 years; 40% males vs. 60% females; com 50% with advanced neoplasia. Respiratory failure was present in 100% of the cases, followed by the renal, neurologyc and hemodinamyc failures (each 70% of the cases). All patients presented at least 3 organic failures. The cardiopulmonary reanimation was the most refused therapy (100%) followed by hemoderivates refuse (90%). The accomplishment of this work opens the precedent for a series of cultural discussions (mainly religious), ethics and even legal, that reinforce the need of a social review in the form of facing the death as process irreversible natural, relentless and a lot of times.

0403 COMPLICATIONS OF PATIENTS ON MECHANICAL RESPIRATORY ASSISTANCE IN THE ADULT INTENSIVE CARE UNIT OF THE HOSPITAL DE CLINICAS

H Caballero, H Bianco, C Montiel, J Sartori, S Alsina, S Baez, B Figueredo, C Ayala, R Farina
Clinics Hospital, Faculty of Medicine of the Asuncion National University. Paraguay

Objective: to determine the clinical characteristics and evolution of patients on mechanical respiratory assistance (MRA).
Methods: observational, prospective, analytical study including randomnly sampled patients admitted to the Adult Intensive Care Unit (UTIA) from January 2001 to May 2003. Clinical and MRA records were used. Data were processed with the EPI Info 2002 software, with a $p < 0.05$ as significant.
Results: 511 patients were studied. Average age was 50.2±20 years. Women were 52.3%. The most frequent diagnoses on admission were: post-operative 45%, infections 25.6%, cardiovascular 9.9%, APACHE II average was 19.0±9 and SAPS II 39.3 ±22, multiorgan failure ocurred in 76.5%. Average UTIA stay was 9.3±10 days. Most frequent indications for MRA: postoperative 43.2%, pulmonary disease 23%, neurological 7.4%. Average MRA duration 7.7±9 days, intubation and MRA on admission 94.1%. Most frequent weaning method: T tube 30.2%, combination SIMV-CPAP- T tube 15.1%, direct extubation 10.2%. Sedation: association of infusion and boluses in 42%, none used in 24.4%. Extubation was done on first day of MRA in 19.5% and on the second day in 19.5%. Average number of blood gases determinations was 16.7±20. Tracheostomy was performed in 7.6% of patients, most frequently indicated for prolonged intubation in 40.6%, done on average on the 17th day. Of these, 87.1% of patients were released with their tracheostomy. The endotracheal tube was changed in 11.4% of patients, an average of 1.43 times per patient. There was a failure in extubation in 10.4% and the most frequent cause was inadequate management of secretions and bad respiratory mechanics in 17%. Overall mortality was 52.6%. There were MRA-inherent complications in 32.6%, with one complication in 75.6%, 2 in 17.1% and>2 in 7.2%. The most frequent was pneumonia in 31.7%, endotracheal tube-related mechanical complications in 16.2%, atelectasis in 12%, autoextubation in 9%, tracheostomy complications in 7.8%. Average appearance of complications was on the 10th day. Specific treatment was administered in 85.6%, with resolution in 71.2%. Of the patients with complications, 49.7% died, in 34.9% of cases death was related to the complication. MRA complications were more frequent as of the 8th day on MRA, OR 9.9 (6.1 - 16) $p<0.001$. The complication most frequently associated with death was pneumonia OR 3.9 (1.3 - 11) p 0.04.
Conclusion: complications are frequent in our patients on MRA, they appear late, and pneumonia is the most frequent and has the worst prognosis.

0404 PREVALENCE OF MUCOSAL THICKENING IN PARANASAL SINUSES IN CRITICALLY ILL INTUBATED PATIENTS

ACD Jorge, RARA Oliveira, SMTP Soares, IMR Pereira, S Araújo
UNICAMP/ Campinas-SP/ Brasil

BACKGROUND AND OBCJETIVES: The purpose of this study was to demonstrate the correlation between the length of the presence of the orotracheal tube and the incidence of complete opacification in the paranasal sinuses of patients under mechanical ventilation.
METHODS: Fourteen patients with an hospitalization time less than 48 hours were enrolled in this study. Simple cranial x-ray had been taken at bedside immediately after the admission of the patients in the Intensive Care Unit and at the third and fifth days of evolution.
RESULTS: Suggestive images of liquid collections in the paranasal sinuses of the patients were found before and after 24h of orotraqueal intubation. Radiographic and clinical findings were carefully evaluated searching for documentation of the presence of liquid collections in the maxillary sinuses, since they are frequently affected and easier to be visualized in a simple cranial x-ray.
CONCLUSIONS: However, complete opacification of the maxillary sinuses wasn't seen in any patient, thus making not possible to correlate the presence of the orotracheal tube and sinusitis based on simple cranial x-ray images.

0405 THE APPLICATION OF BISPECTRAL INDEX (BIS) MONITORING IN THE PEDIATRIC INTENSIVE CARE UNIT: NURSING AND TECHNOLOGY

BC Alve, CB Fran, FC Regi, RP Sant
Instituto Israelita de Ensino e Pesquisa - Israelita Albert Einstein Hospital

Background: The bispectral index (BIS) monitor is an electroencephalographic recording device that generates a single numeric value with clinical data indicative of hypnosis. It was created with the purpose of helping the anesthesiologist during the surgical procedures. The monitor is used to calculate a numeric scale from 0 – 100 equaling an electroencephalogram pattern of an awake and alert patient. The electroencephalogram is registered for the bispectral index sensor over the temporal-frontal area of the forehead. The goal is to provide an objective, quantitative measure of the level of hypnosis for all patients.
Objective: To report the potential applications of Bispectral Index (BIS) monitoring as a helpful tool in a continue evaluation of sedation of a child in a Pediatric Intensive Care Unit (PICU) associated with sedation score.
Methods: We performed a bibliographical study based on data: MEDLINE and LILACS and the training of the interdisciplinar nursing team on the use of BIS monitor and its application in the assistance for pacients undergo continue sedation, barbiturate coma, and mechanical ventilation. It is important to highlight that despite the available literature be limited in the BIS application, there are researches already that show the good performance of monitor BIS in emergency rooms and PICUs.
Results: The results of this study demonstrate that the bispectral index may be a valid monitor of depth of conscious and deep sedation in the spontaneously breathing child. The bispectral index correlating mainly with sedation scores are objective and easy to use.
Conclusions: The bispectral index offers an objective, safe and reliable measure of sedation because reducing procedure time. Bispectral index monitoring raises the standard of patient care, and in our view, should be used to augment standard assessment. The real question is whether bispectral index can be used to judge the level of sedation in pediatric patients having noninvasive studies.

0406 MORTALITY PREDICTORS IN A ONE YEAR COHORT OF ADULT PATIENTS IN A MEDICAL-SURGICAL ICU

FAC Alves, RP Oliveira, C Teixeira, TF Tonietto, RV Cremonese, AS Machado, JH Barth, SFM Brodt, ES Oliveira, NB Silva
Intensive Care Unit of Hospital Moinhos de Vento – Porto Alegre, Rio Grande do Sul, Brazil

BACKGROUND. Survival is the most important objective of the complex process in the care of critical patients admitted in ICUs. Several severity of disease scores were developed with the aim of predicting survival/dead, but concerns exists about their performance in the total universe of patients assisted in a general ICU. Other issues are the influence of the structure and the intensity of the multiple interventions in the outcomes, mainly mortality and resolution of unstable or failing organs. We decided to evaluate which factors were associated with mortality in our experience.
OBJECTIVE. To determine the factors related to patient's characteristics and to interventions done during ICU stay that were predictors of mortality.
METHODS. Prospective cohort study, including all consecutive patients (n=788) admitted from December-2003 to December-2004. Variables included for analyses were: demographic, diagnosis, severity scores at entrance; interventions issues done during ICU stay: TISS28, vasoactive medication, invasive procedures, sedation, nutrition, dialysis, clinical infection and complications. Main outcome was ICU mortality. Variables were expressed in frequencies and means. Chi-square and Fisher exact test were applied to identify which variables were associated with dead ; uni- and multi-linear logistic regression was used to establish the independent effect on mortality; p were significant at 0.05.
RESULTS. From December-2003 to December-2004, 788 patients were admitted in the ICU. 53.8% male; age 67.8±16.9; 85.8% were medical and 14.2% surgical patients. APACHE II: 14.16±6.8; corporeal mass index (CMI) 25.6±4.8; 26.7% patients had one and 52.6% had two or more co-morbidities; sepsis were present at admission in 16.2%. Main interventions in ICU were measured as TISS-24h: 19.6±8.6 and TISS-72h: 7.8±8.7; specific ones: inotropic drugs in 33.5%; dialysis in 10.5%; nutrition 95.1%; insulin 15.1%; sedation 34.9%; surgery 14.2%; mechanical ventilation 38.2%; pulmonary catheter 7.0%; arterial line 16.2%. 10.8% of patients developed nosocomial sepsis and 9.3% cardiopulmonary reanimation. ICU crude mortality were 12.7%. By logistic regression major predictors of mortality were: APACHE II, surgery procedures, inotropic use, dialysis, sedation and nosocomial sepsis. Other factors like: age, nutrition therapy, insulin, CMI and TISS were not associated with dead.
CONCLUSIONS. In this cohort study: 1) between patient characteristics only APACHE II and secondary sepsis were predictors of mortality; 2) between interventions done during ICU stay, surgery procedures , inotropic use, dialysis, sedation, but not TISS, were more frequently associated with mortality.

0407 EVALUATION OF PATIENTS WITH TRACHEOTOMY IN ADULT INTENSIVE CARE UNIT

S Gallo, H Bianco, S Baez, C Aldana, R Rojas, C Samaniego, B Figueredo, C Ayala
Hospital's Clinical– Medical Sciences Faculty–National University. Asunción - Paraguay

Objective: to evaluate the clinical characteristics, demographic profile, indications, morbility and mortality of the tracheosthomy; as well the differences according to the approach and the surgical team that to made the procedure, in patients of the Intensive Care Unit Adults (ICUA) of the our hospital.
Methods: study observational, retrospective and analytic; including 60 patients ICUA of the Hospital's Clinical, with requirement elective traqueostomy, in one period of 4 years (1999-2003). Was evaluated the age, sex, scales prognosis, indications and operative variables, technique surgical employee with its corresponding postoperative Results. The percutaneous traqueostomía was performed by a single surgical team and the conventional one by other different teams. The data were processed in Epi-Info 2002 and it was considered as significant a $p < 0.05$.
Results: of the 60 included patients 21 men (35%) and 39 women (65%). You mean age 53.8 ± 13.3 years; APACHE II 19.9 ± 7.2; SAPS II 41.8 ± 15.3. Reasons for incomes: clinical 80%, surgical 20%. Indication for tracheostomy: oral intube prolonged 90%, difficulty for weaning 10%. Approach: conventional 66% (n = 40), percutaneous 34% (n = 20). The most utilized anatomical place was between the 2º and 3º tracheal ring in 51 patients (91.1%) followed for the 3º and 4º ring in 4 patients (7.1%). The complications finded in 18 patients (30%), corresponding 15 (25%) at the conventional one and 3 (5%) the percutaneous (p=0,13). Immediate complications in 13 patients which were: hemorrhage 7 (conventional 4, percutaneous 3), infections wounded operative 3 (all conventional ones). Late complications in 5 patients, tracheo-esofaghys fístulas 2, obstruction cannula 2, subcutaneous emphysema 1 (all conventional ones). Complications the conventional one according to surgical teams: 2 of 20 patients in team A, 2/ 6 patients in B, 6/14 patients in C (p=0.06). 4 patients died to the out ICUA (all for conventional technique), one related to the tracheostomy, no deceased in the team A, one of the B and 3 at the C.
Conclusion: the approach tracheostomy in ICUA is not exempt of complications and they could be avoided with the training for the surgical teams and use the percutaneous technique.
Key words: tracheostomy–complications–mortality– intensive care unit.

0408 BEDSIDE QUALITY CHECK-LIST AND ITS IMPACT IN HOSPITAL INFECTION CONTROL

M Knibel, L Castro, R Hatum, C Roderjan, E Guimarães, M Lugarinho, C Vasconcelos, A Vanzan, M Matos
São Lucas Hospital; Rio de Janeiro; RJ; Brazil

Objective: To verify the impact of a bedside quality check-list introdution in ventilation associated pneumonia (VAP), nosocomial infection overall ratio (NIOR) and mechanical ventilation lenth of use (MVLU).
Methods: The bedside quality check-list (BQCL) is a twelve-item chart: mechanical ventilation (length of use and weaning), sedation, analgesia, patient's position (semirecumbent), deep vein thrombosis prevention, gastrointestinal bleedind prevention, nutrition (enteral or parenteral feeding), Global Energy Requirements, decubitus ulcer prevention, corneal ulcer prevention, indwelling catheter's lenth of stay, worst glicemia in the last 24 h. The study included the period of six months before (B-BCQL) and six months after (A-BCQL) the introduction of BQCL in a intensive care unit (ICU).
Results: During the study, VAP rate improved (21,75 % in B-BCQL to 7,02 % in A-BCQL), even through a worsening in the MVLU (49,5 % in the B-BCQL to 56 % in the A-BCQL). The NIOR falls from 21,3 (B-BCQL) to 14,32 (A-BCQL).
Conclusions: BQCL have proved to be a useful tool, improving VAP and NIOR rates, with impact in the morbidity and mortality rates and in the costs to the hospital.

0409 DETERMINING THE UTILITY OF THE CLASSIFICATION OF EARLY ONSET PNEUMONIA AND LATE ONSET PNEUMONIA IN OUR INTENSIVE CARE UNIT (ICU)

M Paz, C Castararo, S Giannasi, E San Roman, A Gallesio
Hospital Italiano Buenos Aires Argentina

OBJECTIVE: Determining the utility of the classification of early onset pneumonia and late onset pneumonia in our ICU in deciding the appropriate empiric therapy.
MATHERIAL AND METHODS: Retrospective observational study conducted in an adult surgical/clinical ICU of a teaching hospital in Bs. As., Argentina from January 2003 to December 2004. Patients were enrolled from the SATI-Q database, and after crossing this data with the central laboratory's database, the causative pathogens bacteriology and its resistance and sensitivity were obtained. Inclusion criteria: patients > 18 years of age that were suspected of having developed a hospital- acquired pneumonia during their stay at ICU. Exclusion criteria: patients with nosocomial pneumonia at admission.
Patients were defined to have a hospital-acquired pneumonia on the basis of clinical criteria and cultures of lower airways secretions obtained with bronchoalveolar lavage or tracheal aspirate. Pneumonia is considered to be early onset pneumonia for the first four days and late onset pneumonia since the fifth day.
Statistical Analysis: continue variables are expressed as mean. Statistical significance was determinated by using Student's t-test with Bonferroni's correction. Significance was accepted for $p<0.05$.
RESULTS: 93 patients fulfilling the inclusion criteria, 85 required mechanical ventilation (91%), 71(76%) developed late onset pneumonia and 22(24%) developed early onset pneumonia. Males 56 (54%), APACHE II: 18.42 +8, Length of stay in ICU: 22 + 13, Age 64 +14, TISS 23.9 +4.2
These variables were evaluated in each group resulting in no statistical significance, except for the stay variable (those that developed a late onset pneumonia had stayed longer) with $p <0.002$.
There was not a significant difference between both groups´ mortality rates.
The germs that most frequently appeared in early onset pneumonia were:
1-2 days: Haemophilus influenzae, Streptococo viridans, Serratia marcescens, Enterobacter colacae, Streptococo pneumoniae, Neiseria, Corynebacterium; 3days: SAMR, Acinetobacter baumannii; 4days: Acinetobacter baumannii (Colistin), SAMR, Pseudomona aeruginosa (Ceftazidime), Enterococus sp
The germs that most frequently appeared in late onset pneumonia were: SAMR, Acinetobacter baumannii (Colistin), Pseudomona (Imipenem, Colistin), Proteus mirabilis (Amikacina, Ceftazidime, Ceftriaxone, Ciprofloxacine), Klebsiella pneumoniae (Imipenem), Providencia (Meropenem, Imipenem, Amikacina), Stenotrophomona maltophila, Enterobacter, Staphilococus aureus (AMS), Proteus vulgaris.
CONCUSIONS: In our ICU the germs that most frequently appeared in early onset pneumonia since 3 days were multiresistents, then we have to change the empiric therapy including antibiotics of broad spectrum from the first 3 days of stay.

0410 SEVERITY OF DISEASE AND INFECTION WERE RELATED TO BAD OUTCOMES IN ELDERLY PATIENTS IN A GENERAL ICU

RP Oliveira, C Teixeira, TF Tonietto, RV Cremonese, JH Barth, SFM Brodt, ES Oliveira, FAC Alves, NB Silva
Intensive Care Unit of Hospital Moinhos de Vento – Porto Alegre, Rio Grande do Sul, Brazil

BACKGROUND. Elderly patients (? 70 years old) are progressively more frequently admitted in Intensive Care Units (ICU). Studies addressed to evaluate short- and long-term outcomes of the elderly were not conclusive about the effect of age as a predictor of bad outcomes. This study was designed to evaluate our experience in managing elderly patients admitted in our 21 beds medical – surgical ICU.
OBJECTIVE. To evaluated witch of the patients characteristics and interventions were related to outcomes in elderly patients admitted in a general ICU.
METHODS. Prospective cohort study, including all consecutive patients (n=788) admitted from December-2003 to December-2004. Variables included for analysis were: demographic, diagnosis, severity scores at entrance; intervention issues during ICU stay: TISS28, organ dysfunction, mechanical ventilation, vasoactive medication, procedures, clinical infection and complications; outcomes recorded were: ICU and hospital length of stay, ventilator-days, mortality. Elderly patients characteristics and outcomes were compared with the less-old (< 70 years old) group.
RESULTS. Elderly were 426(54.06%) patients and the less-old group 362 (45.93%). Characteristics of the elderly compared with less-old group were: no differences in gender; higher ultimately fatal and fatal underlying disease 8.2% vs. 4.4%, p<0.02 and 18.3% vs. 14.4%, p<0.02, respectively; higher APACHE II score 15.95±6.35 vs. 12.08±6.7, p< 0.001; more frequent infection disease at admission 33.1% vs. 24.9% (p<0.01) and sepsis 19.0% vs. 13% (p<0.02). During ICU stay there were a higher use of inotropic agents (36.9% vs. 29.6%, p<0.03) and no significant differences in the use of sedation, dialysis, insulin, recombinant human activated protein C (rh-APC), surgery and nutritional therapy. There was no difference in SOFA score at ICU discharge between groups (1.58±3.3 vs. 1.49±3.9., p<0.74). More important bad outcomes were observed in elderly group compared to less-old ones: higher mortality rate at ICU (15.7% vs. 9.1%, p<0.009); higher mechanical ventilation days (3.97±12.7 vs.2.45±6.38, p< 0.001); higher nosocomial sepsis rates (12.4% vs. 8.8%), but not significant (p<0.108). The hospital stay after ICU discharge was higher in elderly group (11.4± 17.3 vs. 7.7±11.7 days (p<0.002), as well were hospital discharge rates were lower (69.2% vs. 83.4%, p<0.001). Age separately was not significant as a predictive factor of bad outcome (OR 1.8 IC95% 1.19 –2.90 p<0.005) in a univariate analysis.
CONCLUSIONS.1) Age separately was not predictive of bad outcomes. 2) The sum of ICU therapeutic interventions was not discriminative for outcomes between elderly and less-old patients. 3) Severity of illness and infection at admission were determinant of bad outcomes in the elderly patients.

0411 PROSPECTIVE EVALUATION OF CLINICAL PULMONARY INFECTION SCORE IN VENTILATION ASSOCIATED PNEUMONIA PROGNOSIS

M Knibel, A Lima, M Lugarinho, R Hatum, C Roderjan, E Guimarães, C Vasconcelos, A Vanzan, M Matos
São Lucas Hospital; Rio de Janeiro; RJ; Brazil

Objective: Prospective evaluation of ventilation associated pneumonia (VAP), through the aplication of the modified clinical pulmonary infection score (CPIS)
Methods: Fifth six (56) mechanical ventilated patients, in the ICU, where observed in a cohort study from august 2003 to january 2004. 24 patients (42,85 %), evolved with VAP. The modified CPIS, wich consists in five components (temperature, leucocyte blood count, thracheal fluid aspect, pO2/FiO2 relation and thorax radiography), was registred in the three days before the VAP diagnosis and in the first, thirth, fifth and seventh day after the diagnosis.
Results: Eighteen (18) patients died (75 % - APACHE II rate= 16,77) and 6 survieved (25 % - APACHE II rate = 15). In the survival group, 5 patients (83,3 %) evolved with lowering in the CPIS , but leucocyte blood count, temperature and thorax radiography did not showed prognostic value. Fourteen patients in the non-survival group (77,77 %) evolved with worsening in the CPIS and 4 (22,22 %) with lowering in the same score. We found significant statistical difference in CPIS beetwen the days (p<0,01, Kruskal-Wallis test). Concerning outcome, CPIS in the 5th day showed significant statistical difference in the surviving group (p<0,01, Mann-Whitney test).
Conclusions: Our study showed that CPIS has outcome power with statistical significance, diferently to what other papers has demonstred.

0412 VALIDATION OF THE NON BRONCHOSCOPY BRONCHOALVEOLAR LAVAGE TO DIAGNOSE VENTILATOR ASSOCIATED PNEUMONIA

J Medina[1], J Pontet[1], A Curbelo[1], H Correa[2], C Bazet[1], E Ormaechea[1], C Formento[1], S Bentancourt[1]
1 Intensive Care Unit. Hospital Pasteur. Montevideo-Uruguay; 2 Faculty of Medicine

BACKGROUND. It is still controversial what is the best way of diagnosing Ventilator-Associated Pneumonia (VAP). There is also little information about this topic in South America.
OBJECTIVE: Validate the non-bronchoscopic bronchoalveolar lavage in the diagnosis of VAP; compared with histologic and bacteriological results of the study of the lung tissue performed after death.
METHODS: experimental design study.
Patients: Patients who died between 7 AM and 5 PM (Monday to Friday) and 7 AM to 1 PM (Saturday) and who had the following criteria were enrolled. The criteria for inclusion were: mechanically ventilated for a period longer than 48 hours, suspected of developing the first episode of VAP, without previous antibiotic treatment or without changes in the antibiotic treatment within the 72 hours before death.
A non-bronchoscopic bonchoalveolar lavage was performed pre-mortem and post-mortem with a protocol previously established.
A mini-digital thoracotomy was performed to allow a biopsy in three different places (approximately 3-5 cm^3 each). The tissue specimens were processed rapidly and the microbiologic analysis was done according to recomended laboratory methods.
The pathologic study was done according to these definitions: no pneumonia, purulent mucous plugging, bronchiolitis, pneumonia, confluent pneumonia and abscess.
The Ethic Committee of the Medicine University approved this study.
STATISTICAL ANALYSIS Concordance was assessed using Kappa index of Cohen.
RESULTS Seven patients were enrolled. They have a mean age of 69,14 ± 10,82 years, a mean APACHE II of 19,85 ± 4,77. The diagnosis at the moment of the Intensive Care Unit admission was: Chronic Obstructive Pulmonary Disease n= 2, severe abdominal sepsis n=1, cardiopulmonary arrest n=1, traumatic brain injury n=3.
The results of the concordance are expressed in the table. The concordance found by Kappa index was 0.695 (IC 95% 0.15-1.23) (substantial concordance of Landis and Koch).
CONCLUSIONS. The primary results shows that the non-bronchoscopic bronchoalveolar lavage is an adequate diagnostic tool to correctly identify the patients who have VAP.

Patient	NB-BAL premortem	NB-BAL postmortem	Histology	Microbiology
1	sterile		no VAP	sterile
2	sterile	sterile	no VAP	sterile
3	Klebsiella oxytoca 10 4	Klebsiella oxytoca 10 4	Intersticial fibrosis	sterile
	Streptococcus 10 4	Streptococcus 10 5		
4	sterile	sterile	no VAP	sterile
5	sterile	Acinetobacter spp 10 3	no VAP	sterile
6	Ps.Aeruginosa 10 7	Ps.Aeruginosa 10 7	Pneumonia	Ps.Aeruginosa1.2x10 5
7	Acinetobacter spp 10 5	sterile	Abscess	Acinetobacter spp2x10 9

0413 FUNCTIONING GUIDELINES OF THE INTERMEDIATE CARE UNIT OF THE HOSPITAL DE CLINICAS CARACAS

Y Morales, Y Torres, E Piña, G D Empaire
Unidad de Cuidados Intensivos, Hospital de Clinicas Caracas. Caracas. Venezuela

INTRODUCTION: As medical and nusing care progress, the necessity of diversifying the health care services arises. It is thus that Intermediate Care Units are created. They are controversial in many aspects, such as costs, rentability, functional dependence, structure, equipment, scope of pathologies, etc. These units should be analyzed as an innovative and integral product in line with the hospital of the future.
OBJECTIVES: To evaluate the requirements of assistance, in relation to the availability of human resources, equipment and infrastructure in the Intensive Care Unit (ICU) and Intermediate Care Unit (IMCU) at the Hospital de Clínicas Caracas. The aims of this study are to establish if the patients received assistance according to their needs and to establish guidelines for the adequate functioning of the IMCU.
METHODS: The type of study used was "Feasible Project". For the diagnostics phase, the instrument called TISS was applied to 74 consecutive patients who entered the ICU or IMCU in a period of 30 days (September 2003). All data obtained was recorded on specially designed data sheets. Availability of equipment was also recorded. A copy of the the floor plan of both units was also used. A two part questionnaire was designed to determine the feasibility of the project.
RESULTS: The main diagnosis of admission was post-op, cardiac surgery (40.5%), cardiac non surgical followed with 20.2%. The third most frequent diagnosis was neurological conditions (13.5%). Of the 74 patients, 19 had a TISS of 15 –19, and were assigned to IMCU, 49 had a TISS equal or greater than 20 and were assigned to ICU. 6 had a TISS of less than 6 and were admitted to minimal care.
According to the TISS, during admission 69% of the patients were adequately located, during hospital stay 77% were correctly located and upon discharge 28% of the patients were correctly located.
The average Length of Stay (LOS) was 2.8 days. When the bed efficiency ratio was related to the 43 patients with TISS corresponding to IMCU at discharge, a need for 4 IMCU beds was estimated.
The current infrastructure and equipment fulfill the requirements, with the exception of the absence of a physical separation between IMCU and ICU areas, and the presence of ventilators and monitors with a greater capacity than required for IMCU.
The functional guidelines for the IMCU were formulated, they were constituted of 16 paragraphs in 5 chapters.
CONCLUSIONS: There were a significant percentage of patients that was not adequately allocated according to their TISS upon admission, and this number increased at discharge. The lack of patient relocation during stay in the IMCU was also noticeable.
Physical separation between ICU and IMCU should only exist to permit the communication for patient transfer.
The consulted experts gave a high degree of approval to the functional guidelines of the IMCU.

0414 FACTORS RELATED TO MORTALITY IN THE POST-OPERATIVE OF THE CARDIAC SURGERY IN THE ADULT INTENSIVE CARE UNIT

S Gallo, H Bianco, M Venegas, M Noguera, S Baez, B Figueredo, C Ayala
Hospital's Clinical–Medical Sciences Faculty–National University. Asunción–Paraguay

Objective: to determine the mortality of patient incomes in the Intensive Care Unit (ICUA) in the post-operative (PO) of the cardiac surgery and to identify the risk factors related to the same one.
Methods: study retrospective, observational and analytic. The data were obtained of the medical records of patients incomes at the ICUA in our Hospital for PO after at the surgery cardiac in the period ranging from July 1999 and July 2003. Demographic data, previous comorbility and other one related to the periods peri and PO were tabulated until the charge ICUA; these they were analyzed in a database created in the Epi-Info version 2002, being determined OR with IC gives 95%; considering significant $p < 0.05$.
Results: 138 patients were included, 80 men (58%) and 58 women (42%), with an average age 43.6 ± 16.5 years. The peformed surgery with more frequency was replacement valvular 52.9% (n=73), being the mitral válvula that more affected with a frequency 68% (n=59). Overall mortality was 17.4% (n=24). The cause death was related directly with the surgical procedure in 12.1% (n=3) of the cases. The risk factors associated to the mortality (analysis univariaty) were: Chronic Obstructive Lung Diseaase OR: 2,38 (0,81-9,68) p = 0,05; the use inotrópics during the surgery OR: 3,74 (1,09-14,13) p = 0,03, like in the ICUA OR: 6,5 (1,4-29) p = 0,01; the transfusion more than 2 volumes hemoderivates in room surgery OR: 4,1 (1,5-10,8) p = 0,002; the current shock in PO OR: 13,2 (4,7-37,5) p = 0,001; sepsis and septic shock in postoperative OR: 23,5 (2,25-587) p = 0,001; sedation for more than 48 hours OR: 4,5 (1,59-13,25) p = 0,001; SAPS II >15 OR: 4,8 (1,4-18,1) p = 0,007; APACHE II >10 OR: 3,3 (1,1-10,1) p = 0,01; at the moment to inside in ICUA with two or more organic failures OR: 5,9 (1,5-26,9) p < 0,005; prevention with preoperative unique dose antibyotic OR: 11 (2,4-50,2) p 0,005; per-operative complications OR: 3 (0,9-10) p = 0,05 and complications in ICUA OR: 6,2 (2,3-16,5) p = 0,001. The analysis multivariaty to showed only at the blood transfusion (OR 8.0 2,4- 26,8) p = 0,01 and prevent unique dosis antibyotic (OR 15,1 3,0- 73,9) p = 0,01.
Conclusion: The 17.4% of the cardiac surgery income ICUA in the post-operative one they died to the charge the same one. We can to identified only two risk factors for mortality and they were the blood transfusion and prevent unique antibyotic.
Key words: heart surgery–mortality–unit gives intensive cares.

0415 MECHANISMS OF INCREASED SUSCEPTIBILITY TO SEPTIC AND ENDOTOXIC SHOCK IN MCP-1/CCL-2 DEFICIENT MICE: ROLE OF MIF

RN Gomes[1], FA Bozza[2], RT Figueiredo[3], P Pacheco[1], AP Larangeira[4], RT Amâncio[1], HC Castro-Faria-Neto[1], PT Bozza[1], MT Bozza[3]
1 Immunopharmacology, Oswaldo Cruz Foundation, RJ, BRAZIL; 2 Intensive Care Unit, HUCFF, RJ, BRAZIL; 3 Institute of Microbiology, UFRJ, RJ, BRAZIL; 4 LATEB, Oswaldo Cruz Foundation, RJ, BRAZIL

Background/objectives- The recruitment of leukocytes to tissues is essential for the inflammatory response to infection. Macrophages play a pivotal role in the pathophysiology of sepsis, since they are main source of inflammatory mediators, such as TNF-a, MIF, IL-6 and IL-10. Accumulating evidence suggests a critical role for the CC chemokine monocyte chemoattractant protein-1 (MCP-1) in a variety of diseases characterized by mononuclear cell infiltration. In this study we investigated the role of MCP-1 in models of sepsis.
Methods- MCP-1-deficient mice (MCP-1-/-) and wild type (WT) mice were submitted to a murine model of polymicrobial peritonitis induced by cecal ligation and puncture (CLP) and endotoxemia (intraperitoneal administration of LPS). Cytokines were measured in peritoneal fluid using enzyme-linked immunoassays (ELISA, R&D systems).
Results- Our results demonstrate that MCP-1-/- mice are more susceptible to CLP model and endotoxemia, when compared to the MCP-1+/+ mice. This susceptibility was characterized by a reduction in the numbers of mononuclear cells and a significant inhibition in the levels of the antiinflamatory cytokine IL-10, but no alterations in TNF-a levels. To further analyze the importance of proinflamatory cytokines, such as MIF in the development of sepsis, we studied the involvement of MIF in the susceptibility of MCP-1 deficient mice (MCP-1-/-) to sepsis. We observed a drastic increase in the production of MIF in the peritoneal cavity at 6 and 24 hours after CLP in MCP-1-/- (10.13±3.16/11.93±4.48) when compared to the MCP-1+/+(1.27±0.618/1.504±1.246). Interestingly, treatment with anti-MIF partially reverted the suscetibility of MCP-1-/- mice to CLP.
Conclusions- Our results indicate an important immunomodulatoty role for MCP-1 in controlling the balance between pro- and antiinflammatory factors in sepsis. MIF seems to be a key proinflammatory mediator controlled by the presence of MCP-1.
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0417 CENTRAL VENOUS SATURATION AS A WEANING SUCCESS PREDICTOR

RV Cemonese[1], SRR Vieira[2], NB Silva[1], C Teixeira[1], A Savi[1], LA Nasi[2], RP Oliveira[1], ES Oliveira[1], TF Tonietto[1], R Wickert[1], JA Hoher[3], C Trevisan[2], SFM Brodt[1], LG Borges[2], K Hartmann[1], K Pinto[1], F Callefe[1], JE Barth[1], P Balzano[1], FAC Alves[1]
1 Intensive Care Unit of Hospital Moinhos de Vento – Porto Alegre, Rio Grande do Sul, Brazil; 2 Intensive Care Unit of Hospital de Clínicas – Porto Alegre, Rio Grande do Sul; 3 Complexo Hospitalar da Santa Casa - Poto Alegre, Rio Grande do Sul, Brazil

Background: traditional predictors of successful weaning from mechanical ventilation (MV) have low predictive value. Respiratory muscle fatigue is the most common cause of weaning failure, and is of difficult early detection. Central venous saturation (ScvO2) is a marker of oxygen consumption and could be applied for detection of weaning failure (WF).
Objectives: To evaluate the predictive capacity of ScvO2 detect weaning failure or success.
Methods: prospective observational multicentric clinical study in 3 intensive care units of Porto Alegre, performed from August 2003 to December 2004 on all patients with more than 48h of MV, in the weaning process. Patients were submitted, after inform consent, to spontaneous breathing trial (SBT) during 30 minutes and followed during the next 48h after extubation. All patients had arterial and venous gases analysis, hemodynamic (cardiac rate, systolic and diastolic blood pressure) and ventilatory parameters (respiratory rate, tidal volume, f/VT index and maximal inspiratory pressure) during MV and in the 30th minute of SBT. The outcomes were reintubation and mortality rates. Data are expressed as mean ± SD or percentage.
Results: 63 mechanical ventilated patients were included. Male: 55.5% age: 55.8 ± 18.6 years, APACHE II: 18.2 ± 6.3. Septic shock was the most frequent diagnosis with 50.8% of cases, mortality rate during ICU stay was 22.2%, reintubation rate was 31.7% and the mortality was higher in WF patients (75% vs. 14% p <0.001). ScvO2 at the 30th minute of SBT was lower in WF patients (58.2% ± 7.1 vs. 66.3% ± 5.4, p=0.003). Hemodynamic and mechanic ventilatory parameters were not able to predict WF or mortality. In all patients the PaO2, SaO2 and ScvO2 values dropped at 30thminute of SBT comparing to MV (110.1mmHg ± 39.8 vs. 95.8mmHg ± 28.8, p<0.01; 97% ± 2.4 vs. 95.3% ± 3.7, p<0.001; 68.3% ± 7.3 vs. 64.6% ± 8.6, p<0.001; respectively). WF patients had the most accentuated fall in this parameters (102.1mmHg ± 38.5 vs. 85.8mmHg ± 20.1, p=0.008; 96.9% ± 2.7 vs. 94.2% ± 3.9, p=0.001; 68.2% ± 7.4 vs. 59.5% ± 7.3, p<0,001; respectively).
Conclusion: the reduction of SvcO2 values during SBT was correlated with weaning failure, and it was probably due to increased oxygen consumption of respiratory muscles, not just explained by changes in oxygen offer.

0418 USE OF CONTINUOUS TRACHEAL INSUFLATION OF GASES IN THE ACUTE RESPIRATORY DISTRESS SYNDROME

J Leyria, CA Ardiles, B Stegmuller, J Vecchio, P Insaurralde
Unidad de Terapia Intensiva Adulto.Hospital Zonal Trelew.Dr.Adolfo Margara.Chubut.Argentina

Objective: To describe the effect of the Continuous Tracheal Insufflations of Gases in the decrease of the Pco2 and the enhancing of the pH in patients who have been ventilated under the Strategy of Lung Protection Ventilation and the tolerance of the Permissive Hipercapnea (PH) with Acute Respiratory Distress Syndrome (ARDS).
Material and Method: Prospective Study, in which patients with ARDS have been tested C.E.A from 04/01/2002 to 09/30/2004.
With an escort of Murray of 3 +- 0,5, in the course of its evolution, the PH was tolerated up to a pH point < 7.20 according to the Service List.
To make the CTGI, a probe with an internal diameter of 2,2 mm was introduced inside the endotracheal (ETT)near the carina. This was noticed through x-ray observation.
A T instrument was used as helper between the ETT and the respirator.
The flow was given by a flow meter requiring an average flow of about 7 liters (range 5-9).
An Arterial Blood Sample was taken before and after an hour of the CTGI.
The increase of the plateau pressure caused by the increasing of the final aspiration volume was checked, enlarging the relation I:E.
Results: Five Male Patients, whose average age was 59.4 (range 52-71) were tested.
From the analysis of the Arterial Gasometry done before and one hour after the CTGI we noticed an average decrease of the Pco2 of 18 mmhg (range 0.10-0.21).

Pco2 before CTGI	pH before CTGI	Pco2 first hour after CTGI	pH 1st hour after CTGI
66 mmhg.	7.18	55 mmhg.	7.28
72 mmhg.	7.16	50 mmhg.	7.36
70 mmhg.	7.14	52 mmhg.	7.32
74 mmhg.	7.12	58 mmhg.	7.26
91 mmhg.	7.10	68 mmhg.	7.31

Conclusions: To ventilate under the Lung Protection Strategy, limiting the plateau pressure up to 30 cmho2 in those patients with ARDS. This allows a group of these patients the toleration of the PH reaching pH values under 7.20.
The CTGI seems to be a useful method to wash and clean the dead space, to generate a decrease of the Pco2 and to correct the pH, without using NaHco2 for its correction, continuing with the benefits of the PH.

0419 TREATMENT WITH N-ACETYLCYSTEINE PLUS DEFEROXAMINE PROTECTS HIPPOCAMPUS AGAINST OXIDATIVE STRESS AND PREVENT SHORT- AND LONG-TERM COGNITIVE IMPAIRMENT IN SEPSIS SURVIVORS RATS

MR Martins, A Reinke, C Ritter, RA Machado, S Valvassori, T Barichello, J Quevedo, F Dal-Pizzol
Universidade do Extremo Sul Catarinense, Criciúma, SC, Brazil

Background: Critical illness survivors present long-term cognitive impairment, including problems with memory and learning. Recently, we demonstrated that sepsis survivors from cecal ligation and puncture (CLP) presente short- and long-term cognitive impairment when tested 10 or 30 days after CLP. In addition, we found an increase in lipid peroxidation and protein carbonilation in the hippocampus 6 hs after CLP.
Objectives: Here we have evaluated the effects of a combination of antioxidants (N-acetylcysteine plus deferoxamine) in cognitive deficit and the oxidative damage in the hippocampus of severe sepsis survivors rats
Methods: Male Wistar rats (300-350g) subjected to CLP were treated vehicle with "basic support" (saline at 30 mL/kg 3 and 12 hs after CLP, ceftriaxone at 30 mg/kg and clindamycin at 25 mg/kg every 12 and 8 hs, respectively, up to 48 hs), vehicle with basic support and N-acetylcysteine (20 mg/kg, 3 hrs, 6 hrs, 12 hrs, 18 hrs, and 24 hrs after CLP, subcutaneously) or deferoxamine (20 mg/kg, 3 hrs and 24 hrs after CLP, subcutaneously) or both N-acetylcysteine plus deferoxamine as described above. Sham group received vehicle and basic support. Ten or 30 days aftre CLP, survivors rats were eparately submitted to 3 classical behavioral tasks to evaluate learning and memory: inhibitory avoidance task (IA), continuous multiple-trials step-down inhibitory avoidance task (CMSIA) and habituation to an open-field (OP). The oxidative damage, assessed by the thiobarbituric acid reactive species (TBARS) and the protein carbonyl assays, were performed in the hippocampus 6 hs after surgerical procedures.
Results: In the IA, all groups presented an aversive memory impairmente compared to sham group, except the group treated with basic support and NAC pus DFX, in which, there were not significant difference compared to sham. The same results were observed in the CMSIA learning performance. In the OP, only basic support and NAC plus DFX treatment prevent habituation memory impairment observed in all other groups compared to sham. These results were observed in both 10 and 30 days after CLP. In accordance to behavioral outcomes, we found that hippocampus were protected against oxidative damage only in the basic support and NAC plus DFX treatment, in both parameters assessed.
Conclusions: Our data provide the first experimental domonstration that N-acetylcysteine plus deferoxamine prevent short- and long-term cognitive impairment in survivors rats from CLP-induced sepsis, suggesting a major role of oxidative stress in late cognitive impairment in sepsis survivors. These, together with our previous results, demonstrated that besides a positive effect upon mortality, NAC plus DFX could attenuate late sequelae observed in sepsis survivors.

0421 CONTINUOUS SUCCESSFUL BLIND PLACEMENT OF NASOJEJUNAL TUBES (NJ) FACILITATED BY TRAINING AND AUDIT

R Meyer[1], S Harrison[2], L Archibald[2], C Elwig[2], M Cooper[2]
1 Imperial College, London, United Kingdom; 2 St.Mary's Hospital, London, United Kingdom

Background: Successful enteral nutrition in critically ill children (CIC) remains a challenge. NJ tubes have been shown to be both safe and well tolerated, but placements of these tubes are notoriously difficult. A blind bedside placement technique was developed on the Paediatric Intensive Care Unit of St.Mary's Hospital in 1999, with a placement success of 96%.
Method: A training program, based on a theoretical placement protocol and a practical demonstration was developed to ensure continuation of successful placement. An audit of a 100 consecutive patients in 2001 as well as 2004 was done to establish NJ placement success and the total number of NJ tubes placed. Placement success was measured by a positive blue dye test, as developed in the procedure in 1999.
Results: The 2001 audit indicated that the NJ route was used in 19% of all cases, with 1% and 80% of patients fed via the parenteral and nasogastric respectively. In 2004, 18% of patients were fed via the NJ route, 3% parenteraly and 79% nasogastricly.Placement success was 95.8% in 2001 and 96.3% in 2004.
Conclusion: The audits of 2001 and 2004 have indicated that the ongoing training program of nursing staff in the blind NJ placement technique has ensured continuous success and that auditing this practice has facilitated the monitoring of the training program.

0422 A NEW INFLAMMATORY PATHWAY RELEVANT TO THE DEVELOPMENT OF SEPSIS: BOMBESIN/GASTRIN-RELEASING PEPTIDE ANTAGONIST AS A THERAPEUTIC TARGET IN SEPSIS TREATMENT

F Dal-Pizzol[1], A Reinke[1], MR Martins[1], C Ritter[1], LP Di Leone[2], R Roesler[2], G Schwartsmann[2]
1 Universidade do Extremo Sul Catarinense, Criciúma, SC, Brazil; 2 Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil

Background: The bombesin/gastrin-releasing peptide (GRP) pathway has several effects on the immune function. GRP modulates the function of lymphocytes, phagocytes and natural killer cells. The therapeutic potential of interventions in the bombesin/GRP pathway to improve survival in inflammatory conditions, mostly sepsis, is still unknown.
Objective: Investigate the inhibition of the bombesin/GRP pathway as an anti-inflammatory strategy for the treatment of sepsis.
Methods: Male Wistar rats 2-3 month old, subjected to CLP as we previously described, were used in this study. The animals were divided into four groups; 1 - sham operated, or 2 - CLP, or 3 - CLP plus "basic support" (saline s.c. at 50ml/kg 6h and 12h after CLP plus ceftriaxone s.c. at 30mg/kg and clindamycin s.c. 25mg/kg every 6h for three days, starting 6h after CLP), and 4 - same as group 3 with RC-3095 s.c at 5mg/kg, once a day for two days, starting 6h after CLP. Blood was drawn from the caudal vein 3, 12 and 24 hours after CLP to the determination of biochemical plasmatic markers (TNF-α, IL-1β, IL-10, AST, ALT, urea, creatinine, amylase, lipase). Twenty four hours after treatment administration the rats were killed by decapitation followed by the harvesting of samples from the blood (by cardiac puncture), lung, liver, kidney, heart, ileum and mesenteric lymph nodes that were immediately stored at -70°C until assayed for thiobarbituric acid reactive species (TBARS) and protein carbonyl formation (as an index of oxidative damage), or were fixed for posterior histophatological analyses. Survival was tested in a separated cohort of animals over a 10-day period.
Results: GRP antagonist reduced TNF-α and IL-1β, but not IL-10, release from macrophages. RC-3095 treatment attenuated circulating TNF-α and IL-1β levels during sepsis and oxidative damage in several organs associated with the septic response. In addition, RC-3095 treatment reduced lung, ileum, kidney, liver and pancreatic damage. RC-3095 administration significantly improved survival when administered with basic support.
Conclusion: Here, we report on the beneficial effects of the selective bombesin/GRP receptor antagonist, RC-3095, in a well-established model for experimental sepsis. This approach may provide advantages that can be exploited for the treatment of inflammatory disorders. RC-3095 modulates the release of pro-inflammatory cytokines (TNF-α and IL-1β) by activated macrophages, leading to a diminution of oxidative damage, inflammatory infiltration and organ dysfunction, thus improving mortality in a clinically relevant model of sepsis.

0423 EXTUBATION: ARE WE KEEPING PATIENT NBM FOR EXCESSIVE PERIODS – PROSPECTIVE AUDITS ON PRACTICE

R Meyer[1], S Harrison[2], L Archibald[2], C Elwig[2], M Cooper[2]
1 Imperial College, London, United Kingdom; 2 St.Mary's Hospital, London, United Kingdom

Background: When preparing the critically ill child (CIC) for extubation, patients are ideally fasted for at least 4 hours prior to extubation. However, in some cases, after a four hour period of fasting, the patient may not be clinically ready for extubation to take place. This is often related to both the sedation as well as other clinical factors.
Published data has supported the continuation of enteral nutrition up to extubation in patients fed via the post pyloric route. In addition to this, continuous monitoring of these patients has proven to be useful in reducing the time patients are kept NBM.
Method: A baseline audit was performed in 2001 on 100 consecutive patients receiving paediatric intensive care, documenting (1) the time the decision was made to extubate, and (2) the time of extubation.
Following this audit an extubation protocol was introduced to our Unit in the form of an algorithm: all patients fed via the post pyloric route, were kept NBM for only 2 hours prior to extubation and those who were fed into the stomach were reviewed every four hours by the clinician to assess if extubation could be safely carried out. Nursing staff and senior clinicians were informed about this new procedure. In 2004 a further 100 consecutive patients were reviewed, following the same 2001 protocol.
Results: The 2001 audit showed that 26% of patients were kept NBM for more than 4 hours, and 13% of patients for more than 8 hours. However, 4% of patients were fasted for more than 24 hours.
Similarly the audit in 2004 indicated, that 28% of patients were kept NBM for more that 4 hours, 19% for more than 8 hours and 6% of patients were kept NBM for more than 24 hours.
Conclusion: These audits indicate that in spite of good clinical evidence, the introduction of procedures to reduce the amount of time that children are fasted to facilitate extubation has no impact on the extubation procedure.
With a prolonged period of fasting, there will be an impact on hospital in-patient stay due to poor nutritional status. This is an area requiring more research in order to provide clinicians with clear evidence on feeding or not feeding during the extubation.

0424 PROGNOSTIC MARKERS IN AN UNSELECTED POPULATION OF PATIENTS ADMITTED TO INTENSIVE CARE UNIT

VS Issa, MFR Silva, JMC Coelho, LU Taniguchi, LM Cruz-Neto, IT Velasco
Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo

Background
Different prognostic scores have been proposed for patients admitted to intensive care units. However, prognostic evaluation of these patients remains a clinical challenge.
Objectives
To analyze the presence of simple clinical prognostic markers in a current unselected population of patients admitted to a medical intensive care unit (ICU).
Methods
We carried a prospective cohort in 340 consecutives admissions in 336 patients in a general intensive care unit of a tertiary teaching hospital from June/2003 through November/2004. The Sequential Organ Failure Assessment (SOFA) score was calculated for evaluation of organ dysfunction. Data analysis was performed with SPSS 12.0.
Results
One hundred eighty one (53.2%) patients were male and 159 (46.8) female, and the mean age was 51.9 (12-88) years; 255 (75%) patients came from the emergency room The initial diagnosis was respiratory failure in 115 (33.8%), cardiovascular failure in 97 (28.5%), neurological in 41 (12.1%), diabetic ketoacidosis in 27 (7.9%), post-operatory status in 21 (6.2%) an others conditions in 39 (11.5%). Median APACHE score was 17 (range 2-45) and 107 patients (31.5%) died in the ICU.
Mortality rate was higher in patients over 65 yrs (48% vs. 24.7%; p<0.001), in patients requiring mechanical ventilation (56.7% vs. 8.4%; p<0.001), and in patients developing infections during the ICU stay (40.5% vs. 28.1%; p=0.02). ICU acquired pneumonia was associated to increased mortality (52.4% vs. 30.1%; p=0.03). In patients admitted from the emergency room, mortality increased when the time elapsed until ICU admission was greater than 24 hours (19.1% vs. 41.6%; p<0.001). This group had higher initial (4.07 vs. 6.65; p<0.001) and maximum SOFA scores (6.0 vs. 9.7; p<0.001) and a higher proportion of patients > 65 yrs (19% vs. 41.6%; p <0.001).
Conclusion
Mortality in the ICU was associated to older age, need of invasive mechanical ventilation, infectious complications and longer time elapsed between arrival in the emergency room and ICU admission. Patients who expend more than 24h before ICU admission characterize a special group that apparently has more intense organ dysfunction and higher mortality. It seems that more attention should be paid to ICU admission delay.

0425 SEQUENTIAL ORGAN FAILURE ASSESSMENT (SOFA) IN PATIENTS SUBMITTED TO MECHANICAL VENTILATION

MFR Silva, VS Issa, LU Taniguchi, LM Cruz-Neto, IT Velasco
Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo

Background
Organ failure scores, such as the Sequential Organ Failure Assessment (SOFA), are able to evaluate changes in patient status over time by describing and quantifying organ dysfunction daily. The SOFA score is composed of scores from six organ systems (respiratory, coagulation, hepatic, cardiovascular, neurologic and renal). Patients submitted to mechanical ventilation have a high mortality rate (only 63.3% of successful weaning, according to Cook et al 2003), frequently due to systemic organ failure and not only respiratory insufficiency.
Objectives
To evaluate the variation of SOFA score in patients submitted to mechanical ventilation in a general intensive care unit of a teaching hospital and its relationship to age, length of stay and mechanical ventilation and complications rate. To determine how the six components of SOFA score vary in older patients and outcome.
Methods
We made an observational nonrandomized study of 340 consecutive patients > 12 years whose length of stay exceeded 48 hours. Data were collected at the time of admission and throughout the ICU stay. No special interventions were done. Data analysis was performed with SPSS 12.0.
Patients who had SOFA score, age, length of stay, length of mechanical ventilation, complications rate (ventilator-associated pneumonia, pneumotorax, accidental extubation, airway obstruction due to edema, cardiac arrest during non-invasive ventilation and tracheoplasty), ICU and hospital discharge recorded properly were included.
Results
A total of 162 patients were submitted to mechanical ventilation in the ICU, but only 50 could be included (112 have some missing data). Thirty died in the ICU (60%). Of the 20 patients discharged, 3 died in the ward, 1 was readmitted and 16 were discharged from hospital (only 13% of the 50 patients studied).
Initial (SOFAini) [mean 6.15 survivors and 8.97 non-survivors], mean (SOFAmean) [3.64 x 8.70] and maximum (SOFAmax) [8.65 x 14.10] SOFA scores were associated with higher ICU mortality (p < 0.05), but not the difference between the first and the second SOFA scores (deltaSOFA) [-0.50 x 0.63]. There was a tendency to SOFAini to be higher in the elderly (cutpoint 65 yrs) (p = 0.089). There was no relation between any SOFA score and complications rate. However, the presence of complications was associated to higher length of stay (in days) (mean 35.11 x 13.25, p<0.001) and longer period of mechanical ventilation (mean 24.89 x 10.19, p<0.001).
The mean neurologic (1.83 survivors x 3.20 non-survivors), cardiovascular (0.69 x 2.24), respiratory (0.89 x 2.17) and renal (0.25 x 1.52) SOFA scores were associated to ICU discharge (p<0.05). Only mean neurologic score was significantly higher in the elderly (3.06 x 2.43).
Conclusions
From the data obtained, one may speculate that components of the SOFA score other than the respiratory are related to death in mechanically ventilated patients. Complications related to respiratory system increased both length of stay and days of mechanical ventilation.

0426 PREDICTIVE VALUE OF 36 HS MICROALBUMINURIA VARIATION IN SEVERELY ILL PATIENTS

JA Vazquez, DN Chiachiara, MC Adducci, JA Aimar, AE Pilipec, P Penone, DR Fenoglietto
SANTOJANNI HOSPITAL

OBJECTIVES: To evaluate the predictive value of variation of microalbuminuria as from the admission to the 36 hs in the development of acute respiratory failure (ARF) , multiple organ failure (MOF) and mortality in severely injured patients (P)
MATERIAL AND METHODS: prospective, observational study in a 12-bed, mixed medicosurgical ICU in a university hospital. Urinary samples for Mi measurement through a Foley urinary catheter were collected at ICU admission and at 36 hs after ICU arrival. The illness severity was assessed by the APACHE II score. The degree of organ dysfunction was assessed using the SOFA score. ARF and SDRA were defined by the parameters of the 1994 consensus conference. P were separated into two groups according to the trend in Mi levels over the first 36 hs: P in group 1 (P1) had increasing Mi levels, and P in group 2 (P2) had decreasing Mi levels. All P included were adults admitted in a 4 months period (april-1, to July-31, 2004). Sixty- two P were excluded due two surgical admission, frank hematuria, presence of chronic renal disease. P receiving nephrotoxic drugs, or remaining in the ICU for <48 hs were also exclude. Urinary samples collected for Mi were isolated and measured by the turbidimetric method.
The results express the microalbuminuria/ urinary creatinine ratio. Stadistical analysis were analised bythe Student's t test for unpaired data.
RESULTS: a total of 65 P were recorded. The demographic data are: age(yr) 56; male 31 p(47,7%); APA II 18±6,9; SOFA 7; SDRA 24p; FOM 48p; Mortality 23p
P-1 included 31 P whose Mi levels increased from 0,34±0,17 to 1,19±1,09
P-2 included 34 P whose Mi levels decreased from 0,72±0,56 to 0,18±0,43
TABLE 1: COMPARISON OF THE TWO GROUPS
GROUP I GROUP II TEST t
Patients (n°) 31 34 ----------
Age (yr) 59 (26-87) 53 (18-87) ----------
Sex (male) 15 16 ----------
APACHE II 21,7±1,14 16,5±1,12 p<0,05
SOFA 9,8 4,38 p<0,05
SDRA 19 (61%) 5 (14,7) p<0,05
FOM 30 (96%) 18 (52%) p<0,05
Mortality 18 (14,7%) 5 (14,7%) p<0,05
CONCLUSIONS : 1.- Trend analysis of Mi excretions over the first 36 hs of an ICU admission may provide a useful means of identifying more critically ill P.
2.- The increased levels of Mi in the 36 hs are in relation with more SDRA, SOFA and mortality.

0427 PLASMA AND PLATELET APHAERESIS TRANSFUSION INCREASE MORTALITY RATE IN PATIENTS WITH APACHE II SCORE BELOW 25 POINTS

GF Vazquez de Anda, C Zuñiga Velazquez, R Pineda, G Rendon Martinez, C Tlapanco, JA Arzate Villafaña
ISSEMyM Medical Center, Metepec, Mexico

Introduction: Transfusion of blood components is a common practice on patients treated in the Intensive Care Unit (ICU). It has been shown that mortality rate increases with blood transfusion.
The aim of this study is to determine the association of blood transfusion and or its components with mortality in patients admitted in the ICU.
Material and Method. From August 2004 to January 2005 we followed patients admitted in the ICU. A special record for blood transfusion and or components per patient was recorded from the first day of ICU to the discharge. Erythrocyte concentrates (EC), fresh frozen plasma (FFP), platelet aphaeresis (AP) and Cryoprecipitate (CRP) were the main variables of the study. Mortality was identified during ICU stay. Blood components administered before ICU were not included in the study. APACHE II score was calculated the next morning of patient arrivals to the ICU. Two Groups of APACHE II were identified: Group 1 patients with APACHE II score less than 25 points and Group 2 patients with more than 25 points. Chi square and Fisher test were used to determine association.
Results: 221 patients were admitted to the ICU during the study period. The General mortality rate was 20.8%. 126 patients did not receive blood or components during ICU stay and the mortality rate for these patients was 14.2 %. 95 patients received blood transfusion and the mortality rate was 29.5% (P=0.006). There were association between the type of component transfused and the mortality. Patients that received FFP had 47.8% mortality compared with patients that did not received transfusion 14.2% (P=0.000). Also patients that received AP had a mortality rate of 53.6% (P=0.000. There were not differences with mortality when EC and CRP were transfused. The amount of units transfused had association with mortality. Patients who received less than 5 units had a mortality rate of 21.4%, from 6 to 10 units transfused, the mortality rate was 29.4% and more than 10 units transfused the mortality rate was 52.4% (P=0.000). Patients with APACHE II score less than 25 points had higher mortality rate with blood transfusion compared with patients without transfusion from the same group. There were not association between patients transfused with not transfused when APACHE II score was higher than 25 points. The higher mortality rate (60%) was observed in patients transfused with FFP and AP with APACHE II score lower than 25 points.
Conclusion: FFP and AP are associated with higher mortality compared with patients without transfusion. The mortality increases when the transfusion is in patients with APACHE II score lower than 25 points.

0428 CURRENT CLINICAL CHARACTERISTICS AND PROGNOSIS OF ELDER PATIENTS ADMITTED TO INTENSIVE CARE UNIT

VS Issa, MFR Silva, JMC Coelho, LU Taniguchi, LM Cruz-Neto, IT Velasco
Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo

Background: The number of elder patients admitted to intensive care units (ICU) is increasingly high. The current clinical characteristics and prognosis of these patients has not been systematically reviewed in unselected series.
Objectives: To analyze the current clinical characteristics and prognosis of patients over 65 years old admitted to a general intensive care unit (ICU) of a teaching hospital.
Methods: We conducted a prospective cohort in 340 consecutives admissions of 336 patients (4 readmissions) from June/2003 through November/2004. The Sequential Organ Failure Assessment (SOFA) score was calculated for evaluation of organ dysfunction. Data analysis was performed with SPSS 12.0. Initial (SOFAini), maximum (SOFAmax) and the difference between the first 2 measures (deltaSOFA) Sequential Organ Failure Assessment (SOFA) scores for evaluation of organ dysfunction. Data analysis was performed with SPSS 12.0.
Results: One hundred eighty one (53.2%) patients were male and 159 (46.8%) female; mean age was 51.9 (12-88) years; the median of APACHE score was 17 (range 2-45) and 107 patients (31.5%) died.
We found 98 (28.8%) patients over 65 yrs [53 were male (54.1%) and 45 female (44.9%)]. Most elder patients (74.5%) came from the emergency room (ER). The most frequent diagnosis at admission was cardiovascular failure [39 (39.8%)], respiratory failure [30 (30.6%)], neurological conditions [11 (11.2%)], post-operative status [9 (9.2%)] and others [9 (9.2%)]. The median of APACHE was 21 (9-45) and mortality rate was 48% in the elderly.
As compared to patients under 65 yrs, elder patients had similar rate of hospital-acquired infections, a tendency to higher frequency of septic shock (20.4% vs. 12.4%, p=0.059) and higher mortality rate (48% vs. 24.8%, p<0.001). Chronic conditions were more frequent in the elderly (71.4% vs. 58.3%, p=0.03), and in this group a higher proportion of patients expended more than 24h to be admitted to the ICU (67.3% vs. 45%, p<0.001). SOFAini, SOFAmax and deltaSOFA scores were significantly higher in patients over 65 yrs (6.5 vs. 4.7, p=0.001; 9.9 vs. 6.9, p<0.001 and 0.35 vs. - 0.2, p=0.04, respectively). Elder patients received an increased number of therapeutic interventions, including invasive mechanical ventilation (64.3% vs. 40.9%, p < 0.001), invasive arterial pressure monitoring (30.6% vs. 19.8%, p=0.032), pulmonary artery catheterization (21.4% vs. 10.3%, p=0.007) and central venous catheterization (73.5 vs. 55.4%, p=0.002). Length of ICU stay was similar in both groups.
Conclusion: Elder patients admitted to ICU have a high mortality rate that may be related to a higher frequency of chronic conditions and more intense organ dysfunction, as measure by SOFA scores. This group of patients frequently requires prompt invasive monitoring. These data should be taken into consideration during the care of patients over 65 years old in the intensive care unit.

0429 EVALUATION OF PROGNOSTIC FACTORS OF PATIENTS WITH SEVERE COMMUNITY ACQUIRED PNEUMONIA ADMITTED TO AN ICU

F Nagel, DL Neves, FS Dias
Hospital São Lucas da PUCRS

BACKGROUND: Severe community-acquired pneumonia (SCAP) is among the most common causes of hospital admission and the main cause for respiratory disease associated mortality.
OBJECTIVE: Evaluate the profile of patients with SCAP admitted to a tertiary level hospital ICU, correlating the findings with morbity and mortality, attempting to identify associated prognostic factors.
METHODS: The study was retrospective, through patient chart review from admissions to the ICU of patients with SCAP in the period from january 1998 to july 2003. The variables collected were: Sex, age, time between hospital admission and ICU admission (ΔT), need for traqueostomy, prevalence and duration of mechanical ventilation (MV), APACHE II score, SOFA score (first day), PORT score (Fine's criteria) and ICU mortality. Exclusion factors were: nosocomial pneumonia (acquired 48h after hospital admission) and those suspected of having massive aspirative pneumonia. Statistical analysis was performed with the use of SPSS 10.0 software package, utilyzing Mann-Whitney test, Pearson correlation, ROC curve construction and analysis through AUC, where applicable.The significance level was set at p< 0.05.
RESULTS: There were 72 consecutive patients evaluated, with a mean age of 55 years, 43.5% were male, mean ?T of 3.6 days, APACHE II score 18.3 ± 8.6, SOFA score 5.4 ± 3.7, duration of MV 7.2 ± 10.2 days and mean PORT score of 120 ± 51. The ICU mortality was 46.8%.
The PORT score presented a good accuracy in predicting mortality in the patients studied (p< 0.001; AUC= 0.85). A total of five patients needed a traqueostomy because of prolonged MV and there was a significant reduction in survival in these patients (p<0.001). Intubation and mechanical ventilation was used in 86% of patients, but the duration of MV did not correlate with mortality (p= 0.78; AUC= 0.52). The time span between hospital and ICU admission (ΔT) had a significant correlation with mortality (p< 0.05). The level of APACHE II and SOFA scores also correlated significantly with mortality (p<0.001).
CONCLUSIONS:
• As previously reported, the PORT score showed a good level of accuracy in predicting mortality in patients with SCAP.
• Duration of mechanical ventilation did not correlate significantly with mortality in this set of patients.
• Need for traqueostomy signals a greater probability of death in this group of patients.
• ΔT influences significantly the mortality in these patients.
• Tools for prediction of mortality (APACHE II) and organ dysfunction (SOFA) are useful in patients with severe community acquired penumonia.

Table 1: Profile of Variables in Non-Survivors and survivors

		PORT	ΔT	Duration of MV	APACHE II	SOFA
Non-Survivors	Mean	152,6	5,2	8,4	23,3	6,7
	D.P.	39,5	16,8	12,6	8,5	4,5
Survivors	Mean	91,4	2,2	6,2	14,0	4,3
	D.P.	42,3	5,1	7,7	6,2	2,6
p		<0.001	<0.05	0.78	<0.001	<0.01

0431 THE ROLE OF IRON IN ALTERING IMMUNITY IN THE FACE OF INFLAMMATION AND INFECTION UTILIZING A MURINE MODEL OF SEPSIS

RJ Fuchs, S Pin, X Xu, ZL Harris
Johns Hopkins University, Baltimore, Maryland, United States of America

To combat bacterial infection, mammalian hosts initiate a cascade of responses designed to limit available iron in serum and tissues. Elevations in ferritin and ceruloplasmin (Cp) occur to maximize iron storage while total iron binding capacity and transferrin saturation decrease to minimize available iron in the serum. The mechanisms behind these attempts to "starve" bacteria of vital iron appear to be both TNF-α and IL-6 mediated. Iron overload in the human host, secondary to nutritional supplementation, hereditary predisposition or therapeutic interventions, exacerbates several infectious diseases. Amongst the hemodialysis patients, several published reports indicate increased infection risk in the presence of iron overload. Mouse models of sepsis, utilizing cecal ligation and puncture (CLP), have revealed increased mortality when mice are supplemented with exogenous iron.
We chose to study the effect of CLP, as a known model of sepsis, on mice lacking ceruloplasmin (Cp-/-) whose phenotype includes a mild anemia, low transferrin saturation, low serum iron and macrophage iron overload. Survival data have been obtained in Cp-/- knockout mice in comparison with Cp+/+ wild-type mice following the induction of intra-abdominal sepsis via CLP. All Cp-/- mice died within 48 hours. Conversely, Cp+/+ mice that underwent surgery on the same day had a significantly different survival curve. Sham animals in each group (Cp-/- and Cp+/+) were killed at 17 days with the remaining Cp+/+ mice. By 36 hours, 50% of the Cp-/- mice had died as compared to 70 hours in Cp+/+ mice. Iron overload in Cp-/- mice was confirmed by direct measurement of the total iron content of organs and with the exception of brain and eye, the tissue iron concentration was twice normal. Pancreatic tissue iron was 2X greater in Cp-/- as compared to Cp+/+ mice, liver tissue iron was 4X greater and cardiac tissue iron was double in the Cp-/- as compared to wild-type mice. To confirm and characterize the "iron profile" in these same mice, hemoglobin (Hgb), serum iron, total iron binding capacity (TIBC) and transferrin saturation were determined. Western blot analysis utilizing a rabbit anti-human polyclonal anti-ceruloplasmin antibody confirmed the ceruloplasmin null phenotype. As a first step in delineating the mechanism of physiological responses to sepsis in this CLP model we measured IL-6 expression in liver tissue. Western blot analysis utilizing a rabbit anti-mouse IL-6 antibody was performed on homogenized hepatic tissue from Cp+/+ and Cp-/- mice post CLP. Macrophages isolated from Cp-/- mice are less uniform in size, have deformed appearance and are less plate adherent in comparison with those of age-matched Cp+/+ mice.
Cp-/- mice had a significant increased mortality as compared to wild-type littermates. Western blot analysis for IL-6 and Cp, and isolated peritoneal macrophages are suggestive of a mechanism. Future experiments will examine macrophage function, role of anemia, and possible regulation by hepcidin, a recently identified regulator of iron homeostasis.

0432 EDUCATION AND TRAINING IN CPR FOR HEALTHCARE PROFESSIONALS: AN EVIDENCE BASED PROCESS

A Gullo, R Sallusti, P Accolla, R Chicco, P Frassanito, D Medica, G Degrassi, C Consales
Department of Perioperative Medicine, Intensive Care and Emergency - Trieste University Hospital - Trieste, Italy

Background
Despite developments by some universities, many continue to fail in providing enough time or attention to train healthcare students in resuscitation. CPR training should be a central constituent of the curriculum for all healthcare students, as they will soon be expected to know how to behave in an emergency situation, regardless of the level they have reached in their practice. Another problem is the need for retraining that should be made every 6-12 months, since the skills that are not used are rapidly forgotten. Even medical personnel not routinely involved in resuscitation lose psychomotor skills as quickly as laypersons.
Methods
Back in 1984, our Department started regular CPR courses directed to young resident anesthesiologists and ICU registered nurses. More recently, following an internal survey of CPR skills knowledge, we discovered that only the 37% of all healthcare providers working in our hospital had followed previous BLS training programs according to national or international guidelines. After these findings, we decided in October 1999 to start a traditional 8-hour BLS training program, endorsed by the School of Medicine and tailored for healthcare students, nurses and physicians attending our hospital. We continued to apply every effort after having updated the teaching materials according to the new ILCOR 2000 guidelines and introduced the use of the pocket mask and the AED, with an eye on the out-of-hospital setting. After about one hour of lecture with the projection of simple and clear static slides showing the core information, the right sequences and actions of CPR-BLS, the rest of the time is dedicated to skills demonstration and hands-on practice, with a 1 teacher/1 manikin/6-8 trainees ratio. A final score for each participant is obtained through a multiple-choice questionnaire and a practice skill test, in order to certify the trainee as BLS/AED provider. The teaching staff includes physicians, trained residents and registered nurses of our Department. The courses are run free of charge for trainees, usually during the weekends, and instructors institutionally employ their free time.
Results
To the end of January 2005 we have trained 598 persons among residents anesthesiologists, doctors in training in medical and surgical different specialties, medical and dental undergraduates and registered nurses, with the 94,7% of participants certified. Interestingly, better results are obtained by resident physicians and ICU registered nurses, tightly followed by undergraduates students, whereas registered nurses from OR performed at the worst (data to be published). Retraining and new instructors programs have already been made up.
Conclusions
Recently, our teaching staff has been committed to publish an illustrated BLS handy manual; the aim is to provide a regular and appropriate resuscitation training for all healthcare professionals of our institution. This process is finalized to maintain highly standardized procedures and efficacy for improving patients' survival and quality of life.

0435 NOSOCOMIAL INFECTIONS IN AN ADULT INTENSIVE CARE UNIT. THREE YEARS OF STUDY

H Caballero, H Bianco, I Ortiz, S Baez, K Ayub, B Figueredo, C Ayala, M Villafañe
Clinics Hospital, Faculty of Medicine of the Asuncion National University. Paraguay

Objectives: To determine the frecuency, clinical, epidemiological and demographic characteristics, and the evolution and mortality predictors of NI in ICU
Methods: An observational, prospective study was conducted in ICU between July 1999 y July 2002. Data were collected from charts and processed with EPI-INFO 2002. Chi square test and RR was used to compare groups, and $p \leq 0,05$ was considered significant.
Results: Of 1407 patients included, 173 (12.3%) had NI and it was found 321 episodes of infections (1.9 per patients). Median age was 50 ±20, women accounted 60.8%. Mean APACHE II. was 19 ±7, SAPS II was 36 ±16, unknown McCABE 34.6%, two or more organic fales 80,6%, septic shock 24,9%. Median days in ICU was 29 ±17,3. There was found 30.5% pneumonias, 28,1% urinary tract infections, 25% central venous catheter (CVC) related infections, 9.4% bloodstreams, 6.5% others. All pneumonias were symptomatic, with mechanical ventilation in 96%, and secondary bloodstream infections in 9.2%. Etiologies founded: polimicrobian 44.9%, Acinetobacter spp 28.8%, P aeruginosa 17.4%, S aureus 16.8%, K pneumoniae 11.4%. Urinary Tract Infections (UTI) were symptomatic in 30%, all with urinary catheter and secondary bloodstream infections in 7.8%. Etiologies founded, polimicrobian 15.6%, Candida sp 49.5%, Enterobacter spp 13.3%, Klebsiella sp 11.4%, E coli 10.4%, P aeruginosa 10.4%. Central venous catheter related infections were symptomatic in 78% with bacteraemia in 17%. Etiologies founded, polimicrobian 18%, Coagulase negative staphylococcus (CNS) 21.4%, Acinetobacter spp 17.3%, S aureus 15.3%. Primary bloodstream infections were symptomatic in 83%. Etiologies founded, polimicrobian 10%, Enterobacter spp 23.5%, Acinetobacter spp 17.6%, S aureus and CNS 11,7% each one. In other infections, surgical site (SSI) accounted for 80.1%. General mortality was 42.7% with 31.8% due to infections. In 78.8% of cases, hospital stage was prolonged. Mortality factors with significance in univariate analysis were APACHE II >15 [RR1.36 (1.01-1.82) p0.03], SAPS II >24 24 [RR1.51 (1.07-2.14) p 0.01], McCABE 3 and 4 [RR1.84 (1.45-2.32) p <0.005], Inmunosuppressor treatment [RR1.58 (1.1-1.24) p0.03], Haemodialysis [RR2.20 (1.78-2.7) p <0.008], symptomatic UTI [RR1.87 (1.16-3.01) p0.01]. In multivariate analysis with logistic regression, McCabe 3 and 4 was the only factor associated with increase mortality [RR3.49 (1.96-6.21) p0.001].
Conclusions: About 1:10 patients in ICU acquired NI. Pneumonia was the most frequent, with gram-negative bacilli involved in most of cases. Candida sp was found in 1:2 UTI, the second infection in frequency. CNS was found in CVC and Enterobacter spp in bloodstream infections. Mortality was high and the only predictor in multivariate was McCabe 3 and 4.

0436 ACCIDENTAL TETANUS: CASE REVIEW FROM A BRAZILIAN UNIVERSITY HOSPITAL

EB Caser, ML Rodrigues, LN Araújo, FA Antunes, L Tcherniakovski
HUCAM, Vitória, ES, Brasil

Background: Notwithstanding its decreasing incidence over last years due to increase in vaccination coverage, tetanus remains as an important public health issue in Brazil once it's a life threatening condition that requires prolonged and intensive care.
Objectives: Describing clinical and epidemiologic profile of patients with diagnosis of tetanus in an intensive care unit on a period of 10 years.
Methods: Medical records of all patients with tetanus admitted in the ICU from an University Hospital between March 1995 and February 2005 were reviewed in this descriptive retrospective study. We analyzed data from anamnesis, immunoglobulin or anti-tetanic serum doses, ICU and total hospitalization period, mechanical ventilation duration, fatality rate and main complications. Also were reviewed statistics from State Health Department on tetanus status.
Results: In the 10 years period from March 1995 to February 2005, eighteen patients (n=18) were admitted in the ICU with the diagnosis of accidental tetanus. Mean age was 49,9 years (19-78) and the majority was male (94,4% - 17). 56,6% (10) were from rural areas and 44,4% (8) from urban. Tetanus wounds were localized in lower extremities in 94,4% (17) and in 53,8% (7) of cases were necessary more than one surgical debridement. The mean incubation period was 9,4 days. Tracheostomy was performed in all patients that required mechanical ventilation (83,3% - 15) and the mean period of ventilation was 20,9 days. Pneumonia was the most common infectious complication, attacking 61,1% (11) of cases. Autonomic dysfunction was detected in 61,1% (11) patients and hypertension (38,8% - 7) and tachycardia (22,2% - 4) were the most common forms (one patient presented cardiac arrest). Fatality rate was 11,1 % (2).
Conclusions: Our data suggests that a high mean age may be related to effective vaccination campaigns directed to new born and infant but deficient ones directed to the age that is most affected. It can also reflect that our region approaches developed countries age profile, where the incidence is larger on older than 60 years. The need of more than one debridement on majority of patients may be related to a poor initial procedure. Since our patient number was too small we can't jump to definitive conclusions.

0438 ORGAN DONATION: A CROSS CANADA PERSPECTIVE OF CRITICAL CARE NURSING PRACTICE

B Budz[1], R Starzomski[2]
1 St. Joseph Hospital, Bellingham, Washington, United States; 2 University of Victoria, School of Nursing, Victoria, British Columbia, Canada

BACKGROUND
The last decade has seen the waiting lists for human organs and tissues grow to proportions resulting in deaths while patients wait for an organ becomes available. Transplant organizations around the world have predicted that the current trend will intensify for at least the first 15 years, tripling the transplant gap by the year 2015. There have been many attempts to explain and deal with the shortage. However, the number of organs available for transplantation in Canada continues to decline. Previous research has indicated that donation could be increased by focusing attention on the events that take place in the hospital around the time a family is given the option of donation, however, there is little Canadian research in this area. Before we can adequately address the issues and concerns raised by the organ shortage, it is important to understand the process of organ donation within critical care units and the vital role of critical care nurses in this process.
METHODS
This was a two-year Canadian multi-centre study utilizing a qualitative approach. The method for this study was a naturalistic inquiry informed by principles of constructivist grounded theory using a multiple perspectives of reality. The goal was to bring perspectives together to tell a story at one point in time. Eight cities were selected who had both transplant and non-transplant programs. At each of these centers focus groups (15) and individual interviews (35) were conducted with critical care nurses by a single research assistant. There were a total of 112 nurse participants with various years of critical care experience.
RESULTS
A qualitative analysis was conducted and five themes were identified. Each theme had sub-content analysis also conducted. The theme included support, process, systematic factors, structure and outcome. Support included the needs of the family, issues from the nurse which were effective and ineffective and the need for an organized program. Process included the need for understanding brain death, how best to do donor identification and donor referral, and challenges around donor maintenance. The request process was also seen as an area requiring development. Systemic factors included time and timing of events and procedures. Cultural diversity was another factor that needed to be considered as well as the present environment being unfamiliar to families. Structure included the need for protocol, policy issues and standards of practice. Finally, the theme of outcomes included personal experiences both positive and negative as well as dealing with moral distress issues.
CONCLUSION
Final analysis is currently being completed. Conclusions from this study will be ready for presentation at the time of the conference. To date the preliminary conclusions indicate that it is necessary to develop and share best practices dealing with organ donation. There is also a strong need to develop procedures and support systems for critical care nurses and the families they serve.

0439 OUTBREAK OF COMMUNITY ACQUIRED MRSA IN URUGUAY ANALYSIS OF PATIENTS ADMITTED IN INTENSIVE CARE

A Soca[1], I Constenla[2], j Pontet[1], O Bertaux[2], S Noveri[1], P Cardinal[4], P Zitto[5], S Infanzón[3], H Bagnulo[2], S Bentancourt[1]
1 Hospital Pasteur; Montevideo, Uruguay; 2 Hospital Maciel; Montevideo, Uruguay; 3 Hospital Militar, Montevideo, Uruguay; 4 CASMU, Montevideo, Uruguay; 5 Hospital Paysandú, Paysandú, Uruguay

Background: In the last decade Methicillin resistant Staphylococcus aureus infections had emerged in the community (CA-MRSA). In Uruguay since 2002, it was isolated in closed communities (jails) and in deficit socioeconomic class population.
Objectives: Evaluate the clinical presentation of communitarian infections, the antibiotic sensibility profile and the outcome of serious CA-MRSA infections in Intensive Care Units (ICU).
Material and Method: This is a retrospective, descriptive study performed in 5 ICU in Uruguay in the period March 2003 – November 2004. We included patients admitted in ICU with isolates of CA-MRSA in the first 48 hours of hospital admission.
Collection data: patronymic, clinical presentation, multiorganic dysfunctions (MOD) underlying diseases, risk factors for MRSA acquisition, isolates, sensibility profile, SAPS II score treatment and discharge condition. We performed a statistic analysis with no parametric test and varianza analysis for an alpha 00.5 level.
Results: We included 33 patients, age 37 ± 17 years. In 18 (54%) there wasn't any underlying disease. The time between the beginning of symptoms and hospital admission was 6 ± 5 days. 7 (21%) had previous trauma, 13 (39%) had a previous consultation and 14 (42%) received antibiotics before hospital admission.
Clinic: all presented fever, white count was 15349 ± 9094/mm3.
Most frequent foci: soft tissues infection 21 (64%), pneumonia 13 (39%) and septic pulmonary embolism (SPE) 8 (24%). Less frequent: meningitis, empyema, and para vertebral and retro peritoneal abscess. In 11 (33%) there was association in the presentation form.
21 patients (63%) presented DOM.
The most frequent dysfunctions: respiratory 16 (48.5%), hemodynamic 15 (45.5%) and renal 11 (36.4%).
The hospital stay was 25 ± 24 days and ICU stay was 18 ± 21 days.
CA-MRAS was isolated in haemocultures 16 (48.5%) soft tissues infections materials 18 (54.5%), tracheal secretions 14 (42%) pleural fluid 5 (15) and CSF 2 (6%).
The sensibility to Clindamycin was 84%, Ciprofloxacin 96%, Gentamicin 96% and 100% to Vancomycin and Trimethoprim-Sulfamethoxazole 49% required surgery and 97% received antibiotics.
Global mortality was 36%. The patients who died (vs. alives) had a shorter stay in ICU (6.3 ± 8 vs. 24.8 ± 24.3 days p: 0.0005) and in hospital (7.7 ± 8.5 vs 35.2 ± 24.2 days p: 0.0001) higher hemodynamic dysfunction (83% vs 19% p: 0.0001); higher respiratory dysfunction (75% vs 33% p: 0.015) and higher SAPS II (49 ± 14 vs 28 ± 14 p: 0.01).
Conclusions: CA-MRSA generates serious infections in young patients with little co morbidity. The most frequent foci are cutaneus and respiratory with high incidence of bacteriemia. The association of foci is frequent. It has susceptibility to different ATB that allows different therapeutic options. It determine a prolonged hospital stay.

0440 INCIDENCE OF HEART RATE LOWER THAN 100 IN PATIENTS WITH SEVERE SEPSIS AND SEPTIC SHOCK AND RELATED FACTORS TO ITS OCCURRENCE

R Sanga, M Park, S Cappi, L Azevedo, L Cruz-Neto
Clinics hospital, medical college of the university of Sao Paulo, Sao Paulo/SP, Brazil

Background/Objectives: Mortality from severe sepsis and septic shock remains high. The normal hemodynamic response in this situation includes tachycardia, usually ≥100 bpm. It´s also known that several factors related to the patient(cardiac disease, age) or to the treatment(use of cathecolamines, sedatives) may lower the heart rate(HR) and compromise the expected increase in cardiac index(CI) seen in this situation which may impair the oxigen supply to the tissues. The objective is to determine the frequency of patients with the diagnosis of severe sepsis or septic shock that present with HR <100 at the admission and after 24h and compare it with the group with HR≥100 with respect to age, APACHE II, mortality and use of dobutamine.
Methods: We retrieved patients from our prospective collected database with the inclusion criteria to obtain their age, APACHE II, mortality and we performed a search in patients archives to find the HR data and the use of dobutamine. Data are presented in mean or median. Continuous variables were analysed with Mann-whitney test and categorical variables were analysed with chi-square.
Results: 95 patients with severe sepsis and septic shock were analysed and 28 had HR<100 at admission and after 24h. The HR was different between the groups in admission(86 x 117,5) p≤0,001 and after 24h(85 x 119)p≤0,001. There was statistical diference between the groups related to age (67 x 53) p≤0,001. There were no differences in APACHE II(19,643 x 16,071) p=0,151 neither in mortality(p=0,875). The use of dobutamine wasn´t different between the groups (p=0,656), but there was a statistical difference between the group with HR <100 at entrance and after 24h and the group with HR <100 at entrance but ≥100 after 24h(p=0,004).
Conclusions: The finding of a relatively low HR in patients with severe sepsis and septic shock is common and it´s more prevalent in older patients. The use of dobutamine may raise the HR to the expected values and may contribute to raise the CI independentely of the effect in contractility. These findings open the door to studies evaluating the use of therapies directed to raise the HR like cathecolamines or the use of pacemakers in refractory cases.

0441 SURVEILLANCE OF VANCOMYCIN RESISTANCE ENTEROCCUS IN ADULT INTENSIVE CARE UNIT

H Bianco, R Ferreira, R Ferreira, K Davalos, S Baez, B Figueredo, G Lird, J Ortellado, C Ayala
Clinics Hospital, Faculty of Medicine of the Asuncion National University. Paraguay

Background: Resistance to vancomycin is extremely rare among bacteria of medical importance, but is now reported with increasing frequency among enterococci.
Objectives: To surveillance the apparition of vancomycin resistance Enterococcus (VRE) in the Intensive Care Unit of Adults (UCIA).
Methods: Prospective study made in patients admitted in UCIA during December of 2002 to November of 2003. It was made rectal swabs at the admission and every seven days during the stay of the patient in UCIA. We made identification test for Entercooccus genus, suspicious VRE were identified with API 20 Strep. The susceptibility testing was performed by the Disk diffusion method for vancomycin (VAN), ampicillin (AMP) and gentamicine high potency disc (120 µg GEH) in agar Mueller Hinton. The minimal inhibitory concentration (MIC) was performed for VAN by the E-test method. Results were interpreted with guidelines established through the NCCLS.
Results: In 265 patients we made 445 cultures, 172 (38.65%) Enterococcus sp strains were isolated. The amounts of cultures per patients were: 2 cultures in 28.78% of the patients, three in 14.39%, four in 9.84%, five in 6.81%, six in 4.92% and more than six in 6.06%. There were not findings of resistant to VAN, but intermedia susceptibility in seven strains (1 E faecalis, 1 E. faecium, 2 E. gallinarum, 3 E. casseliflavus), all these strains were susceptibility to GEH and AMP, except 1 E. gallinarum that was resistance to AMP. The resistance of Enterococcus sp to AMP was 19.87% and to GEH 31.25%.
Conclusions: There was not found resistant to VAN, but it was register strains of E. faecalis and E. faecium with intermediate susceptibility.

0442 EXAMINING THE VALUE OF THE TRAUMA AND INJURY SEVERITY SCORE AS A QUALITY ASSURANCE TOOL

LM Aitken, J Lang
The University of Queensland, Brisbane, Queensland, Australia

Background/Objectives: The Trauma and Injury Severity Score (TRISS) is used for predicting mortality in the trauma population. Despite extensive validation of the accuracy of TRISS in predicting mortality there are recognised limitations in the reliability of the model. This study was developed to determine the benefit of TRISS in identifying cases appropriate for quality assurance review.
Methods: All patients who were entered on the Queensland Trauma Registry database, had data available to calculate TRISS and died during hospitalisation in 2003 were examined. Patients were considered to have suffered an 'unexpected death' if their TRISS was 0.50 or greater on admission to the hospital that provided their definitive care. Patients with a TRISS of less than 0.50 who died were considered to have suffered an 'expected death'. Demographic, injury and treatment characteristics were compared between each of these groups.
Results: Ninety-eight patients met the criteria for inclusion in this study. These patients represented 45% of those who died during 2003, the remaining 55% did not have TRISS available, generally because either the Glasgow Coma Score (GCS) or blood pressure was not recorded on admission. Sixty-seven of these patients experienced an 'unexpected death' while 31 experienced an 'expected death'. Within the 'unexpected death' cohort there were 43 patients with an ISS ≥ 16, while 24 patients had an ISS < 16. The 'unexpected death' group was older, suffered fewer injuries of lower velocity, were triaged to a lower category and were more likely to die in a ward rather than the emergency department or ICU than the 'expected death' group. When comparing the two subgroups within the 'unexpected death' cohort, patients with ISS < 16 were older, were less likely to be admitted to ICU, spent longer in hospital, were more likely to have been referred from another hospital or a nursing home and most likely to have a GCS of 13 – 15 on admission.
Conclusions: There is a group of trauma patients who are not recognised as having life threatening injuries. Identification of these patients through examination of the 'unexpected deaths' using TRISS methodology has allowed identification of the demographic and injury characteristics that are not usually recognised as being life threatening. The impact of these characteristics should be incorporated into practice guidelines and educational programs.

0443 ANTIBIOTIC RESISTANCE REDUCTION AMONG SEVERELY HEAD INJURED PATIENTS. PRELIMINARY RETROSPECTIVE ANALYSIS OF "PNEUMONIA PREVENTION" PROTOCOL IMPACT

C Compagnone, F Tagliaferri, R Gaio, M Ravaldini, C Turrini, G Nori, L Targa, A Chieregato
M. Bufalini Hospital, Cesena, Italy

Background: Antibiotic resistance is a major sanitary problem in intensive care unit. The implementation of infection-control strategies is considered the principal alternative to reduce the clinic impact of multi-resistant infections. However, there is not a wide consensus or definition of standard strategies.
Objective: The main objective was to compare the incidence of respiratory infection by multi-resistant Gram-negative bacteria and methicillin-resistant Staphilococcus aureus between two groups of head injured patients. The first group treated without an antibiotic protocol and the second one treated according to the "pneumonia prevention" protocol.
Methods: We retrospectively analyzed the incidence of pneumonia in patients with severe traumatic brain injury. The analysis was performed in three different time periods. The first one with no antibiotic protocol in 1996 and the other two with "pneumonia prevention" protocol in 2000 and in 2003. A total of 90 patients have been included in the study (30 consecutive patients for each group). The treatment protocol consisted in restrictive antibiotic policy, improving clearance of bronchial secretions, passive and active patient mobilization and early tracheostomy. A clinical pulmonary infection score (CPIS) higher of 6 was considerate positive for pneumonia. The ISS, SAPS II, GCS and pupillary abnormality were documented.
Results: 82, 81 and 70 patients with severe head injury were admitted in our ICU in 1996, in 2000 and 2003, respectively. 90 patients have been analysed and 12 patients were excluded for incomplete clinical documentation. The mean age of the studied patients was 45.1±21.1. 72% were males. Median GCS was 5 (IRQ 4). We did not found significant differences in age, ISS score, SAPS II score, GCS and pupillary abnormality, among analysed periods. The perceptual of positive CPIS score was 86% in 1996, 77% in 2000 and 37% in 2003. The incidence of multi-antimicrobial-resistant positive colture was 43%, 17% and 7%, in 1996, 2000 and 2003, respectively.
Conclusions: In our population, a neuro-intensive care, a protocol based in a restrictive antibiotic policy, early tracheostomy and accurate clearance of bronchial secretions, was associated with a decrease incidence of multi-resistance respiratory infection.

0445 DEVELOPMENT AND EVALUATION OF A WEB-ENABLED COMMUNICATION PLATFORM FOR A NATIONAL INTENSIVE CARE NURSE SKILL-MATCHING TO PATIENT ACUITY STUDY

A Rischbieth
The University of Adelaide Clinical Nursing, Adelaide, South Australia, Australia

Background: No study has identified a national description of intensive care nurse skill-matching practices in Australian intensive care units (ICUs). Although there is substantive literature regarding nurse skill mix and resource utilisation, there is a paucity of evidence related to matching nurse skill to patient acuity in ICU.
Objectives: To design a web-enabled communication platform and innovative survey tools prior to commencement of a national primary multi-centre study on intensive care skill-matching practices. Because 59 ICU nurse managers (NUMS) from all Level 3 Australian ICUs, and more than 700 shift leader ICU nurse clinicians (SLNs), were anticipated to participate in this study, development of a web-enabled system was considered to optimise study rigour, recruitment and data management.
Method: Design features of the web-enabled system included: simplicity of use, participant anonymity and security, overall functionality, timeliness of data entry and analysis, clarity of questions, ease of point-of-access, and ability for electronic or hard copy data submission.
The Intensive Care Skill Matching Study (ICSMS) website was built with a combination of technologies to optimise delivery of content, interactivity and data integrity. It is served off a Linux server running Apache and Tomcat. The data was stored and accessed using SQL and Microsoft SQL Server 2000. The site was driven by HTML and Java, using both Java Server Pages (JSP) and Class/Servlet technology. An autoform was created to allow for hard copy data entry.
So as not to affect the primary study recruitment, pilot participants from one Australian state were selected if they had worked in a Level 3 ICU within the past twelve months but were no longer working in one. There were 11 NUM and 10 SLN participants in the pilot study of the developed system. Empirical and descriptive data were collected.
Results: The database within the platform provided unformatted data with associated look-up tables to allow data analysis using statistical software. The pilot results identified intensive care nurse skill assessment criteria and systems, patient acuity assessment, and skill-matching practices in ICU, including systems to quantify agency nurse skill level. Results demonstrated positive outcomes in participant anonymity and security, functionality, timeliness of data entry and analysis, clarity of questions, ease of point-of-access, and ability for both electronic and hard copy data submission. Following pilot evaluation minor modifications were subsequently made to the web-enabled platform and survey tools.
Conclusion: A recommendation to adopt the modified web-enabled communication platform and survey tools for the ICSMS study was made, and this study commenced shortly afterwards in March 2005. Critical pilot evaluation of study methods and innovative tools to be used in multi-centre research is highly recommended in the interests of research study rigour, design, participant recruitment, and data management.

0446 NASAL CARRIERS OF STAPHYLOCOCCUS AUREUS IN HOSPITAL STAFF OF ADULT INTENSIVE CARE UNIT

H Bianco, K Davalos, R Ferreira, S Baez, B Figueredo, C Ayala, J Ortellado, J Plans
Clinics Hospital, Faculty of Medicine of the Asuncion National University. Paraguay

Background: S. aureus is one of the most common causes of hospital acquired infection due to nasal carriers.
Objectives: To determine the frequency of nasal carriers of S. aureus, antimicrobial susceptibility and risk factors of the carrying in Health staff of Intensive Care Units of Adults (ICUA).
Methods: Prospective observational study of transverse cut, made in November of 2002 in Health staff of ICUA from four public Hospitals (Clinical Hospital, National Hospital, Social Preventive Institute and Medical Emergency Center). Variable: age, sex, hospitality labor, and admission, preview surgery, preview use of antibiotics and topics corticoids, nasal carrying of S. aureus and antimicrobial susceptibility. It was made nasal swabs to detect carriage of S. aureus in 142 individuals. The isolations were confirmed as S. aureus based on catalase, coagulase and agglutination test.
The susceptibility testing was performed by the Disk diffusion method for methicillin (with 1 µg oxacilin disc), vancomycin (VAN) in agar Mueller Hinton. Results were interpreted with guidelines established through the NCCLS.
Results: It was included 142 persons of the UCIA Health staff. Average age: 32 ± 6.3 years, feminine sex: 78.2% and the distribution by function were: 23.3% doctors, 57.0% nursing and 19.7% assistants. The risk factors of nasal carrying were internment and preview surgery in the last year, in 8.5% and 22.5% respectively; the utilization of systemic antibiotics 46.5% and topics corticoids 11.3%, both were in the last six months. They presented positive culture of S. aureus in 60 people that represent 42.3% of nasal carrying, methicillin resistant S. aureus was 33.3% and non resistant to VAN was found. Risk factors evaluated between carriers and no carries were not significative.
Conclusions: Nasal carriers of S. aureus health staff of ICUA were 42.3%, 33.3% of the strains were methicillin-resistant S. aureus. We didn't found resistance to VAN and risk factors for carriers in this study.

0447 ATYPICAL PRESENTATION OF INFECTIVE ENDOCARDITIS IN THE INTENSIVE CARE UNIT: FIRST CASE REPORT OF EUSTACHIAN VALVE ENDOCARDITIS CAUSED BY KLEBSIELLA PNEUMONIAS

FS Affonso, E França, A Jannuzy, R Hatum, MA Mattos, ME Lugarinho, MF Knibel
São Lucas Hospital, Rio de Janeiro, Brazil

Background: Different ways of infective endocarditis clinical presentation are more often observed in hospitalized patients. The increasing use of indwelling intravascular lines in the intensive care unit (ICU) has resulted in more catheter-related infections, which can be associated with right-sided endocarditis. We present a very rare case of eustachian valve endocarditis diagnosed in the ICU.
Methods: Case report and review of world medical literature concerning other cases of eustachian valve endocarditis searched by MEDLINE.
Results: A 74-year old woman was admitted in our ICU because of sepsis. She was in use of vancomicin for treatment of an orthesis infection and had a central venous catheter placed at the right internal jugular vein. The catheter was removed and his tip was sent for culture. Three samples of blood cultures were obtained. Empirical therapy with piperacilin/tazobactan was started. After 24 hours of therapy she remained with fever and another three samples of blood cultures were collected. She required a tracheal tube and mechanical ventilation. The six samples of blood cultures and the culture of catheter tip grew Klebsiella pneumoniae. A transesophageal echocardiography showed an 8 mm vegetation in the eustachian valve. Amicacin was added to antibiotic therapy. After 24 hours, fever ceased. She weaned from the ventilator after 14 days and finished the treatment in the wards. The eustachian valve is a remnant of the fetal circulatory system, where it directed oxygenated blood from the inferior vena cava through the foramen ovale into the left atrium. Echocardiographically, it is often prominent in children but tends to regress and
involute with age. Although infective endocarditis is fairly common, infection involving the
eustachian valve remains a distinctly rare entity. Only 16 cases were described in the literature, the vast majority caused by Sthaphylococcus aureus and occurred in intravenous drug users. Only three cases were caused by gram-negative bacteria: E. cloacae, E. coli and P. vulgaris. None of these patients were intravenous drug users, but two patients had an indwelling central venous catheter and one had been paced with a VVI system. The present report describes a novel cause of eustachian valve endocarditis in which the causative organism was determined to be Klebsiella pneumoniae. We believed this is the first case of eustachian valve endocarditis caused by Klebsiella pneumoniae in medicine history.
Conclusions: Eustachian valve endocarditis is a rare clinical condition. Even more rare is eustachian valve endocarditis caused by gram-negative bacteria. We suggest that the physician must consider this possibility in patients with clinical suspect endocarditis that are not intravenous drug users and have an indwelling central venous catheter or other intravascular device.

0448 EFFECT OF VENTILATOR-ASSOCIATED PNEUMONIA ON MORTALITY AND MORBIDITY. A MULTICENTER PROSPECTIVE COHORT STUDY

P Desmery, R Valentini, S Giannasi, E Turchetto, D Violi, D Ceraso, P Pratesi, M Deheza, A Lupo, M Emmerich, O Elefante, J Tévez, C Santos, E Capparelli, G Agüero, A Moggi, C Bevilaqua, H Ortiz, J Tuffaro, G Toledo, G Filippa, A Díez, S Gándara, H Jacobo, V Salvloff, J Santopinto, E Manrique, C Cohen, H Bagnulo, R Vandersande, R Negro, A Mazzola, M Barrangú, P Pardo, J Neira, M Fumele, J Alvarez, J Bonelli, P Jimenez, D Intile
Grupo de Estudios Clínicos Multicentricos del Comite de Neumonologia Critica de la Sociedad Argentina de Terapia Intensiva. Argentina

BACKGROUND / STUDY OBJECTIVES: To prospectively identify the occurrence of ventilator-associated pneumonia (VAP) and to determine the influence of VAP on patient outcomes.
METHODS: Design: Prospective multicenter cohort study. Setting: 34 medical ICU from Argentina and Uruguay. Patients: Between April and May 2003 all patients expected to be ventilated for more than 48 hs were prospective followed for the development of VAD. The diagnosis of VAP was based on clinical and microbiologic data and daily Purgin score.
RESULTS: Two hundreds and thirty-four patients receive mechanical ventilation (MV). VAP developed in 60 patients (25.6 %), the density of incidence was 32.56 episodes per 1000 days on MV. The median (P25-P75) time from OTI to VAP was 5 (2 - 8) days. One hundred and ten patients (44,9 %) who received mechanical ventilation died during hospitalization. There was no difference between non-VAP and VAP patients for age (57.3 ± 18.3 and 57.5 ± 19.8 years); SAPS II (43.23 ± 16 and 45.2 ± 16); SOFA (5.35 ± 7.2 and 5,78 ± 4.7). Patients with chronic respiratory failure (6/16), coma (15/41) or neuromuscular disease (3/6) had a higher incidence of VAP that patients with acute respiratory failure (37/169). Eighty-two non-VAP patients died (47.1 %) and twenty-six of the patients that developed VAP (43.3%) died (p=NS), after adjusting for severity of illness no VAP effect was found on mortality. The duration of mechanical ventilation (median, P25 – P75) was increased from 4 (3 – 7) to 11 (6.5 – 17) in patients that developed VAP (p > 0.00001 Mann-Whitney test). Logistic regression analysis demonstrated that after adjusting for coma, SAPS II, age, and cause of respiratory failure the diagnosis of VAP (adjusted odd ratio [AOR] 8.67 (95% CI 4 to 18.6) p=0.0001) was independently associated with prolong mechanical ventilation (more than 5 days).
CONCLUSIONS: An extended period of mechanical ventilation is found in patient that developed VAP. No effect could be found on hospital mortality.

0449 USEFULNESS OF THROMBOELASTOGRAPHY IN CRITICAL CARE PATIENTS

P Gutierrez[1], P Ortega[2], G Mendoza[2], G Campos[1], O Lopez[1], P Gutierrez[1], L Hernandez[3]
1 Oca Hospital Monterrey, Nuevo Leon, Mexico; 2 IMSS HRE 34 MONTERREY, NUEVO LEON, MEXICO; 3 Yollotl Medica Monterrey, Nuevo Leon, Mexico

Background: critical patients, particularly coronary bypass and transplant patients, frequently have hemostatic disorders that can be correlated with changes in thromboelastography curves.Thromboelastography contributes objective information to evaluate potential coagulation disorders in critical care medicine.
Objectives: To correlate changes in thromboelastography curves with conventional cauntitive parameters and their impact on complications in critical patients in a multispecialty intensive care unit.
Methods: Retrospective, descriptive, observational study. We studied 99 patients admitted to the intensive care units of the OCA, Muguerza, IMSS Regional Specialty #34 and San José Hospitals from February 2004 to February 2005, in whom at least one thromboelastography curve was done.
Results: From the total of cases (99), 39 cases had a bleeding event, and 9 of these cases had a second bleeding event. All of the 39 cases had an abnormal thromboelastography with the following results: deficiency and a decrease of coagulation factors, 19 cases; a decrease in number and platelet dysfunction, 9 cases; primary and secondary fibrinolysis 7; hypercoagulability 5; decrease in fibrinogen, 3 cases; other alterations, 3 cases.
6 cases were reoperated because of rebleeding; the diagnosis by thromboelastography was primary and secondary fibrinolysis and platelet dysfunction. The clinical diagnosis were the following: coronary bypass Surgery (71.8%), valve pathology and alterations of cardiac morphology (10.25%), non-cardiac infectious disease (5.12%), posttraumatic liver pathology (2.56%), renal and neurosurgical pathology (2.56 % each), and heart transplant (2.56%). The hospital stay was 2 to 6 days in 22 cases, 7 to 15 days in 12 cases and 16 to 29 days in 5 cases. Of these cases 4 died (3 without relationship to bleeding and one because of disseminated intravascular coagulation). In this study no correlation was observed between conventional cuantitive parameters (prothrombin time, partial thromboplastin time, and platelets)and the result of the thromboelastography curve.
Conclusions: In this study we demonstrate that there is no correlation between quantitative coagulation parameters and thromboelastography.
A correlation exists between thromboelastography and the patients with a bleeding event, since among the patients that bled, thromboelastography was abnormal in all the cases while conventional cuantitive parameters were within normal range.
The fact that 82.0% of the patients with cardiovascular surgery presented bleeding as a complication supports the use of thromboelastography in this group of patients.
Bleeding did not significantly influence hospital stay in the intensive care unit.

0451 EVALUATION OF NONINVASIVE MECHANICAL VENTILATION WITH POSITIVE PRESSURE IN THE MANAGEMENT OF PATIENTS WITH DIFFICULT WEANING FROM INVASIVE MECHANICAL VENTILATION

C Trevisan[2], S Vieira[1], M Blom[2], R Zancanaro[2], L Cassel[2], C Hahn[2], P Pinheiro[2]
1 HCPA - Hospital de Clínicas de Porto Alegre; 2 ULBRA - Universidade Luterana do Brasil

Introduction: Noninvasive Mechanical Ventilation with Positive Pressure (NPPV) has been intensely investigated and frequentely used in patients with acute respiratory failure of several etiologies. However, recent studies have left several open questions with respect to the benefits of its use in invasive mechanical ventilation (IMV) weaning. Ferrer (AJRCCM 2003;168:70-76), in a randomized controled study has shown that NPPV has reduced the IMV use time in patients with persistent failure in weaning, reducing the rates on nosocomial infections, mortality, intensive care unit time and hospital treatment. However some studies did not confirm these results.
Objetive: To evaluate the application of NPPV, using Bilevel mode, in patients with IMV weaning difficulties, characterezed by spontaneous ventilation failure during spontaneous breathing trial (SBT).
Methods: All patients under IMV for more than 48 hours from June 2003 to July 2004 were submitted to an SBT.Those that failed during the first 30 minutes of T Piece Trial, and without contraindications to NPPV, were randomized to be back to IMV (conventional treatment) or to be changed to NPPV. Contraindications to NPPV included: patients with facial trauma or cranial surgery, gastrical surgery or recent esofagy, tracheostomy, respiratory secretion excess, agitation an non-cooperative behaviour were exclued from the experiment. Inclusion in the experiment has been authirized by signed informed consent. Previous to subjecting the patient to SBT we collected a sample of arterial blood gases and a measure of maximal inspiratory pressure(PImax) was taken. During spontaneous ventilation in T Piece, in the first (1st) and thirtieth (30th) minutes measures of the tidal volume (VT), minute volume (Ve), respiratory rate (f), rapid shallow breathing index (f/VT), heart rate and peripheral oxigen saturation were taken. After randomized to IMV or NPPV patients were followed clinically and evaluated concering time of ventilation, complications and mortality rate.
Results: A total of 158 patients were submitted to an SBT. Among patients that failed in T Piece Trial 43 patients were eligible for this study, 21 being studied in NPPV and 22 in IMV. Mean age of the NPPV group was 68 (dp 15,4), and of the IMV group was 59 (dp 17,3). The average of mechanical ventilation previous to exposition to SBT was 7 days for the NPPV and 8 days for the IMV group. The values of Ve, VT, and PImax were similar in both groups, in the (1st) and 30th minute of ventilation in T Piece. The average ventilation support use time, after failure in T Piece was 2 days for the NPPV group and 9 days for the IMV group, with statistical significance ($p< 0,05$). Total mortality was 25,6% (4 patients in IMV and 7 patients in NPPV, ns).Considering the total number of complications, NPPV had protective effect (RR 0.205; CI 0.068-0.611).
Conclusions: From these preliinary data, we believe that NPPV could be an effective treatment for patients presenting difficulties in weaning from mechanical ventilation.

0452 DURATION OF INFLATION DURING ALVEOLAR RECRUITMENT: MECHANICAL AND HISTOLOGICAL EFFECTS

WA Zin, RS Contador, CSN Baez, DS Xisto, MCE Santana, DS Faffe, PRM Rocco
Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

Background: Reversal of alveolar collapse and avoidance of ventilator-induced lung injury are two important goals of lung-protective ventilation in acute lung injury (ALI). Recruitment maneuvers were effective in reversing atelectasis resulting from constant volume ventilation during anesthesia or in the postoperative setting. However, recruitment maneuvers were found ineffective or only transiently effective as a recruitment method in the lung with ARDS. According to experimental and human studies, opening collapsed alveoli depends not only on the inflating pressure but also on the time of pressure sustained. Thus for a recruitment maneuver to be effective in an ARDS lung, this physical term needs to be incorporated into it.
Objectives: We tested the hypothesis that the duration of inflation is important to alveolar recruitment both in healthy lungs with atelectasis and acute lung injury.
Methods: Recruitment maneuver was applied to a model of paraquat-induced acute lung injury and to healthy rats with induced atelectasis (ATEL). Recruitment was done by using 40 cmH2O CPAP for 40 or 120 s. Atelectasis was generated by inflating a sphygmomanometer around the thorax. Lung resistive and viscoelastic pressures, and static elastance were computed before and immediately after recruitment. Lungs were prepared for histology.
Results: All mechanical parameters increased similarly in both groups. In ATEL group, lung mechanics returned to control values after recruitment maneuvers independently of the duration of inflation. The alveolar units expanded uniformly in 40-s-long inflations but overinflated at 120 s. In acute lung injury group static elastance and viscoelastic pressure decreased to normal values after 40 or 120 s, but resistive pressure decreased only at 120 s. ALI alveoli expanded differently: there were overinflated areas with alveolar ducts dilated, while other regions required higher pressures to open up.
Conclusion: Depending on the etiology of atelectasis the duration of inflation acts differently in alveolar recruitment.
Supported by: PRONEX-MCT, PRONEX-FAPERJ, CNPq, FAPERJ

0453 REFUSED PATIENTS IN INTENSIVE CARE UNIT

H Bianco, F Ferreira, F Romero, S Baez, B Figueredo, C Ayala, J Sartori
Clinics Hospital, Faculty of Medicine of the Asuncion National University. Paraguay

Objectives: To determine factors associated with refusing Intensive Care Unit (ICU) admission and identify general features and outcome of not admitted patients.
Methods: Over a 2 years period, from April 2001 to April 2003, information was collected prospectively on all requests for admission to ICU of a large general hospital. Variables: age, gender, underlying condition, nature of each request, as well as reasons for not admission, availability of beds and ventilators.
Results: During the study period, 1111 patients were appropriately referred to ICU, from these, 19% (n=208) were not admitted. Age average 53 ± 19.4 years, male 64.2%. The major reasons for request ICU admission were: acute respiratory failure (ARF) 25.5% (n=94), unstable hemodynamic condition (UHC) 18.7% (n=59), alteration of consciousness (AC) 18.5% (n=68), hemodynamic monitoring (HM) 14.7% (n=54), postoperative of emergencies surgeries 6% (n=22), sepsis 5.4% (n=20), postoperative recovery of scheduled surgeries 5.16% (n=19) and others 3.5% (n=13). From all patients, 56.7% (n=118) met more that one reason for ICU admission, the most common association was ARF with UHC 7.7% (n=16), followed by ARF, UHC and AC 5.8% (n=12) and HM with UHC 5.3% (n=11). The reasons for refusal were: lack of beds 63% (n=171), lack of mechanical ventilators 26% (n=70), disease without hope of remission 3% (n=8), terminal disease 2.2% (n=6) and others 5.4% (n=16). We also found associations among reasons for refusing patients, the greater was lack of bed with lack of mechanical ventilators 21.6% (n=45). We have data from 21.1% (n=44) of refused patients; from these, 43.2% (n=19) finally admitted to ICU and 90% (n=17) of them died, 36.4% (n=16) died without been admitted, 13.6% (n=6) were discharged, and 6.8% (n=3) were transferred to another hospital.
Conclusion: An important number of patients appropriately referred to ICU were not admitted. Lack of bed and lack of mechanical ventilators were the major reasons for refusing patients. Acute respiratory failure, unstable hemodynamic condition and alteration of consciousness account more among admissions requests.

0455 RISK FACTORS FOR CEREBRAL EDEMA IN CHILDREN WITH DIABETIC KETOACIDOSIS

L Costa, G Lúlio, B Mackevicius, P Cupo, A Carlotti
Hospital das Clínicas - Faculty of Medicine of Ribeirão Preto - University of São Paulo

Background/ Objectives: Cerebral edema (CE) is the most common cause of morbidity and mortality in patients with diabetic ketoacidosis (DKA). The objective of this study was to identify potential risk factors for cerebral edema in children with DKA.
Methods: Retrospective chart review of children with DKA and CE admitted to the Pediatric Intensive Care Unit of Hospital das Clínicas – Faculty of Medicine of Ribeirão Preto of University of São Paulo, from February 1996 to February 2004. The effective plasma osmolality was calculated as (2 x [Na+]) + [Glucose], in mmol/l. Data were expressed as mean ± standard error of the mean.
Results: Cerebral edema occurred in 4 of 280 (1.4%) children who had been hospitalized for DKA during the study period, 4 to 8 (5.2 ± 0.9) hours after the initiation of therapy. Patients' age ranged from 4.7 to 5.9 (5.3 ± 0.3) years. Two children were newly diagnosed diabetics. The volume of fluid and amount of sodium infused from hospital admission to the time of diagnosis of CE were 59 ± 11 ml/kg and 6.9 ± 1.2 mmol/kg respectively. One child received a bolus of isotonic saline (20 ml/kg) over 60 minutes. All patients received an intramuscular bolus of insulin (0.1- 0.2 U/kg), and sodium bicarbonate (3.6 ± 0.4 mmol/kg). All had a fall in effective plasma osmolality during treatment (initial 294 ± 5 mOsm/l vs final 276 ± 3 mOsm/l). One child died and one had severe neurological sequelae.
Conclusions: Cerebral edema in children with DKA is probably multifactorial. Expansion of the intracellular fluid volume due to a decline in effective plasma osmolality and activation of NHE-1 by insulin and bicarbonate and expansion of the extracellular fluid volume associated with infusion of a large volume of saline and a less restrictive blood-brain barrier probably coexist.

0456 SHOULD NATRIURETIC PEPTIDE B-TYPE (BNP) BE USED TO PREDICT WEANING FAILURE IN MECHANICALLY VENTILATED PATIENTS?

S Callas, P Nery, L Pastore, S Sampaio, R Kairalla, G Schettino
Hospital Sírio Libanês, São Paulo, SP, Brazil

Background: Heart failure and pulmonary edema have been implicated as cause for weaning failure in mechanically ventilated patients, however the identification of these conditions could be challenging in critical ill patients. The BNP level has been used to evaluate volemia and cardiac performance in patients with heart failure, but no data has been published about the use BNP to guide weaning in mechanically ventilated patients. Objetive: This study was done to evaluate if BNP level can be useful to predict weaning failure or success in patients mechanically ventilated for more than 48 hours. Methods: Twenty consecutive patients mechanically ventilated for more than 48 hours in a medical/surgical ICU and who were included in our weaning protocol had their BNP level (nl < 100) recorded immediately before a T trial (BNPbaseline), after 30 minutes of spontaneous breath (BNP30) and at 360 minutes after baseline (BNP360). The decision about extubation or reintubation was made by an attending physician not involved in this study and blinded for the BNP level. Weaning failure was defined by the T trial intolerance or need for reintubation in the first 48 hours after extubation. Results: Weaning failure was observed in 5 patients, 2 who failed during T trial and 3 who were extubated but needed reintubation within 48 hours. BNPbaseline was greater in the failure group when compared with the success group (760.8 ± 246.3 vs. 350.4 ± 86.1 respectively, p= 0.043), but BNP30 (887.8 ± 270.9 vs. 421.4 ± 121.9, p=0.09) and BNP360 (478.7 ± 251.0 vs. 440.3 ± 99.1) were not different in both groups. BNPbaseline (1315.5 ± 335.5 vs. 365.5 ± 73.4, p=0.001) and BNP30 (1464.5 ± 374.5 vs. 434.4 ± 103.5, p= 0.007) were higher in patients who failed T trial compared to those who tolerated this test. BNP did not change throughout time (BNPbaseline vs. BNP30 vs. BNP360) for patients who failed or succeed. Conclusion: BNP recorded before a T trial can be helpful to predict weaning outcome in patients mechanically ventilated for more than 48 hours.

0457 THE EFFECTS OF DEXMEDETOMIDINE ON RESPIRATORY MECHANICS, CONTROL OF BREATHING, AND LUNG HISTOLOGY IN RATS

PRM Rocco, FC Fernandes, HC Ferreira, VR Cagido, GMC Carvalho, WA Zin
Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

Background: Dexmedetomidine is a highly selective α2-adrenoceptor agonist with sedative, analgesic, and anxiolytic activity. Dexmedetomidine is administered by continuous intravenous infusion and is indicated for sedation of initially intubated and mechanically ventilated patients during treatment in an intensive care setting. Hitherto, no study specifically relates the effects of dexmedetomidine on respiratory mechanics and lung histology.
Objectives: The aim of the present study was to evaluate the effects of dexmedetomidine on respiratory mechanics in normal rats, and to correlate these parameters with lung histology to define the sites of action of dexmedetomidine. Furthermore, in spontaneously breathing rats the parameters related to the control of breathing and arterial blood gases were analyzed.
Methods: Twelve adult male Wistar rats were randomly assigned into two groups of six animals each: control and dexmedetomidine. In control group the animals were sedated (diazepam, 5 mg, ip) and anesthetized with pentobarbital sodium (20 mg/kg, ip) and the rats of the dexmedetomidine group received dexmedetomidine (250 µg/kg ip followed by intravenous infusion of 0.5 µg/kg/h).
Results: All lung mechanical and morphometrical (fraction of area of alveolar collapse and airway diameter) parameters were similar in both groups. The administration of dexmedetomidine was associated with significantly longer inspiratory and expiratory times than those gathered during pentobarbital sodium anesthesia. Dexmedetomidine increased tidal volume, diminished breathing frequency, yielding reduced minute ventilation. PaO2 decreased and PaCO2 increased in dexmedetomidine group [83 ± 5 mmHg and 51 ± 5 mmHg vs 99 ± 5 mmHg and 37 ± 2 mmHg (control)]. Dexmedetomidine reduced significantly heart rate [267 ± 19 bpm vs 372 ± 13 bpm (control)] (p=0.001).
Conclusion: Intravenous administration of dexmedetomidine in clinically relevant doses did not change respiratory mechanical parameters and lung histology, but induce ventilatory depression leading to hypoxemia and hypercapnia.
Supported by: PRONEX-MCT, PRONEX-FAPERJ, CNPq, FAPERJ

0458 IMPLEMENTATION OF AN EVIDENCE-BASED GUIDELINE FOR GENERAL CARE AND PREVENTION OF VENTILATOR–ASSOCIATED PNEUMONIA ON THE OUTCOME OF PATIENTS DURING MECHANICAL VENTILATION: A MULTICENTER PRE-POST STUDY

P Desmery, R Valentini, S Giannasi, E Turchetto, D Violi, D Ceraso, P Pratesi, J Alvarez, M Deheza, A Lupo, M Emmerich, O Elefante, J Tévez, C Santos, E Capparelli, G Agüero, A Moggi, G Toledo, A Díez, S Gándara, H Jacobo, V Salvloff, J Santopinto, V Torres, H Bagnulo, R Vandersande, A Mazzola, M Barrangú, M Fumele, J Neira, P Pardo, A Gómez, E Estenssoro, D Intile
Grupo de Estudios Clínicos Multicentricos del Comite de Neumonologia Critica de la Sociedad Argentina de Terapia Intensiva. Argentina

BACKGROUND / OBJECTIVE: Ventilator-associated pneumonia (VAP) is a serious complication of critical illness, conferring increased morbidity and extending the duration of mechanical ventilation. Many interventions have been studied to reduce the risk of VAP. The objective of this study is to evaluate the effect on days of mechanical ventilation, incidence of VAP and hospital mortality of a external guideline for the prevention of VAP and general patient care during mechanical ventilation.
METHODS: Design: prospective multicenter pre and post guideline implementation clinical trial. Setting: 21 ICU from Argentina. (five teaching and 16 community hospitals). Patients: All patients expected to be ventilated for more than 48 hs. were prospective followed. Pre-guideline (Pre-GL) cohort took place on May 2003 and the post-guideline (Post-GL) on November 2003. Intervention: Seven simple interventions were simultaneously applied: semi recumbent position, daily sedation interruption or adjust sedation, early nutrition, adequate airway and circuit management, pharmacological prevention of GI bleeding and thromboembolic diseases and prevention of skin ulcers. The units received three print copies of the guideline, education material and checklist sheets.
RESULTS: Four hundreds and thirty-four patients were included 233 in the Pre-GL period and 201 after the guideline was applied. In the first period most of the patients receive adequate: prevention for GI bleeding and DVT, nutritional support and airway / circuit management (93,78 and 64 % respectively) but only 46 % were in semi recumbent position and 22 % had adequate sedation management. There were no significant differences between groups of patients in age (57.4 ± 18.5 vs. 55,3 ± 18), sex, diagnosis groups, and SAPS II (36 ± 15.4 vs. 33.7 ± 15.7). No difference in the incidence of the first VAP episode was found: Pre-GL (39,6 episode per 1000 ventilator-days [95% CI 31 to 50]) and Post-GL cohort (34.83 episode per 1000 ventilator-days [95% CI 25 to 47]). The comparison between the cohorts (Pre-GL vs Post-GL) for others the endpoints were: Patients with VAP: 64 / 233 (27.4%) vs. 44/201 (21.9 %) (p = 0.23); hospital mortality: 110 /233 (47.4 %) vs. 82 / 201 (40.8 %) (p = 0.18) and days on mechanical ventilation (median, P25 – P75): 5 P25:3 – P75: 10 days vs. 4 P25:2 – P75: 8 (p = 0.027)
CONCLUSION: The multiple-intervention external clinical practice guideline resulted in a decrease in the duration of mechanical ventilation. No significant effect was observed on mortality and VAP incidence.

0459 OUTCOMES OF PREMATURE NEWBORNS ACCORDING TO THE TYPE OF RESPIRATORY CARE ADMINISTERED ON THE FIRST 24 HOURS OF LIFE

SA Pereira, LS Ishiki, SH Murakami, G Castro, MS Nascimento, PN Dellavia
Neonatal Intensive Care Unit - Albert Einstein Hospital

Introduction: With the advance of technology in the NICU there has been a better outcome of newborn prematures. Respiratory support plays a key role in this scenario.
There are many techniques for respiratory care of the newborn premature. All of them have the main objective to reduce the work of breathing.
Objective: The aim of our study was to compare the type of respiratory care given in the first 24h with the outcome in the NICU.
We studied 39 newborns admitted to our NICU with gestacional age younger 34 weeks. Clinical data included gestational age (GA); birth weight (BW); Silverman-Andersen score (SAS); arterial blood gases (Ph, CO2, O2 e HCO3), diagnosis; type of respiratory care administered [oxygen therapy, continuous positive airway pressure (CPAP); orotracheal intubation (OTI); and all outcome records until the baby was weaned to room air.
Results: Regarding the gestational age, 25% were below 30 weeks, 48% were between 30 and 32 and 27% were between 32 and 34 weeks. The most frequent diagnosis was respiratory distress syndrome in 29 patients. All babies had similar SAS and below 6. On the first 24h 50% were submitted to CPAP (Group 1); 25% to oxygen therapy (Group 2) and 25% were intubated (Group 3). At Group 1 36% required intubation on the following 48h but they were all off oxygen therapy before the 8th day of life. In this group all babies that required intubation had a BW = 1500g. (SD = 383g) and GA 32 weeks (SD= 1,6). At Group 2 60% required CPAP on the following 24h and 30% required OTI on the following 48h. The BW was 1300g (SD= 500g) and GA 29 weeks (SD= 12,5). At Group 3 remained mechanically ventilated for a mean of 4 days (1-7 days) and were then kept on CPAP for more 4 days (3-8). They had BW= 1000g (SD = 390g) and GA 28 weeks (2,1). In this group no newborn required reintubation for respiratory distress. There were no significant differences in the arterial blood gases values between three groups (p> 0,05).
Prematures that were kept on oxygen therapy (Group 2) during the first day of life remained on oxygen for a longer period in comparison with the other groups. Those that were submitted to CPAP, and were then intubated, remained intubated for a shorter period in comparison with those that were intubated in the first day of life (Group3).
Prematures of the CPAP group (Group 1) that were weaned to room air received almost 50% less oxygen during the NICU stay in comparison to those of the intubation or oxygen therapy groups.
Conclusion: Our data show that the early use of CPAP in premature babies with a SAS equal or less than 6 can reduce the exposure to oxygen and secondary complications like bronchopulmonary dysplasia. The early use of CPAP could be regarded as a lung protective strategy avoiding the need of intubation or excess oxygen.

0460 CASE REPORT: ACTIVATED RECOMBINANT FACTOR VII IN SEVERE TRAUMA COAGULOPATHY

D González, I Previgliano, G Tisminetzki, L Capdeville, V Grando, V Makanek, H Correa, D Ceraso
Hospital Fernandez - Buenos Aires - Argentina

Background
Activated recombinant factor VII (rFVIIa) has been used in bleeding due to Hemophilia A or B with inhibitors. It usefulness in critical bleeding in patients without coagulopathy is under evaluation.
The objective of this paper is to report a severe abdominal pelvian trauma due to gunshot wound with secondary bleeding disorder treated with rFVIIa.
Method (case report)
A 14 yo male, suffered a self inflicted gun shot wound during an assault that involved small bowel and right iliac artery. He arrived to the emergency room in shock and was resuscitated according Advance Trauma Life Support guidelines. He was conducted to the operating room (OR) where a synthetic patch was applied in the iliac artery and a 10 cm small bowel resection with terminus-terminal anastomosis was performed. Twenty four hours later he was conducted to the OR again due to abdominal hypertension syndrome, a retroperitoneal bleeding was found fixing it with damage control technique (packing). Forty hours after trauma he developed major bleeding on surgical wounds and puncture sites in spite of appropriate hematological support. The patient presented hemorrhagic shock signs so the decision of rFVIIa administration was taken. After two 9.6 mg doses the bleeding signs disappeared.
On the 3rd day after trauma he developed a compartmental syndrome in right leg so he received a new rFVIIa preoperative dose. Arterial and venous flows were present so a fasciotomy was performed. The abdominal cavity was also explored; a 50 cm necrotic small bowel was identified distal to the anastomosis, so a new resection was performed, leaving the abdomen open and cover with a polyurethane mesh.
The patient did not repeat critical bleeding although he was re-operated in several opportunities due to abdominal fistula related complications. He was discharged alive after 105 days without fistulas with the abdominal wound steel open and with oral feed.
Conclusion
rFVIIa is a potential useful tool to be bear in mind during critical bleeding associated with hemorrhagic shock signs.

0461 EVALUATING THE GENERAL KNOWLEDGE OF PHYSICIANS FROM SALVADOR CITY (NORTHEAST BRAZIL) REGARDING TREATMENT OF PATIENTS WITH CARDIAC ARREST

N Filgueiras[1], AM Oliveira[1], AC Bandeira[1], T Delmondes[1], EAA Santos[1], CS Araújo[1], AS Lima Jr[1], A Rabelo Jr[2]
1 Cidade's Hospital; 2 Professor Edgard Santos' s Hospital

Objetives: Evaluate the knowledge which emergency doctors from hospitals in Salvador hold regarding treatment of cardiorespiratory arrest, and relate it to variables such as ACLS, ATLS and FCCS courses, age, sex, medical specialty and others.
Methods: This was a cross-sectional study held between November 2003 and July 2004 in which 305 medical doctors working in emergency wards were evaluated through a closed questionnaire focusing on topics related to the emergency care of cardiorespiratory victims. Doctors also answered questions related to socio-demographic and medical variables. Analysis was done using SAS. For discrete and continuous variables the Chi-Square and Wilcoxon-Mann-Whitney test were performed. A level of 5% was defined as statistically significant.
Results: Age (mean+SD) was 38.0+8.3; male gender, 66.2%; cardiologists, 21.5% (65); significant difference between scores was observed for those professionals with ACLS (14.9±3.0 versus 10.5±3.5 for non-ACLS, p<0.0001), for cardiologists (score 14.1±3.3 versus 11.1±3.7 for non-cardiologists, p<0.0001) and for those professionals with FCCS (14.5±3.1 versus 11.3±3.8 for non-FCCS, p<0.0001). No significant differences were observed with respect to the following variables: age, gender, time since medical graduation, medical residency, and ATLS courses.
Conclusions: Attendance to ACLS and FCCS courses in the past and specialization in cardiology were predictive factors for a better knowledge regarding the treatment of cardiorespiratory arrest victims.

0462 CHEST/RESPIRATORY SYMPTOMS OF CARDIAC TAMPONADE PATIENTS IN JAPAN

Y Ikematsu
Nagoya U

Dyspnea or respiratory distress is the most prevalent symptom of cardiac tamponade patients. However, respiratory/chest symptoms including dyspnea and chest pain manifest at a variety of medical conditions. This study aimed to determine Japanese patients' description of chest/respiratory symptoms related to cardiac tamponade.
Retrospective case series chart review
Sixty-six episodes of cardiac tamponade were found in 56 patients admitted to a university hospital in Japan from 1990 to 2000. Among the 66 cases, forty cases were recorded to have some chest/respiratory symptoms. "Distressed breathing (kokyu ku: kokyu = respiration, ku =distress)" was most frequently found (20). Terms possibly connoted to dyspnea were "oppressive chest sensation (kyoubu appaku kan: kyoubu = chest area, appaku = oppression, kan = sensation)" (4), "orthopnea (kiza kokyu: kiza = right up position, kokyu = respiration)" (7), "distressed feeling in chest (mune ga kurushii: mune = chest, kurushii (distressed)" (5), and "chest discomfort (kyoubu hukai: kyoubu = chest area, hukai: uncomfortable) (2)". Other chest or respiratory symptoms were "chest pain (kyoh tsu: kyoh = chest, tsu =pain)" (11), "cough (seki or gaiso)" (8) and "palpitation (dohki)" (4).
Japanese cardiac tamponade patients complain about their chest/respiratory symptoms in a variety of terms. Some symptoms are difficult to determine whether they have respiratory or cardiac origin. Comparing the findings to symptoms related to other cardiac or respiratory conditions may contribute to clarify definitive symptoms of cardiac tamponade.

0463 TO DIAGNOSE AND THEN TREAT OR TO TREAT AND THEN DIAGNOSE POSSIBLE RELATIVE ADRENAL INSUFFICIENCY IN CRITICALLY ILL PATIENTS?

M Perman, C Loudet, S Ryan, J Butera, L Camputaro, A Gallesio
Adult Intensive Care Service, Hospital Italiano, Buenos Aires, Argentina

OBJECTIVE: To analyze the relationships between plasma cortisol (C), corticotropin stimulation test, therapeutic response to Hydrocortisone (Hy) and severity/outcome parameters in patients (P) with a possible diagnosis of Relative Adrenal Insufficiency (RAI) or Glucocorticoid Receptor Resistance (GRR.
METHODS: Prospective study including P of different etiologies just before the first dose of Hy due to vasopressor resistant hypotension (VRH) Exclusion criteria were: endocrinological diseases, previous corticosteroid use and/or drugs known to induce adrenal dysfunction. Total plasma C was measured (RIA, DP Corp. USA) before (Cb) and after 30' (C30) and 60' (C60) of the IV bolus administration of 250 µg of tetracosactid (Synachten®, Novartis). After the stimulation test, Hy 100 mg IV 3 times a day was indicated unknowing the values of Cb or C30 and C60. Clinical and haemodinamical parameter were registered for 48 hours, as well as outcome ones. It was consider a positive therapeutic response (Hy+) if vasopressors were diminished by 50% in 24 hours and/or withdraw within 48 hours; positive response to stimulation test (ST+) if C30 or C60 increased more than 9 µg/dl from the Cb; low Cb was consider at 2 different levels <18 y <25 µg/dl. Results presented in % or means ± SD. The STATA 7 program was used for "t" test and "chi2" as indicated; significance "p" < 0.05.
RESULTS: 28 patients enrolled: female 53.6%; years 63.7 ± 15.4; septic 42.9%, brain injury 21.1%, tissue injury 25%; APACHE II 18.2 ± 4.8; TISS28 30.9 ± 9.4; SOFA 9.5 ± 2.6; LOS in ICU 19.2± 14.3 days; all P in MV during 17.6 ± 14.5 days; mortality 57.1 %.
The response to Hy was + in 64.3% of the P and Hy- (no therapeutic response) in 35.7%. The response to ST+ in 78.6% of P and ST- (increase less than 9 µg/dl) in 21,4%. No association was observed between + or - response to Hy and ST (p=0.89).
Mortality of Hy+ 50% and of Hy- 70% (p=0.31); mortality of ST+ 75% and of ST- 67% (p= 0.59). No significant associations were observed between response to Hy and ST and the admission or physiopathologic diagnosis.
The Cb were < 18 µg/dl in 32.7% of the P and <25 µg/dl in 50.0%; both groups of P were no significantly associated with Hy and ST + or -, mortality, age, APACHE II and SOFA.
Among the 18 P Hy+, 4 were also ST- (possible RAI = 14.3% of all P) and 14 ST+ (possible GRR = 50% of all P); if also considering Cb < 18 µg/dl for the diagnosis, only 1 P (3.6%) could be diagnosed as RAI. Considering Cb > 18 µg/dl, only in 8 of the 14 P suspected of having GRR could be firmly diagnosed (28.6% of total P)
CONCLUSIONS: The lack of significant associations between Hy response, ST, Cb and prognostic parameters is probably due to the small number of P enrolled up today. The real incidence of RAI in general ICU P seems lower than suspected, at least with this diagnostic tests. In P with VRH it is usually necessary to begin Hy treatment, but seems valuable to do a previous ST in order to better diagnose RAI or the more probable GRR.

0464 SURGICAL TREATMENT OF CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION EXPERIENCE AT ONE SINGLE INSTITUTION

MP Varela Otero, M Peradejordi, D Intile, A Bertolotti, C Gomez, J Abud, P Comignani, R Favaloro
Terapia Intensiva Postquirúrgica. Fundación Favaloro. Argentina

Introduction: The pulmonary thromboendarterectomy (PTE) is one of the effective therapeutical options for CTPH.
Objectives: To analyse the results of a group of patients (p) with pulmonary hypertension due to chronic recurrent pulmonary thromboembolism (PT) who underwent surgery.
Materials and Methods: Beetwen November, 1992, and September, 2004, we performed 21 PTE. The mean age was 46.8 ± 13.9 years and 62% (13) were females. Ninety percent (19p) were in NYHA class III-IV; 47% (10p) with ascites and 38% (8p) anasarca. The presurgical mean PO^2 was 60.1 ± 12 mm Hg.
Seventy one percent had previously had deep vein thrombosis. Before PTE the mean pulmonary pressure (MPAP) was 55.9 ±13.3 mmHg, the pulmonary vascular resistence (PVR) was 1019.2 ±470 dyn/seg/cm^5, the cardiac index (CI) 2.2 ±0.8 l/min/m^2, the right artrial pressure (RA) 12 ±6.1 mm/Hg, and the right ventricular systolic work index (RVSWI) was 17.4 ±8.6.
The PTE was performed with deep hypothermia (17°) and a mean circulatory arrest time of 60 ± 17.2 min.
The length of time of cardopulmonary bypass was 203.5 ± 37.5 min and the mean time of cerebral ischemia was 53.4 ± 17.6 min.
Statistical analysis: The continuous variables were shown as mean and standard deviation and the categorical ones as proportions. The continuous variables were analysed with non parametrics methods comparing the pre and post surgery values with the Wilcoxon test. The Kaplan Meier analysis and the Gehan's Wilcoxon test were used to analyse the overall survival and the in-hospital mortality according to mecanical ventilation length.
Results: The median time of mechanical ventilation (MV) was 63 hs (6-912hs). We saw a significant decrease in MPAP values from 55.9 to 30.2 mm Hg (p 0.0001); PVR from 1019.1 to 241.7 dyn/seg/cm^5 (p.0.00008) and RSWI from 17.4 to 11.4 (p 0.01)
The in-hospital mortality with MV > 72 hours was 28% vs 10% in p with MV < 72 hs. The overall mortality was 22.3%
Conclusions: The PTE is an effective CTPH treatment, with a 144 months overall survival of 77.7% of our patients.

0465 PROGNOSTIC VALUE OF A MULTIPLEX ANALYSIS OF SEVENTEEN DIFFERENT CYTOKINES IN PATIENTS WITH SEPSIS

F Bozza[1], J Salluh[2], E Assis[2], M Soares[3], A Japiassu[1], R Gomes[2], MT Bozza[4], H Castro-Faria-Neto[2], PT Bozza[2]
1 ICU, Hospital Universitário Clementino Fraga Filho, Universidade Federal do Rio de Janeiro; 2 Lab. de Imunofarmacologia, Dep. de Fisiologia e Farmacodinâmica, IOC, Fundação Oswaldo Cruz; 3 ICU, Instituto Nacional de Cancer; 4 Dep. de Imunologia, Instituto de Microbiologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil

Background / Objectives: The current shortage of easily available biomarkers of sepsis represents an important limitation for the stratification of patients in more homogeneous groups concerning pathogenesis and potential therapeutic interventions. Cytokines are key mediators in the pathophysiologic response to an infectious insult and its levels are associated with outcome. However the role of individual cytokines in predicting sepsis outcome is still controversial. New technologies for cytokine quantification are available and among those is a fluorescently dyed microspheres multianalyte technology associated with a two-laser flow cytometry based system (Luminex) that allows multiple analyses simultaneously in a single sample. The aim of the present study was to use the multiplex system to evaluate the performance of 17 simultaneously detected cytokines in predicting the prognosis of patients with severe sepsis.
Methods: Prospective observational study in two medical-surgical critical care units. Plasmatic levels of 17 cytokines (IL-1beta, IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-12, IL-13, IL-17, IFNγ, G-CSF, GM-CSF, MCP-1, MIP-1, TNFα) were analyzed simultaneously by multiplex system.
Results. Thirty-one patients with recent diagnosis of sepsis were prospectively included in this study. From the seventeen measured cytokines, nine cytokines (IL-1, IL-2, IL-4, IL-6, IL-8, IL-10, IFNγ, G-CSF, and MCP-1) were able to discriminate between survivors and non-survivors. Areas under receiver operating characteristic curves (AUROC) curves were calculated to assess the ability of each cytokine levels to discriminate survivors from non-survivors. AUROC for IL-8 had the best performance [AUROC=0.897 (95%CI=0.780-1.014)] and the optimum cutoff level was 148.5pg/ml. IL-1, MCP-1, G-CSF and IL-6 also had good performances with AUROC > 0.75.
Conclusions: Multiplex cytokine assay proved to be timesaving and informative in providing an individual cytokine profile of septic patients. Moreover, our results indicate that this technology might be a useful tool in septic patients stratification

0466 THE CHALLENGE OF INTRODUCING CONTINUOUS ELECTROENCEPHALOGRAPHIC MONITORING TO A GENERAL INTENSIVE CARE UNIT

JL Cook
Princess Alexandra Hospital, Brisbane, Queensland, Australia

Background/Objectives: At Princess Alexandra Hospital (PAH) a review of neurocritical care monitoring approaches was prompted by an expansion in interventional services and increasing neurological admissions. To enhance the management of these patients, senior medical and nursing staff introduced continuous electroencephalographic (CEEG) monitoring. Despite bedside availability, few units in Australia have embraced CEEG technology.
The CEEG patient monitoring unit has an electroencephalographic (EEG) module displaying one or more EEG channels and a numerical measure of EEG power spectrum. The Philips CMS system used at PAH intensive care unit (ICU) displays two EEG waveforms and a continuous spectral array. Barriers to implementation included the cost of purchasing and maintaining the equipment, medical and nursing unfamiliarity with EEG waveforms and interpretation, and clinical scepticism regarding the usefulness of the data obtained. This paper examines strategies to minimise the difficulties associated with the introduction of CEEG monitoring. These strategies should be considered when introducing similar new technologies so that they can be successfully implemented.
The objective of this study is to examine the process of implementation of CEEG as a new technology in a general ICU.
Method: A case study is presented illustrating the application of bedside EEG monitoring to improve the medical and nursing management of a patient with prolonged status epilepticus. Experiential and reflective practice identified strategies to improve clinical integration of the new technology.
Results: As anticipated, the key factors were that effective implementation of CEEG monitoring required a coordinated educational effort, commitment to success and a team approach. When faced with technical difficulties and competing tasks of higher priority in the busy environment of a general ICU, staff became easily disillusioned and disengaged with the new technology, preferring to use established management practices.
Conclusions: This case demonstrates that to achieve effective implementation of new measurement modalities such as CEEG monitoring, barriers to success must be anticipated and addressed, including ongoing education and equipment management issues. Additionally, strategies must be employed to facilitate the inclusion of new technology into existing patterns of clinical care.

0468 ACINETOBACTER MENINGITIS' HIGHLIGHTS

I Previgliano[1], R Reina[2], R Hansen[1], A Toro[1], S Carino[1], G Rey Kelly[1], E Estenssoro[2], S Fonio[1], M Figueroa[1], F Mensa[1], G Ferrara[1], F Pereda[1]
1 Intensive Care Unit and Infectious Diseases – Hospital J. A. Fernandez – Buenos Aires – Argentina; 2 Intensive Care Unit and Infectious Diseases – Hospital San Martin – La Plata – Argentina

Background: Acinetobacter spp is the emerging pathogen in Intensive Care Units (ICU) on the last years. The aim of the study is to assess the main features of Acinetobacter meningitis and it outcome with different therapeutical modalities.
Material and Method: Study design: Prospective database analysis. Setting: University Hospital and University Associated Hospital.
Data collected: age, sex, APACHE_II score, Glasgow Outcome Scale (GOS) at ICU discharge, ICU length of stay, diagnosis, surgical treatment, time from surgical treatment to meningitis, antimicrobial therapy: previous, empirical and definitive, antimicrobial route (intravenous, intratecal or both), bacteriological analysis (cultures, antimicrobial sensibility) and source, ICP catheters placement and cultures. Statistical analysis: Fisher exact test. A $p < 0.05$ was considered significant.
Results: From January 1st 2000 to December 31st 2004 Acinetobacter meningitis (AM) was diagnosed in 35 patients, 25 of them men. Mean APACHE_II score was 22+6, mean time from surgery to meningitis 6+6 days, ICU LOS 47+50 days. Diagnosis: Spontaneous Intracerebral Hemorrhage 14 (40%), Tumors 9 (26%), Subarachnoid Hemorrhage 5 (14%), Traumatic Subdural Hematoma 5 (14%), Cerebellar ischemic stroke 1 (3%) and Infected Shunt Removal 1 (3%). Posterior fosse surgery was involved in 12 cases and 9 Cerebrospinal Fluids (CSF) Fistulas were identified. Acinetobacter spp was found in 11 ICP devices, 33 CSF (14 ventriculostomies, 12 lumbar punctures) and in 2 brain tissue samples. Inadequate empirical therapy was indicated in 88% of cases, but there were no differences in mortality with the adequate ones (RR 1.46 p 0.36). There were also no differences between IV + IT or IV colistin administration (mortality 48% vs. 71%, RR 1.67 p 0.09) probably due to the sample size. GOS is outlined in table 1.

	Number of patients
GOS 1 (death)	21 (60%)
GOS 2	0
GOS 3	6 (17%)
GOS 4	2 (6%)
GOS 5	6 (17%)

Table 1- Glasgow Outcome Scale at ICU discharge
Conclusions: AM was developed in severely ill postoperative neurosurgical patients. Risk factors included: ventriculostomy placement (54%), posterior fosse surgery (34%) and CSF fistula (25%). There were no differences in mortality between appropiate or inappropiate empirical therapy and there was a trend to a benefit for IT colistin treatment. This one should be bear in mind as part of the empirical treatment in patients with the described charactetistics and suspected AM.

0469 COMPARISON BETWEEN STANDARD VIRAL SEROLOGICAL AND NASOPHARYNGEAL SAMPLING ASSAYS WITH MOLECULAR TESTING IN ICU VENTILATED PATIENTS WITH EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

RJ Cameron[1], D De Wit[1], J Ferguson[2], TV Grissell[3], T Welsh[2], PJ Rye[1]
1 Gosford Hospital, PO Box 361, Gosford, NSW 2250, Australia; 2 John Hunter Hospital, Locked Bag 1, Hunter Region Mail Centre, NSW, 2310, Australia; 3 Hunter Medical Research Institute, Locked Bag 1, Hunter Region Mail Centre, NSW, 2310, Australia

Background/Objectives: The aetiology of severe exacerbations of COPD requiring ventilation is often uncertain. We wished to determine how well standard serological titres of nasopharyngeal aspirates (NPA) and posterior pharyngeal swabs (PS) for common viruses Influenza A and B, Adenovirus, Respiratory Syncytial Virus (RSV) and Parainfluenza Viruses 1, 2 and 3 compared with molecular assays.
Methods: 107 ICU ventilated patients age >45years with exacerbation of COPD were studied. Direct viral immunoflourescent assay (DFA) and viral culture (VC) was performed on nasopharyngeal aspirate (NPA) and posterior pharyngeal swab (PPS). Paired viral and atypical pneumonia serology assays were taken on admission and at 3-4 weeks. Polymerase chain reaction (PCR) for common respiratory viruses was assayed using commercially available kits.
Results: The mean age of 67.9 years, mean Apache II score of 20.and mortality of 22.2%. A probable viral aetiology was found in 42.9% of infective episodes. The most common viruses were influenza A and B and RSV. Table 1 shows a summary of viruses found by the various investigative methods The highest capture rate was by PCR of NPA and PS. DFA was useful but not as sensitive and viral culture failed to grow any of the common viruses (except human rhinovirus-not included).
Our study is the first to use PCR to detect viruses in ventilated COPD patients. Viral culture gives the least yield, whilst PCR gives the greatest. One study reported 10% viral culture positivity from bronchoalveolar lavage (BAL) specimens in a group of COPD exacerbation patients while PCR identified a virus in 29%. In another study viral culture and paired serology identified only a 19% viral pathogen load, whereas PCR yields appear consistently higher with a >40% yield in several studies. False PCR positive results can be seen with latent proteins of common respiratory viruses in stable COPD but quantitative real-time PCR may differentiate between latent and active viral exacerbation.
Table 1:Viral incidence by investigative method
Virus PCR Sero DFA Culture
INF A 12 5 8 1
INF B 6 0 0 0
PaINF1 1 2 1 0
PaINF2 2 0 1 0
PaINF3 6 4 4 0
RSV 7 4 4 0
Adeno 0 0 0 0
PCR = Polymerase Chain Reaction, DFA= Direct Immunoflourescence Assay, INF =Influenza, ParaINF= Parainfluenza, RSV = Respiratory Syncytial Virus

0471 BENEFICIAL EFFECTS OF RECRUITMENT MANEUVER DURING PRONE POSITION IN ACUTE LUNG INJURY

ABS Fernandes[1], G Capitanio[2], MBG Oliveira[1], MCE Santana[1], G Rangel[1], MM Morales[1], A Gullo[2], WA Zin[1], PRM Rocco[1]
1 Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; 2 University of Trieste, Trieste, Italy

Background: The use of recruitment maneuvers (RM) has been proposed for acute lung injury as an adjunctive lung-protective strategy to reverse low tidal volume-related derecruitment. However, since the RM itself requires sustained pressures high enough to reach total lung capacity, the RM may cause some damage, related to recruitment/derecruitment of previously collapsed alveoli and/or pulmonary overdistension. Prone positioning may promote lung recruitment by decreasing regional pleural pressure gradients, thereby increasing the transpulmonary pressure.
Objectives: The aim of this study is to verify whether RM during prone positioning could open the alveoli more homogeneously, avoiding the early derecruitment and reducing lung mechanical stress.
Methods: Twenty Wistar rats (200-250 g) were randomly divided into four groups. In control and acute lung injury groups, saline (0.1 mL) and paraquat (25 mg/kg) were intraperitoneally injected. Twenty-four hour after injection, rats were sedated, anesthetized and paralyzed. Animals from each group were divided in two subgroups, according to the position where RM was applied: supine and prone positions. RM (40 cmH2O for 40 seconds) was applied in both groups. After RM, rats were mechanically ventilated with tidal volume of 5 ml/kg, frequency of 80 breaths/min, and PEEP equal to 5 cmH2O for 1 hour. Lung (L) resistive (ΔP1) and viscoelastic (ΔP2) pressures, and static elastance (Est) were computed by the end-inflation occlusion method. Data were obtained before, immediately after the RM, and at each 10 minutes until 1-hour ventilation was achieved. At the end of the experiments, lungs were prepared for histology. Type III procollagen (PCIII) mRNA expression in lung tissue was analyzed by RT-PCR.
Results: Immediately afer recruitment maneuver Est, L, ΔP1,L, and ΔP2,L reduced independently of the position. Lung static elastance returned to baseline values at 20 minutes when RM was done in supine position. However, the animals in prone position did not lose the beneficial effects of RM. These findings were supported by the histological analysis, which showed lower alveolar collapse in the animals in prone in comparison to supine position. RM in supine position increased PCIII mRNA expression, but it was minimized when animals rested in prone position.
Conclusion: Prone position facilitated recruitment of collapsed dorsal units during the application of RM and prevented early derecruitment. In addition, the use of RM during prone positioning reduced type III procollagen expression, being an effective strategy to minimize the potential harm associated to cellular mechanical stress.
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0472 OUTCOME OF BARIATRIC SURGICAL PATIENTS ADMITTED TO ICU

FVC De Marco, ALG Guimarães, WM Imanishi, M Catania, NKG Souza, RK Kikko, PMC Bruno
Hospital Gastroclinica, São José dos Campos, São Paulo, Brazil

Background/Objectives: The problem of obesity has reached epidemic proportions and the number of bariatric procedures is increasing. There are few data about the outcome of these patients in the intensive care environment.The aim of this study was to evaluate the outcome of bariatric surgical patients admitted to ICU. Setting: An 8-bed surgical ICU in a 50-bed private hospital. Methods: From April 2003 to February 2005 we prospectively followed bariatric surgical patients admitted to ICU. Outcome and ICU resource utilization were recorded. Apache II score was calculated. (QuaTI System software database, Dixtal, SP, Brazil). Results: There were 304 patients (240 were female) in 313 consecutive ICU admissions. The mean age was 36.9± 10.9 years. The mean BMI was 44.10 ± 5.2 kg/m^2. Of these patients 302 (99.3%) were admitted in the immediate postoperative period for a primary procedure. 252 patients (82.9%) underwent Roux-en-Y gastric bypass and 52 patients (17.1%) underwent biliopancreatic diversion. In 20 (6.4%) of 313 admissions the length of stay was > 24 hs. APACHE II score was 10.0± 9.2. The mean LOS was 7.8 ±16.8 days. The main reasons for unplanned ICU admissions (n=11) were bowel occlusion (n=2), anastomotic leakage (n=2), gastrointestinal bleeding (n=2) wound infection (n=1), pulmonary embolism (n=1), acute pulmonary edema (n=1), massive atelectasis (n=1) and perforated bowel (n=1). There was need for mechanical ventilation in 22 (7.0%) admissions, pulmonary artery catheter in 02 (0.6%), dialysis therapy in 01(0.3%) and parenteral nutrition in 01(0.3%). Only 3 patients have developed complications (anaphylactic reaction, respiratory acidosis, cetoacidosis) during the immediate postoperative period for a primary procedure (<48 hs) and only 1 has never been discharged from ICU. The 28-day ICU mortality rate was 0.65 % (n=2) and the overall ICU mortality rate was 0.98 % (n=3). Conclusions: Based on these preliminary results, we conclude that bariatric surgical patients in the immediate postoperative period for a primary procedure are very low risk ICU patients.

0473 MODES OF VENTILATION IN BRAZILIAN ICUS

MPCD Damasceno[1], CMN David[1], PCSP Souza[2], P Mello[3], JL Amaral[4], MD Magalhães[5], FS Dias[6]
1 Postgraduate of Intensive Care, UFRJ, Rio de Janeiro, Brazil; 2 Hospital de Clínicas Niterói, Niterói, Rio de Janeiro, Brazil; 3 Hospital São Marcos, Teresina, Piauí, Brazil; 4 Hospital São Paulo, São Paulo, Brazil; 5 Hospital Municipal Miguel Couto, Rio de Janeiro, Brazil; 6 Hospital São Lucas, Porto Alegre, Rio Grande do Sul, Brazil; 7 AMIB, Brazil

BACKGROUND/OBJECTIVES. The use of mechanical ventilation is one of the most important stage in treating patients in ICU, and knowing how this procedure is being managed make us better intensivists physicians. Our purpose in this study was to know how some Brazilian intensivists ventilate their patients.
METHODS. A studie of 1 day prevalence were done in 2002 in 40 ICUs of Brazil. In the questionaire answered by the ICUs, we present here the modes of ventilation used, including the weaning stage, and the diseases that were the reason of the indication of mechanical ventilation.
RESULTS. The study evaluated 396 patients in 489 beds, with 226 patients being in some kind of ventilatory support. Nine patients (9/226) were in non-invasive ventilation. The patients that were in invasive mechanical ventilation (217/226) were distributed as: VCV 65 (65/217), PSV 64 (64/217), PCV 39 (39/217), SIMV + PSV 21 (21/217), SIMV 8 (8/217), and others 20 (20/217). Seventy-four patients (74/226) were in weaning of mechanical ventilation, with PSV being the most used mode (47/74). The causes of admission in mechanical ventilation were Neuromuscular Disease (5/226), COPD (15/226), Coma (46/226), and Acute Respiratory Failure (160/226).
CONCLUSION. More than half of patients admitted in ICUs was in some kind of ventilatory support. While VCV was the most used mode during the mechanical ventilation, PSV was the principal in weaning stage. Acute Respiratory Failure was the main cause of mechanical ventilation's use.

0474 PROGNOSIS OF CIRRHOTICS REQUIRING INTENSIVE CARE WITH UPPER GASTROINTESTINAL BLEEDING

C Hui, S Shaw, E Cholongitas, M Senzolo, D Patch, K Kwong, VN Nikolopoulou, AK Burroughs
Royal Free Hospital, London NW3

Background: A high mortality rate is associated with cirrhotics presenting with upper gastrointestinal bleeding (UGB) and requiring intensive care (ICU). These patients usually present with end-stage liver disease, and have had failed vasoactive/endoscopic therapy and/or other organ failure and complications such as aspiration pneumonia or renal failure. Most ICU scoring systems are derived from populations without many cirrhotics.
Aim: The aim of our study was to identify the risk factors for 6 week mortality and continued bleeding after the first day of admission (refractory UGB) in cirrhotics admitted to ICU, and to compare this with established scoring systems as predictors of mortality in this group.
Patients and methods: 191 cirrhotics with UGB (123 M, mean age: 49.4±11.3 yrs) were consecutively admitted. At admission, 40 variables, including demographic, clinical and laboratory data were recorded. In addition, Child-Pugh (CP), MELD, Apache II and SOFA scores on admission, were compared by ROC curves.
Results: Alcoholic cirrhosis was present in 70%; oesophageal varices caused UGB in 92.1% and oesophageal/duodenal ulcers in 5.2%. Mechanical ventilation and cardiovascular support with inotropes were needed in 93.7% and 78%, respectively; TIPS placement was performed in 33.5%; renal failure and aspiration pneumonia were present in 29.5% and 48.7%, respectively. 51 (27%) had refractory UGB. Mortality at 6 weeks was 57.6% (n=110) due to multiple organ failure in 37.7%. In multivariable analysis, factors independently associated with greater mortality by 6 weeks were: a) at admission: more organ systems failing (<3= 44.5%, ?3= 85.4%), lower FiO2 (p=0.001), higher urea (p<0.001) and aPTT (p=0.013) b) during ICU stay: aspiration pneumonia (p<0.001) and refractory UGB (p<0.001). SOFA had the best predictive accuracy for mortality using ROC curves, compared to Apache II, MELD and CP scores. The admission factors associated with refractory UGB were: lower serum albumin levels (p=0.037), higher INR (p=0.033) and lactate (p=0.018) and use of higher levels of PEEP during mechanical ventilation (p=0.018).
Conclusions: Cirrhotics with UGB needing ICU admission, have a poor outcome due to severe hepatic and extra-hepatic organ failure. There exist independent and statistically significant parameters that can be used as predictors of mortality and refractory bleeding on ICU in this patient group. As expected, those with refractory UGB had a higher mortality rate. These models can act as a guide to the expected outcome on admission to ICU.

0475 QUALITY OF LIFE AFTER DISCHARGE OF ICU: OUR EXPERIENCE

L Vetere, P Farina, L De Janon, P Cueto Quintana, M Arista, S Fini, L Vasta, S Arcieri, A Botbol
Universidad Abierta Interamericana - Hospital Universitario. Buenos Aires - Argentina

OBJECTIVE: To analyze the evolution and changes in quality of life (QOL) of patients, after ICU discharge.
DESING: Prospective, observational, cohort study.
SETTING: Mixed, 9 beds medico-surgical (non coronary) ICU of an university hospital.
METHODS: Over one year period (from September-2003 to August-2004) all patients admited to ICU were assessed using APACHE II, SAPS II and SOFA in the first 24 h after admission. Demographic data, primary diagnosis, length of ICU stay (LOS), hospital LOS, ICU and hospital mortality, were recorded. Six months after ICU admission, with survivors, was carried a telephone interview relating to quality of life (Rivera Fernandez R et al. in Int Care Med 1996,22:1034-1042). The questionnaire included fifteen scored items grouped in three subscales: basic physiological activities (BPA); normal daily activities (NDA); and emotional status (ES).QOL was obtained using pre-admission (baseline) and at 6th month data. On the basis of their initial QOL the patients were classified into four categories, corresponding to the classification asigned by the Glasgow Outcome Scale(GOS).Quantitative data were compared using the Student's "t" test and Pearson correlative test. A "p" values <0.05 were considered statistically significant. The analysis was performed with software package SPSS 11.0.
RESULTS: 446 patients were admitted. 101 patients were ruled out due to ICU LOS <24 h or re-admission. 75 died during ICU stay and 43 died during hospital stay. Of the remaining 227 survivors 30 (13.2%) died before 6th month and 73 did not complete the interview. Cumulative mortality at 6th month was 42.9% (148 patients). Were interviewed 124 patients (54.6%),of these 67(54%) were males and 72(58.1%) non surgical patients. Median age was 59.3±18; median APACHE II 7.8±4.4, median SAPS II 19.6±9, median SOFA 1.1±1.6. Median LOS was: ICU 4.7±3.9, hospital 14.2±14.1. Baseline QOL was 0.81±2.91 and at 6th month was 4.78±5.89 (p<0.0001),111/124 patients (89.6%) were grouped in the 1st category by GOS. Only this group reported increased QOL after six months (0.16±0.37 vs 4.54±5.76).At 6th month, higher (worse) QOL was observed in 78/124 patients(62.4%),of these 19/78 patients increased the score in all three subscales and 59/78 in one or two subscales (p<0.0001),44/124 patients (35.8%)) did not changed QOL and 2/124 patients (1.61%) decreased QOL. The most frequently changes were observed in NDA(83.3%) and ES(66.7%).After six months 13/124 patients(10.5%) were in the 4th GOS category. Correlation between APACHE II (p<0.002) and age (p<0.0001) was observed at 6th month.
CONCLUSION: The cumulative mortality at 6th month was 42.9%.The most of patients belonged to 1st GOS category, 62.4% worsened their QOL after six months but only 24.3% of these patients reported increase in all three subscales. A small number of patients (10.5%) moved to the 4th GOS category after six months. The most changeable domains were NDA and ES.

0476 POSITIVE END EXPIRATORY PRESSURE AND INVERSE RATIO VENTILATION IN PATIENTS WITH TRAUMATIC BRAIN INJURY

SN Nemer[1], CSV Barbas[2], S Machado[1], M Cabral[1], R Gago[1], L Azeredo[1], J Goulart[1], C Coimbra[1], I Seródio[1], L Tabajaras[1], E Farias[1], C Cadilhe[1], L Paraíso[1], PCP Souza[1]
1 Hospital de Clínicas de Niterói, Rio de Janeiro - Brazil; 2 Universidade de São Paulo, São Paulo - Brazil

BACKGROUND / OBJECTIVES: Positive end expiratory pressure (PEEP) and inverse ratio ventilation (IRV) are generally not used in acute respiratory distress syndrome (ARDS) patients in acute phase of brain injury, aiming avoiding increasing intracranial pressure (ICP).
METHODS: Fourteen patients with severe TBI and ARDS were evaluated. Criteria to admission were: acute onset, bilateral chest radiographic infiltrates, pulmonary-capillary wedge pressure < 18 mm Hg, PaO2 / FiO2 ratio < 200 and Glasgow coma scale < 8 with ICP monitorization. ARDS was consequence of polytrauma with pulmonary contusion or gastric aspiration and pneumonia in all patients. During the study, all patients were initially ventilated in pressure control ventilation with PEEP in 5 cm H2O, later with PEEP in 15 cm H2O and finally, with PEEP in 15 cm H2O and IRV (PC-IRV). Each one of these three steps remained 10 minutes. ICP, cerebral perfusion pressure (CPP) and pulse oxygen saturation (SpO2) were monitorized in all patients during the three ventilatory strategies. Fraction of inspired oxygen (FiO2) was kept in 1.0 during the study. Student's T test was used to compare the effects of the three ventilatory strategies on ICP, CPP and SpO2.
RESULTS: The increase of PEEP from 5 cm H2O to 15 cm H2O, increased ICP from 15.54 ± 7.31 to 16.85 ± 7.90 mm Hg (p = 0.0002), decreased CPP from 82.5 ± 15.62 to 79.5 ± 16.75 mm Hg (p = 0.0006) and increased SpO2 from 92.79 ± 3.53 to 94.64 ± 3.46 % (p = 0.0001). PC-IRV with PEEP in 15 cm H2O increased ICP from 16.86 ± 7.90 to 17.79 ± 8.47 mm Hg (p =0.0006), decreased CPP from 79.5 ± 16.75 to 76.43 ± 18.24 mm Hg (p = 0.0002) and increased SpO2 from 94.64 ± 3.46 to 96.71 ± 3.24 % (p = 0.0001).
CONCLUSIONS: Although ICP and CPP have changed significantly after PEEP of 15 cm H2O and PC-IRV, mean values remained in accepted levels, besides SpO2 have improved significantly. Highs levels of PEEP and IRV should be done carefully in patients with brain injury and ARDS, but should be not contraindicated.

0477 INFLAMMATION IN THE INSERTION SITE IS PREDICTIVE OF CATHETER RELATED BLOODSTREAM INFECTION IN CRITICAL PATIENTS WITH CENTRAL VENOUS CATHETER ?

I Porras[1], H Albornoz[1], W Pedreira[2], H Bagnulo[1]
1 Intensive Medicine Department , CASMU2. Montevideo Uruguay; 2 Microbiology Department, CASMU. Montevideo Uruguay

Background: Safdar and Maki (Critical Care Medicine 2002; 30:2632-2635) reported that inflammatory elements (IE) at the insertion site (IS) are not good predictors of catheter colonization or Catheter related Bloodstream Infection (C – related BSIs); nevertheless, their results could not be generalizeable to critical areas where Staph. aureus is the main agent of catheter related infections. Objectives - To study in a Intensive Care Unit (ICU) with high prevalence of Staph. aureus, whether the presence of IE at the IS is predictive of catheter colonization (CC) or C – related BSIs. Methods: We include in a prospectively observacional study patients in those who we suspect a catheter related infection. All patients were admitted to a multipurpose ICU, with noncuffed, nontunneled Central Venous Catheter (CVC) of short permanence. Catheter related infection was suspected in the presence of fever without identifiable source or in the presence of pain and/or purulence at the level of her IS. It was considered: a) Catheter Colonization (CC), count greater than 15 UFC in the semicuantitative culture of catheter-tip; b) C – related BSIs: was confirmed in each case by demonstrating concordance between isolates from the catheter segment and from blood cultures. Results: 114 patients,[age 53.6 years (SD 16,3), 58.2% male, SAPSII 23.2 (SD 14.2), catheter permanence 6.6 days), presented suspect of catheter related infection. Fifthy-two catheters were colonized (45.6%) and there was 10 (8.8%) episodes of C- related BSIs [Staph. Aureus 4, Acinetobacter spp 2, Coagulase- negative Staphylococci. 2, E. Coli 1, Ps. aeruginosa 1]. Sixty – two patients presented inflammatory signs at the IS (purulence 28p, pain 16p, purulence and pain 18); with microorganisms growth at the IS in 35p (56,5%) Among them, 27 (43.5%) had catheter colonization and there was 6 episodes (9,7%) C- related- BSIs (Staph. Aureus 4). Fifty two patients didn´t show IE at the IS; among them 25p (48.1%) had catheter colonization and there was 4 episodes (7,7%) C- related BSIs (1 Echerichia Coli, 1 negative Staph. coagulasa, 1 Acinetobacter spp, 1 Ps. Aureoginosa). The Presence of IE at the IS had a sensitivity, specificity, positive predictive value, negative predictive value for C- related BSIs of 0.1, 0.92, 0.6 and 0.46 respectively. This performance didn't improve if only the presence of purulence was considered. The growth of Staph. aureus at the IS had a sensitivity, specificity, positive predictive value, negative predictive value for Staph. aureus`s C- related BSIs of 0.25, 0.98, 0.75, 0.84 respectively. Conclusions: Local inflammation is not specific neither sensitivity for C- related BSIs. The absence of Staph. aureus at the IS make highly improbable a Staph. aureus`s C- related BSIs.

0478 SEVERE SEPSIS AND SEPTIC SHOCK IN INTENSIVE CARE UNITS. EARLY RESULTS FROM SEPSIS. BRAZILIAN STUDY.

J Sales[1], Cid David[1], P Souza[2], A Fonseca[5], R Hatum[3], S Lima[4], L Osório[6], G Macedo[7], J Verdeal[8], J Castro[11], G Moraes[10], G Aguiar[12], C Coelho[13], C Acra[14], J Passos[15], D Haringer[16]
1 Universidade Federal do Rio de Janeiro, Brazil; 2 Hospital Clínicas Niterói, Rio de Janeiro, Brazil; 3 H. São Lucas, Rio de janeiro, Brazil; 4 H. VOT da Penitência, Rio de Janeiro, Brazil; 5 H. Santa Cruz, Rio de Janeiro, Brazil; 6 H. NorteCor, Rio de Janeiro, Brazil; 7 H. Universitário Sul Fluminense, Vassouras, Rio de Janeiro, Brazil; 8 H. Barra Dor, Rio de Janeiro, Brazil; 9 H. do Amparo, Rio de Janeiro, Brazil; 10 H. Prontocor Lagoa, Rio de Janeiro, Brazil; 11 H. Copa Dor, Rio de Janeiro, Brazil; 12 H. São Vicente de Paulo, Rio de Janeiro, Brazil; 13 H. Naval Marcílio Dias, Rio de Janeiro, Brazil; 14 C. S. Santa Lúcia, Rio de Janeiro, Brazil; 15 H. São João Batista de Macaé, Rio de Janeiro, Brazil; 16 H. M. Lourenço Jorge, Rio de Janeiro, Brazil; 17 H. Clínicas Mário Leone, Rio de Janeiro, Brazil

Background: the sepsis represents the major cause of death in the ICUs all over the world. Many studies had been shown an increasing incidence over time and only a slight reduce in mortality. Many new treatment strategies are arising and we should know our incidence of sepsis and features.
Methods: we conducted a prospective cohort study in 50 hospitals of all regions of Brazil. The patients who were admitted or who developed sepsis during the month of September, 2003 were enrolled. They were followed until the 28th day or less according to their discharge. The diagnoses were made in accordance to the criteria proposed by ACCP/SCCM. We evaluated demographic features, APACHE II, SOFA (Sepsis-related Organ Failure Assessment) score, mortality, sources of infections, microbiology and interventions. We also recorded underlying diseases and lengh of stay (LOS).
Results: 2419 patients were identified and 409 (16.9%) filled the criteria of sepsis, severe sepsis or septic shock. Average age was 61.9 years, 225 (55%) were males, and the overall 28-day mortality rate was 46.2 %. The average APACHE II score was 21 and the SOFA score on the first day was 7. The SOFA score on the mortality group was higher on day 1 (8), and had increased on day 3. We observed 326 episodes of sepsis (79.7%), 118(28.9%) of severe sepsis, and 210 (51.4%) of septic shock. The mortality rate for sepsis, severe sepsis and septic shock was 15%, 35.6% and 63.8%, respectively. The average LOS was 16 days. The two main sources of infection were the respiratory tract (71.6%) and the abdomen (23.2%). Gram-negative bacilli were more prevalent (55.6%).Gram-positive cocci accounted for 32% and fungi infections for 10.6%. Cardiac diseases (23,5%), chronic pulmonary disease (15,8%) and diabetes mellitus(14,35) were the most frequent underlying comorbidities seen.
Conclusion: it was observed a high incidence and mortality of sepsis in ICUs in our country. The high frequency of septic shock demonstrated a group at high risk of death. In order to have a better use of the resources and to promote a reduce in mortality in the next 5 years it is very important to identify our specific features. After the final analysis of the database we intend to give our contribution to a better understanding of sepsis in Brazil.

0480 A NURSE INITIATED TELEPHONE FOLLOW UP SERVICE FOR FORMER GENERAL INTENSIVE CARE PATIENTS

S Mckinley[2], D Moran[1], R Elliott[2]
1 The Royal North Shore Hospital of Sydney; 2 University of Technology Sydney

Background: Intensive care nursing involves the treatment and care of patients with life threatening conditions. Studies investigating patients' recollections provide valuable insight about the intensive care unit (ICU) experience. Patients report various sources of discomfort including unfamiliar obtrusive noise, disturbed sleep, an inability to communicate effectively and the presence of intrusive monitoring devices and tubes. The experience may result in long-term physical and psychological effects, ranging from fatigue and sleep disturbances to post-traumatic distress symptoms. Objective: We describe the process and outcomes of one nurse initiated strategy to address the needs of adult general intensive care patients following discharge from hospital. Methods: The intensive care follow up telephone service has been in progress since July 2001. The aims of the service are to offer former patients an opportunity to explore the intensive care experience and provide support during the recovery phase. Patients are phoned 8-10 weeks after discharge and respond to a semi-structured interview, including questions about mobility, sleep, ability to concentrate and relationships and support. Some patients are referred to other services, such a social work and some return for an escorted visit to the ICU. Results: Patient experiences vary during recovery but many report physical fatigue, sleep disturbances and financial difficulties. Patients who have been telephoned say they benefit the opportunity to talk about their experience and receive general health related information about diet and exercise. Patients who visit the unit find it helpful in piecing together their ICU stay. The nurses who have participated in the service have enjoyed greater work satisfaction related to exposure to the patients who are recovering. It offers an opportunity to complete the episode of care. In addition we have been able to feed patients suggestions into existing quality frameworks. The information received from former patients has assisted in the development of a home based physical rehabilitation program, which will be evaluated using a randomised control trial. Conclusion: The follow up service positively contributes to patient outcomes and the profile of critical care nursing in the community.

0482 ASSESSMENT AND REDUCTION OF ANXIETY IN MECHANICALLY VENTILATED PATIENTS

S Mckinley[1], L Dean[2]
1 University of Technology Sydney; 2 Childrens Hospital Westmead

Background: Critically ill patients report that they experience psychological distress, including anxiety and fear, during treatment in an intensive care unit (ICU). Investigators are increasingly seeking to learn about patients' anxiety levels during critical illness. Clinical practitioners seek to avert and alleviate anxiety and fear in their patients in order to promote comfort during ICU treatment. Anxiety may also be associated with physiological responses that interfere with patient recovery and contribute to increased morbidity and mortality observed in more anxious critically ill patients. Thus the detection and reduction of anxiety in critically ill patients are important clinical goals. Objectives: To i) review approaches to the assessment and reduction of anxiety, and ii) evaluate an information intervention to reduce anxiety during repositioning (turning) in mechanically ventilated patients. Methods: i) A comprehensive review of published research on assessment and reduction of anxiety in ICU patients. ii) A pilot randomised controlled trial (RCT) of provision of information containing the sensations experienced during repositioning was conducted in 40 mechanically ventilated patients. Patients were assigned to have information about the turn provided according to a control (C) script that contained minimal information about sensations, or an intervention (I) script that provided detailed sensory information about what would be experienced. Anxiety was measured before and after the turn using the Faces Anxiety Scale. Results: Anxiety has been assessed by objective observation of physiological and behavioral signs or by patient self report of the extent to which they are feeling anxious. As objective signs of stress are difficult to interpret and potentially unreliable in critically ill patients, research into patient anxiety in ICU relies on patient self report. Investigators have used measures such as the Hospital Anxiety and Depression Scale, the Edmonton Symptom Assessment Scale, and the six item version of the Spielberger state anxiety scale (SAI). However critically ill patients are limited in responding to such anxiety scales, especially ventilated ICU patients. The Faces Anxiety Scale is a single item scale with five possible responses, scored from 1 to 5, to which more ICU patients are able to respond than to other brief scales. It has good criterion validity vs. trained clinical judgement of anxiety ($r = .64$) and vs. the SAI ($r = .64$). In the pilot RCT the mean (SD) anxiety levels prior to turning were C – 2.5 (1.1), I – 2.6 (1.1) and after the turn were C – 2.5 (1.1), I – 2.35 (1.2) ($F = 0.24$, $p = .63$). Conclusions: Anxiety is difficult to assess in mechanically ventilated patients but the Faces Anxiety Scale provides a valid way to do so. Provision of information about sensations experienced during turning in this small pilot study did not significantly reduce state anxiety. More intensive interventions may be required to reduce anxiety in this patient population.

0483 INDOMETHACIN IN SEVERE HEAD INJURY. DOES IT MODIFY CEREBRAL AUTOREGULATION?

C Puppo, L López, G Fariña, E Caragna, L Moraes, A Iturralde, A Biestro
Centro de Tratamiento Intensivo-Hospital de Clínicas-Universidad de la República-Montevideo-Uruguay

Objectives: To evaluate indomethacin action on cerebral autoregulation and on systemic and cerebral hemodynamics in severe head trauma patients.
Methods: Prospective, controlled clinical trial, with repeated measures, performed at a 12-bed adult general intensive care unit of a third level referral university hospital.
Patients: 16 severe head injured patients, 14 males, age range 17-60.
A 0.6 - 0.8 mg. kg-1 indomethacin loading dose was followed by a 0.3 - 0.5 mg. kg-1.h-1 continuous infusion. Dynamic and static autoregulation were evaluated before drug administration and during indomethacin infusion phase. Dynamic: A transient hyperemic response test (change in cerebral blood flow velocity in middle cerebral artery after release of a 5 seconds common carotid artery compression) was performed and compared in both situations. Static: The cerebral hemodynamic response to artificially induced hypertension was evaluated. Systemic and cerebral hemodynamic changes were evaluated through continuous monitoring of mean arterial pressure, transcranial Doppler cerebral blood flow velocity, intracranial pressure and cerebral perfusion pressure, and jugular venous oxygen saturation.
Results: CO2 and indomethacin reactivity: The change in cerebral blood flow (estimated by the change in cerebral blood flow velocity) was 3.19% for each torr decrease in ETCO2. The indomethacin loading dose was immediately followed by a 29% estimated cerebral blood flow decrease equivalent to a change in ETCO2 of 9 torr. AVDO2 increased from 3.70 ml/dl to 5.60 ml/dl.
Cerebral autoregulation: Dynamic autoregulation index significantly increased, from a basal 30%, to 57% during indomethacin administration. The static autoregulation index increased from a basal 72%, to 89% during indomethacin infusion.
Conclusions: Indomethacin decreased intracranial pressure and cerebral blood flow, while maintaining tissue properties of further extracting O2. The cerebral microvasculature enhanced its reactivity during hypertensive and hypotensive situations.

0484 DELAYED VENTRICULAR FIBRILLATION FOLLOWING BLUNT CHEST TRAUMA IN A FOUR-YEAR-OLD CHILD

R Tome, M Somri, K Tesler, B Yanovski, L Gaitini
Department of Anesthesiology- Bnai Zion Medical Center- Haifa. Israel

Introduction
Ventricular fibrillation (VF) in the paediatric population is less frequent than in adults where it is caused by ischemic events. In children VF is usually secondary to congenital heart disease and trauma. VF following blunt chest trauma has been reported in many cases of children who suffered commotio cordis.
Children may be particularly at risk for injury because of the elasticity of their rib cage resulting in a lesser protection of the underlying organs.
Case Presentation
A four year-old boy was brought to the emergency room after having been involved in a motor vehicle accident as a pedestrian. He had sustained laceration of the face, and blunt trauma to the left side of the chest that was evident clinically as an abrasion. On arrival to the emergency room the child was completely alert reaching a Glasgow coma score of 15,that deteriorate 15 minutes later to a state of decreased alertness (GCS 11).
Sedatives (midazolam) and a muscle relaxant (rocuronium) were administered followed by tracheal intubation. One hour after his arrival to the emergency resuscitation room, multiple ventricular premature beats with bigeminy appeared on the monitor, followed instantaneously by VF. Cardiopulmonary resuscitation was started and early external defibrillation by 50 Joules was successfully applied as the rhythm returned to normal sinus.
The patient was admitted to the paediatric intensive care unit (PICU) for mechanical ventilation and further investigation. Twenty-four hours after admission sedation was ceased, the child subsequently regained consciousness and began to breathe spontaneously, therefore endotracheal extubation followed.
VF is a rare arrhythmia in the paediatric population, but it may occur just like other kinds of rhythm disturbances in the early stages after chest trauma when the myocardium suffers a direct damage. Commotio cordis is described as the uncommon syndrome of abrupt VF following blunt chest trauma that occurs in young participants in sports. The syndrome is characterized by immediate collapse of the victim at the scene. It is caused by a relatively low energy impact that dose not cause structural damage to the chest wall, myocardium, coronary arteries, or elsewhere within the thorax.
The case described in the present report cannot be classified as the above-defined commotio cordis since the VF developed nearly two hours after the sustained chest injury. At the same time, other possible aetiologies of VF such as heart pathologies, electrolyte imbalance or hypothermia and metabolic disorders had also been ruled out and no congenital heart disease demonstrated by echocardiography.
The prompt detection of VF and the early defibrillation were key to the successful outcome in this case. With this in mind, we put forward for debate that every child who suffers blunt chest trauma, including sport injuries, should be admitted to the hospital for continuous cardiac rhythm monitoring, for at least 24 hours in close proximity of a resuscitation and defibrillation setup.

0485 CONCEPTS AND ATTRIBUTES USED BY CRITICAL CARE NURSES TO MAKE SEDATION RELATED DECISIONS

LM Aitken[1], A Marshall[2], R Elliott[3], V Fox[3], S Mckinley[2]
1 The University of Queensland, Brisbane, Queensland, Australia; 2 University of Technology Sydney, Sydney, New South Wales, Australia; 3 Royal North Shore Hospital, Sydney, New South Wales, Australia

Background / Objectives: Sedation of patients forms an integral aspect of management of the critically ill patient. There is widespread agreement that the adequate level of sedation for each patient is different and is based on factors such as clinical condition, current management goals and history. Despite this recognised variation, there has been little attempt to understand how the critical care nurse determines how much sedation is required and when to deliver it. This study was designed to describe the concepts and attributes that critical care nurses use when making decisions related to assessment and management of a patient's sedation requirements.
Methods: Seven critical care nurses participated in the study including two pilot participants. The remaining five critical care nurses had data collected on two occasions while they cared for a general intensive care patient. Participants were not aware that sedation practices were the specific area of study focus. Two methods of data collection were used including thinking aloud and observation, with follow-up interviews conducted to elicit further detail and rationale regarding decisions made. Analysis involved integration on the data from all three collection sources (thinking aloud, observation and interview). Protocol analysis was conducted to code the attributes and concepts used to make decisions related to sedation practices. The study was approved by relevant Human Research Ethics Committees.
Results: Four female and three male critical care nurses, with between 5 and 25 years nursing experience participated in the study. Participants had between 4 and 23 years critical care experience and all had a hospital or university based critical care qualification. Each participant organised their decision making around five to nine concepts relating to sedation assessment and management. Concepts could be categorized as either assessment, treatment or pathophysiological in nature. Concepts were more frequently treatment oriented, with 26 treatment concepts, 20 pathophysiological concepts and 16 assessment concepts identified. The most common concept in each category was: treatment - sedation, pathophysiology - anxiety, assessment - assessment of response or neurological assessment. Anxiety and agitation appeared to be used interchangeably.
Conclusions: Extensive data are used by critical care nurses when making sedation decisions. These data relate to treatment, pathophysiology and assessment, with an emphasis on treatment. Description of these data will allow improvement in educational and quality assurance programs related to sedation in order to improve this area of practice.

0486 HYPERNATRAEMIC GASTROENTERITIS IN CRITICALLY ILL CHILDREN

G Robertson, M Carrihill, M Hatherill, Z Waggie, L Reynolds, A Argent
University of Cape Town & Red Cross Children's Hospital, Cape Town, South Africa

Objective: To describe fluid management, serum sodium, and outcome in critically ill children with hypernatraemic gastroenteritis.
Methods: Paediatric intensive care unit (PICU) records were screened for children admitted with hypernatraemic gastroenteritis at a paediatric teaching hospital in Cape Town (1997-2002). Data gathered included: age, weight, percentage clinical dehydration, admission pH, serum sodium (admission, 24 hours), type of intravenous (IV) solution, presence of seizures, co-morbid neurological disease, neurological state on discharge, and mortality. Bad outcome was defined as either newly-acquired neurological deficit, or death. Data were analysed by the Fisher Exact and Mann-Whitney tests. Data are median (range) and n (%). Fifty four children were enrolled, with median age 151 days (14 - 953) and admission weight 5.8kg (1.8 – 8.7).
Results: Thirty four (62%) children were >/= 10% dehydrated and 29 children (54%) had seizures. Three children (6%) died and 5 children (9%) had a newly acquired neurological deficit on discharge, ie. there was a bad outcome in 8 (15%) children.
Median admission pH was 7.1 (6.8 – 7.5), with median admission sodium 164 mmol/l (145 – 199), falling to 151mmol/l (134-171) at 24 hours, at a rate of 0.6 mmol/l/hour (-0.5 to 2). In 23 children (42%) sodium fell at > 0.6 mmol/l/hour (from 174 – 148 mmol/l) over 24 hours, while in 30 children (57%) sodium fell at < 0.6 mmol/l/hour (from 160 – 151 mmol/l). There was no significant difference in the incidence of seizures (p=0.85) or bad outcome (p=1.0).
Forty two children (78%) received IV solutions containing >/= 61 mmol/l sodium, with median admission sodium 164 mmol/l, falling to median 151 mmol/l at 24 hours. Twelve children (22%) received IV solutions containing < 61 mmol/l of sodium, with median admission sodium 165 mmol/l, falling to median 151 mmol/l at 24 hours. The rate of fall of sodium was 0.6 mmol/l/hour vs 0.9 mmol/l/hour (p=0.09) respectively, but there was no statistical difference in incidence of seizures or bad outcome (p=0.13).
In the 8 children with bad outcome the median sodium content of the IV solution was 48 mmol/l compared to 61 mmol/l in those with good outcome (p=0.04). Comparing children with bad vs good outcome, median admission sodium was 172 vs 164 mmol/l (p=0.52), falling to 155 vs 151 mmol/l at 24 hours (p=0.49), with an identical rate of fall of 0.58 mmol/l/hour (p=0.7).
Conclusion: In this group of children with hypernatraemic gastroenteritis, fall in serum sodium was consistent with conventional recommendations (median 0.6 mmol/l/hour). However, a faster fall in sodium was not associated with worse outcome.
Although IV solutions with lower sodium content were associated with bad outcome, this difference in outcome was not ascribed to the rate of fall of sodium.

0487 FAMILIES' PERCEPTION ON COMMUNICATION IN AN INTENSIVE CARE UNIT

K Kitajima, M Cosmo, M Rodrigues, P Godoy
Hospital da Venerável Ordem Terceira da Penitência

Background: Communication with families in intensive care setting can be complicated by the fact that admission is often sudden and unexpected and intensivists usually meet families in difficult emotional circumstances. (Critical Care Medicine, 2001).
Objective: Identify families' perception about information in intensive care unit (ICU)
Methods: It is a qualitative and prospective research. Thirty families responded to a semi-structured questionnaire involving topics about phone information in the morning and communication with the intensivists. The patients had to be in the ICU for at least twenty four hours. Data was collected by psychologists in a period of a week.
Results: About patient: average age was 78 years old; time of internment in ICU was five days and 43% were of son or daughter. About information obtained by phone: 60% do not use this service, due to its proximity to visit period (44%). In relation to the content of the information: 63% find important to receive general information on the patient, such as evolution and intercurrence. In relation to the communication with the intensivists: 63% are satisfied with the relationship with the health team, nothing to complain in communication (40%). In relation the suggestions to improve the communication: 26% suggest that the language must be simpler; 20% must always say the truth and 20% that the intensivists would have to give more attention.
Conclusion: With these preliminary results, we may conclude that the families have a great necessity of information, independent of age, diagnostic and time of internment of the patient in the ICU. Communication in the ICU requires well-trained professionals in the use of language and with an empathic attitude to understand better the families' needs, besides an institutional culture that promotes a good relationship among all the staff with families and patients.

0488 MACROPHAGE MIGRATION INHIBITORY FACTOR (MIF) AS A DIAGNOSTIC TOOL FOR ACUTE CORONARY SYNDROME (ACS)

HTF Mendonça-Filho[1], KC Pereira[1], GS Gomes[1], M Viegas[1], A Potch[1], ET Mesquita[1], BR Tura[2], HFR Dohmann[1]
1 Translational Research - Pro Cardiaco Hospital, Rio de Janeiro - BRAZIL; 2 Biostatistics Division, National Institute of Cardiology, Rio de Janeiro - Brazil

Background: inflammatory activity is recognizably enrolled in the physiopatological basis of ACS. Considering the diagnostic challenge related to ACS when typical electrocardiographic (EKG) findings are absent, we evaluated the role of MIF, soluble CD40 ligand (CD40L) and interleukin 6 (IL6) in this scenario. Design: prospective, observational, cohort pilot-study. Setting: emergency division at a tertiary care cardiology center. Patients and methods: under informed consent, patients whose main complaint was chest pain were considered elegible. Exclusion criteria consisted of associated neoplastic, infectious or inflammatory disease as well as EKG with ST segment elevation above 1 mm. Within the first 12h from the admission, venous blood was sampled for sCD40L, MIF and IL-6 assays (ELISA-sandwich, R&D Systems, Mineapolis, EUA). High risk for ACS was defined by nuclear image, angiographic and/or enzymatic criteria (tropoponin I > 1.0). Results: from 195 patients included, 69 (35.4%) were considered as under high-risk for ACS (ACS) and 126 (64.6%) as non-ACS patients. Within overall patients, a positive bidirectional correlation was observed between sCD40L and MIF, and a negative correlation was observed between each one of these and IL6. After principal component analysis, non-parametric tests showed significant differences between the two groups concerning levels of MIF (p<0.0001) and IL-6 (p=0.012). For discrimination of patients under high-risk for ACS, areas under receiver operator curves for MIF and IL6 were 0.69 and 0.61, respectively. Conclusion: In spite of complex interactions among inflammatory mediators, levels of MIF are independently related and possibly have a role in the identification of patients under high risk for ACS among those with chest pain without ST-segment elevation. Further studies are needed to explore MIF potential as a new diagnostic tool in ACS.

0489 COMPARATIVE ANALYSIS OF ESTIMATED AND MEASURED BODY WEIGHTS OF ELDERLY AND NON-ELDERLY CRITICALLY ILL PATIENTS

JM Viana, MA Martins, EA Nicolini, WO Campos-Filho, A Basile-Filho
Intensive Care Division, Ribeirão Preto Medical School – University of São Paulo

Background: Anthropometry is the technique of measurement of the human body or its various parts. This method was developed at the end of the 19th century with the use of measuring devices for the quantification of differences in the human shape. The purpose of anthropometric measurements is to identify the quantity and distribution of the main composition determinants of body weight.
Objectives: The objective of the present study was to compare the direct measurement of body weight with the aid of a portable scale (real) to that estimated visually in critically ill patients selected according to age ranges.
Methods: Seventy-four patients (34 males and 40 females) were studied prospectively. About 31 patients were 60 years old or older. At admission, all patients were stratified according to the APACHE II severity index (Acute Physiologic and Chronic Health Evaluation II). At admission, the patient was weighted by the bedside with the aid of a portable scale and body weight was then estimated visually. Ten persons chosen at random from the medical and/or nursing staff estimated visually the body weight of each patient and each wrote the estimated body weight value without communicating it to the others. The mean obtained corresponded to the estimated body weight and was compared to the measured (or real) body weight. The patients were divided into two groups according to age, i.e., less than 60 year old and 60 year old or older.
Results: The first group (age less than 60 years) consisted of 43 patients, and body weight and resting energy expenditure were underestimated in 55.8% of them (n = 24) and overestimated in 41.9% (n = 18), with a statistically significant difference ($p < 0,05$) in both situations compared to the real body weight and resting energy expenditure. Real data were found to be equal to estimated data in 2.3% of the patients (n = 1). The second group (age 60 year old or older) consisted of 31 patients and body weight and resting energy expenditure were underestimated in 35.5 of them (n = 11), a result considered to be statistically significant ($p < 0,05$). The body weight and resting energy expenditure were overestimated in 64.5 % (n = 20) of the patients in this group, a result also considered to be statistically significant (< 0,05). In this group, the real body weight and resting energy expenditure were not found to be equal to the estimated values in any patients. Considering the group of patients as a whole (n = 74), body weight was underestimated in 35 and overestimated in 38, with a significantly greater error for the underestimated ($p < 0,05$).
Conclusions: There was a statistically significant difference ($p < 0,05$) between real and estimated body weights and resting energy expenditures. However, despite this finding, the calculations of the resting energy expenditure by the two methods (real and estimated) were not important from a clinical point of view since the intervals detected were within the normal range.

0490 INTER-HOSPITAL TRANSPORT IN CRITICALLY ILL PATIENTS. FIVE YEAR EXPERIENCE

I Fuentes, A Donoso
Area de Cuidados Criticos Hospital Padre Hurtado Santiago Chile

Background: Pediatric intensive care patients often need to be moved from critical care areas to another units for diagnostic and therapeutic procedures; specially in General Hospital without integral solving capacity.
Patient and methods: In order to assess the problem encountered during the inter-hospital transport (IHT) procedure, we elaborated a prospective study. We elaborated a categorization according to the patient's complexity in order to determine medical transport team. Each medical team can be formed by critical care physician, critical care nurse and paramedics. A questionnaire was undertaken to evaluate the transport of critically ill children hospitalized in our PICU over a five years period (1999-2004).
Results: Two hundred eleven children transfers were performed. All transfers were made in normal emergency ambulances. The most common cause of transfer was medical evaluation. 91% IHT happened during the day and the average time spent was 122 min (range: 30-450 min). The transfer team was integrated exclusively of paramedicals in 37% and only 26 % of physicians. 31% in mechanical ventilation. 14% receiving at least one medication (mainly sedatives). All ventilated patients were supported manually. Deterioration in respiratory systems was the main complication in the patient's condition and the main inconvenient indicated by the transfer team was administrative problems. No cardio respiratory arrest and death were observed.
No differences in adverse event occurrence according staff composition were observed.
Conclusions: IHT is usual in Pediatric Intensive Care Unit and can be achieved safely and effectively with adequate facilities and staff. Categorization was useful in order to optimize resources. Transfer procedure will always pose a risk, but this can be minimized by adopting recommendations.

0491 NURSE THEORETICAL TRAINING FOR THE ASSISTANCE TO A CARDIOPULMONARY RESUSCITATION

M Bellan Consorti, IE Araujo Muglia
Universidade Estadual de Campinas - Unicamp

BACKGROUND: A cardiac arrest is a situation that occurs most of the time in a sudden and unexpected way. Due to the fact that the nursing team is closer to the patients, it is them who detect such events and should have enough information to provide first assistance. The success of this cardiopulmonary resuscitation (CPR) depends on the starting time, the harmony, the team's synchronism and the ability of the professionals involved. OBJECTIVES: The objectives of the study were to offer a theoretical training to nurses to assist cardiac arrests (CA) and check the information before and after the participation in the proposed activity. METHODS: A theoretical kind of program was applied according to the directories published by GUIDELINES 2000 FOR CARDIOPULMONARY RESUSCITATION AND EMERGENCY CARDIVASCULAR CARE – IN INTERNATIONAL CONSENSUS ON SCIENCE to the nurses who develop assistance activities in the various areas of the hospital. This program covered two phases, the first one related to the application of a questionnaire on CPR followed by a theoretical class on the subject. The second phase, done a week after the first one, covered a reapplication of the questionnaire on CPR to check the level of assimilation of the subjects discussed during the theoretical class. RESULTS: Forty nurses participated. On the first phase, six (15%) of the participants got grades between 0 to 4,9 and after a week, two (5%) of them got grades between 5,0 to 7,0 and four (10%) between 7,1 to 10,0. Of the ones who got grades between 5,0 to 7,0, nineteen (47,5%) of the participants in the first phase, a week after, eighteen (45%) of them presented a grade between 7,0 to 10,0. And fifteen (37,5%) of the participants got a grade similar to or over 7,1 on the first phase and after a week they maintained this grade. CONCLUSIONS: Offering a program with theoretical subjects on CPR resulted in nurse's improvement of knowledge on the assistance to CPR and would also subsidize them in organizing and orienting their team as well as their own professional performance.

0492 USE OF BIPAP IN PATIENT WITH HIGH SPINAL CORD INJURIES

ET Martins, R Otero, C Koerich, S Santiago, TS Silva
Hospital Governador Celso Ramos-Florianopolis - Brazil

BACKGROUND: A great challenge for the ICU physicians is the patients' treatment with high spinal cord injury (SCI), due to surgical and clinical complications and enormous economic and family implications. Due to the improvement of the pre–hospital management and resuscitation techniques a growing number of patients with important breathing distress is being admitted in ICU with picture of breathing inadequacy, frequently needing ventilatory support. On the other hand we have the progressive demand of beds in ICU for another pathologies, therefore we need of alternative methods of ventilatory support mainly beyond the ICU. Many times we observe the clinical complications (atelectasis, pneumonia and breathing fatigue) including death of patients after ICU discharge.
OBJECTIVES: To demonstrate the use of biphasic positive airway pressure system (BIPAP) as method of attendance and weaning ventilatory in patients with high SCI.
METHODS: We studied 40 patients' evolution admitted in ICU and intermediate intensive care unit with high SCI with level above C7 with tetraplegia and breathing inadequacy that needed assisted mechanical ventilation. BIPAP was used in patient with nasal and facial mask or in the tracheostomy tube when is no longer required conventional ventilatory mechanics assistance.
RESULTS: Of the 40 patients 90% (n=36) were male, with medium age of 31.7 years. As cause of SCI: Automobiles (15), motorcycles (6), falls (6) diving (5), pedestrian (4), sport (3), other (1). Level of the lesion C2-C3 (7), C4 (13), C5 (15), C6 (5). Thirty two patients demanded tracheostomy tube. Eight patients utilized BIPAP only with facial or nasal mask. The maximum time of BIPAP use in the wards was of 152 days in patient with serious picture of TBI and high SCI. Of the 40 patients, 34 had discharge from hospital. One patient with lesion in C2 need ventilatory mechanical assistance domiciliar. The in-hospital mortality was of 6 patients =15%.
CONCLUSIONS: Despite the severity of the lesion we observed a low intra-hospital mortality that we believe, was influenced strongly by the use of BIPAP propitiating a discharge more precocious from the ICU. We also obsrved reduction of hospital costs and the patient's coexistence with relatives out of ICU. The study revealed that BIPAP is a good method of ventilatory support and weaning of the mechanical ventilation in patients with tetraplegia and breathing distresss.

0493 SUPRARENAL INSUFFICIENCY (SRI) IN PEDIATRIC SEPTIC SHOCK: EPIDEMIOLOGIC CHARACTERISTICS AND THERAPEUTIC ASPECTS

A Ventura, D Souza, E Barreira, A Bousso, E Gonçalves
Pediatric Intensive Care Unit - University Hospital - University of São Paulo

Objectives: Describe the incidence of absolute SRI according to the definitions proposed in 2002; the clinical characteristics of the population and compare the clinical management of absolute SRI in pediatric septic shock.
Methods: We undertook a retrospective cohort between Ago/2001 and Dec/2003 of all patients who fulfilled the ACCP/SCCM (1992) criteria for septic shock, excluding newborn babies. Patients were allocated into 4 groups according to the presence or absence of risk factors and to the positive or negative use of hydrocortisone in the medical management of their shock. Characteristics were expressed in terms of mean + standard deviation and proportions. Statistical analysis included chi-square and exact Fisher test with results considered significant when $p < 0.05$.
Results: Approximately 10% (87/865) of the admitted patients presented with septic shock and the study sample was constituted of 67 of these patients. Eight patients had risk factors for SRI (12.9%). A basal cortisol level was obtained in 18 patients and in 4 (22.2%) levels were below 18mg/dl. Patients in group 3 who didn't have risk factors for SRI but received hydrocortisone presented with a higher PRISM score (p=0.03); a higher incidence of blood stream infections (p=0.014); a higher mortality (p=0.000014) and a higher need for 3 or more vasoactive drugs ($p< 0.001$)as compared with patients in group 4 who as group 3 didn't have risk factors and did not receive hydrocortisone. Regarding the type of vasoactive drug used, we observed that patients in group 3 had a higher need for epinephrine (p=0.0005) and norepinephrine (p=0.00008) as compared with group 4. The analysis of the conformity between the clinical management applied and the current guidelines showed a good general conformity in 74.2%; a sub-utilization rate of 37.5% (patients with risk factors and did not receive hydrocotisone) and a supra-utilization rate of 24.1% (patients without risk factors that received hydrocortisone).
Conclusions: We observed a moderate incidence of absolute SRI and few patients had risk factors for absolute SRI. There was a moderate conformity between management and recommendations. There was a high mortality risk (PRISM score) for all patients and a high observed mortality. However, in patients were there was a supra-utilization of hydrocortisone there was a significantly higher risk of mortality, a higher use of three or more vasoactive drugs and a higher observed mortality.

0494 AUDITING UNPLANNED EXTUBATION IN AN AUSTRALIAN CRITICAL CARE UNIT

KM Birkett[1], KA Southerland[1], GD Leslie[2]
1 ROYAL PERTH HOSPITAL, PERTH, WA, AUSTRALIA; 2 Edith Cowan University, Perth, Wa, Australia

Background
The majority of patients in Australian Intensive Care Units (ICU) are intubated and ventilated, thus exposing them to numerous potential life threatening complications such as laryngospasm, laryngeal oedema, aspiration pneumonia, arrhythmias, bronchospasm or respiratory failure. To monitor the incidence and outcome of Unplanned Extubation (UE), a clinical indicator was established in 1995. Various quality improvement projects have since been evaluated.
Objectives
The aim of this particular audit was to determine the frequency and risk factors associated with reported UE within a 22 bed general and surgical ICU between January and December 2003.
Methods
Nursing and medical staff provided information on the patient's age, diagnosis, mental status, precipitating causes and investigations/treatment ordered. Other data collected included information on the patient's position, sedation regime, method of ETT placement and the use of physical restraints.
Results
Results indicated that twenty six patients experienced an UE in 2003 (incidence of 2.04 per 100 patients), a finding consistent with previous years (2.74%). Of these, 46% of these required emergency reintubation most of which were accidental extubations (71%). Unplanned extubation was generally deliberate (73%), occurred in general patients (85%) and between the hours of 2100 and 0600 (42%). Other findings revealed that UE took place despite the provision of sedation or restraints.
Conclusions
Practice review should focus on reviewing tube fixation methods, developing weaning protocols for general patients and assessing an appropriate sedation score to monitor the patient's mental status. Following implementation of each review, further audit should be undertaken to evaluate outcome. Overall, data collected from this and previous surveys revealed an encouragingly low incidence of UE. The UE indicator provides the opportunity to monitor changes and guide further clinical practice.

0495 EARLY TREATMENT IS ASSOCIATED WITH LOWER MORTALITY RATE IN CHILDREN WITH SEPTIC SHOCK

EJ Troster, CF Oliveira, FRN Sá, DSF Oliveira, AC Gottschald, AR Ogawa, JDG Moura, FAC Vaz
Instituto da Criança - University of São Paulo - Brazil

BACKGROUND: In USA, the incidence of severe sepsis is 5.3 cases per 1000 children younger than 1 year-old and 0.2 cases per 1000 children between 5 and 14 years-old. Mortality rate is about 10% for all children with severe sepsis and septic shock, increasing to 30% with at least one comorbidity and reaching 70% according to the number of organ dysfunctions. In 2002, 32% of the children admitted to our Intensive Care Unit (ICU) had severe sepsis or septic shock, with mortality rate of 46%. Early diagnosis and treatment are very important for septic shock reversal in children and adults.
OBJECTIVES: To describe the profile of children admitted to the ICU with septic shock or severe sepsis during 1 year; to describe the treatment received, comparing risk factors and mortality rate.
METHODS: Retrospective cohort; analyses of database of 400 patients admitted between July 2002 and June 2003; selection of patients with diagnosis of severe sepsis or septic shock. Chi-square test (Yates correction) for mortality rates; chi-square for tendency for 3 groups comparison.
RESULTS: Out of 400 admissions, we selected 105 patients with severe sepsis or septic shock; 15 patients had incomplete data or missing information. Ninety records were analyzed. Of the 90 patients selected, 83% had septic shock and 17% had severe sepsis. Median age was 45 months, 58% were girls and 42% were boys; infections sites were lungs (44%), not determined (21%), systemic (12%), skin (6.7%), abdomen (6.7%), central nervous system (4.4%) and abdomen plus lungs (3.3%); infections were acquired intra-hospital in 41% of the children. Considering all patients with septic shock (n=75), treatment was initiated 49 minutes (mean) after diagnosis; in average, patients received 20 ml/kg in the first hour, 49 ml/kg in 6 hours and 84 m/kg in 24 hours after diagnosis of septic shock. Time elapsed from the diagnosis until starting volume infusion was 20 minutes among patients that survived and 70 minutes among patients that did not survive. Patients older than 2 years-old, patients that received less than 15 ml/kg in the first hour, patients that received less than 50 ml/kg in 6 hours and patients treated with more than 30 minutes after diagnosis had significant higher mortality rate. Mortality rate was 64% for those who received less than 20 ml/kg, 47% for those who received between 20 and 40 ml/kg and 33% for those who received more than 40 ml/kg in the first hour. There was no difference in mortality rate concerning gender or intra-hospital acquired infection.
CONCLUSION: Severe sepsis and septic shock in children are responsible for a great number of admissions, with high morbidity and mortality rates. Mortality rate was higher for children older than 2 years-old, for those who received less than 40 ml/kg in the first hour and when treatment was not initiated in the first 30 minutes after diagnosis of septic shock.

0496 EPIDEMIOLOGICAL ASPECTS OF CHILDREN ADMITTED TO A PEDIATRIC INTENSIVE CARE UNIT WITH SEPTIC SHOCK

A Ventura, D Souza, A Bousso, C Travassos, D Oliveira, J Fernandes
Pediatric Intensive Care Unit - University Hospital - University of São Paulo

Objective: Describe the incidence, clinical characteristics and etiology of septic shock, according to the ACCP/SCCM (1992) definitions, in children admitted to a PICU.
Methods: We undertook a retrospective cohort study from Ago/2001 to Dec/2003. Statistical analysis included chi-square test with the exact Fisher correction test.
Results: During the study period 865 patients were admitted to our PICU. Eighty-seven patients (9.8%) fulfilled the diagnostic criteria for septic shock. We were able to retrieve the medical records of 62 patients (71.3%) which constituted the study shock. Fifty patients (80.7%) presented with septic shock at arrival to the PICU. There was a predominance of infants (median age=24.5 months) and male sex(55%). Most patients had a moderately high PRISM score (median=26.3). Pneumonia was the main diagnosis at admittance (66.1%). Almost half the patients (45.2%) were transferred from other hospitals. Five patients were monitored with pulmonary artery catheter due to refractory shock. Thirty-one patients (50%) had positive cultures. The most common positive culture source was blood (19) followed by urine(6), cerebral spinal fluid (2) and others (4). Among the 19 positive blood cultures in 5 we isolated *Streptococcus pneumoniae*, in 3 *Pseudomonas aeruginosa* , in 3 *Staphylococcus aureus* and Coagulase negative*Staphylococcus* in 2. *Neisseria meningitidis, Escherichia coli, Acinetobacter baumanni, Candida tropicalis* and *Streptococcus viridans* were all isolated once each.Mortality of the study group was 26 patients (41.9%). Mortality of patients who required 3 or more vasoactive drugs was significantly higher than those who required less than 2 drugs (p<0.005).
Conclusions: We observed that the incidence of septic shock in our unit is comparable to that referred by other authors. The mortality remains high and is clearly associated to the presence of refractory shock. Refractory shock was determined by the number of vasoactive drugs used to manage the hemodynamic parameters.

0497 MICROSCOPIC EXAMINATION BY GRAM STAIN VERSUS QUANTITATIVE CULTURE OF ENDOTRACHEAL ASPIRATES IN MECHANICALLY VENTILATED PATIENTS

JA Victorino, C Dias, E Ribas, S Superti, F Zettler, F Hoff, L Berquó, G Narvaez
Hospital Mãe de Deus, Porto Alegre, Rio Grande do Sul, Brasil

Background: Diagnosing ventilator-associated pneumonia (VAP) is a complex issue and the precise role of the microbiology laboratory is uncertain. Invasive techniques to obtain uncontaminated respiratory secretion, using bronchoscopy and cultivated on a quantitative format may contribute to a better outcome when compared to noninvasive specimens. Invasive procedures, however, are not easily available. Microscopic examination of easily obtained respiratory specimens, such as endotracheal aspirate (ETA) by Gram stain (GS) presents potential to guide appropriate antimicrobial therapy in patients with suspected VAP.
Objective: To evaluate the performance of microscopic examination of ETAs by GS in patients with suspected VAP.
Methods: Specimens of ETA were obtained from adult, intensive care patients submitted to mechanical ventilation and processed in the laboratory. Smears were stained by GS and cultivated quantitatively. Only specimens presenting with <10 squamous epithelial cells were included. Microorganisms with ^{3}106 CFU/ml were considered in this study.
Results: A total of 382 specimens were obtained, and in 149 (39.0%) at least one microorganism was present with ^{3}106 CFU/ml. Gram-negative rods were found in 92 specimens, gram-positive cocci in 28 and other microorganisms in 5. In the remaining 24 positive cultures, mixtures of different microorganisms were observed. Including results of mixed cultures, Pseudomonas aeruginosa (n=31), Staphylococcus aureus (n=30), Acinetobacter baumanii (n=23), Klebsiella pneumoniae (n=12), Stenotrophomonas maltophila (n=7), and other gram-negative non-fermentative rods (n=27) were the species most frequently isolated. The presence of microorganisms on GS was verified on 130/149 (87.2%) of culture positive ETAs. Overall, the sensitivity, specificity, positive and negative predictive values of GS were 87.2% (130/149), 79.4% (185/233), 73.0% (130/178), and 90.7% (185/204), respectively. Gram-positive cocci were present on GS of 29/30 ETAs with culture positive (^{3}106 CFU/ml) for S. aureus (sensitivity = 96.7%), being the specificity of this morphotype 86.6% (305/352). The positive and negative predictive values of this morphotype compared to a positive culture for S. aureus were 38.1% (29/76) and 99.7% (305/306), respectively. When gram-negative rods were considered as a morphotype, the sensitivity, specificity, positive and negative predictive values were 83.3% (95/114), 84.3% (226/268), 69.3% (95/137), and 92.2% (226/245) respectively.
Conclusion: GS compared to quantitative culture of ETAs presents a high negative predictive value, contributing to a more conservative use of antimicrobials, although the accuracy is far from ideal. In institutions that have a low prevalence of VAPs due to S. aureus, a GS of ETA without the presence of gram-positive cocci may be a sufficient reason to avoid use of vancomycin.

0498 A STUDY OF 749 CONSECUTIVE CASES OF SEVERE HEAD TRAUMA FROM 1994 TO 2004 IN FLORIANOPOLIS, BRAZIL

ET Martins[2], TS Silva[1], M Coutinho[2], LA Rigo[1], JN Meinertz[1], FO Machado[2]
1 Intensive Care Unit, Hospital Governador Celso Ramos, Florianopolis, Santa Catarina.Brazil; 2 Santa Catarina Federal University

Backgrounds: Trauma is the major cause of mortality in the population less than 40 years old. At least 60% of trauma deaths are secondary to head trauma. Brazil has a high incidence of traffic accidents.
Objectives: Our main objective was to study the epidemiology and mortality secondary to severe head trauma in the metropolitan area of Florianopolis (circa 800,000 inhabitants). We compared the impact of traffic safety campaigns on the epidemiologic variables and mortality in the period from 1994 to 2004.
Methods: Departing from a data bank of patients admitted with severe head trauma (Glasgow Coma Scale ≤ 8) to the Intensive Care Unit of Hospital Celso Ramos, which is the center for neurotrauma in the metropolitan Florianopolis, in the period beginning on January 1st 1994 going to December 31st 2004. Data of 749 consecutive patients were collected and the following variables analysed: demographics, cause of trauma, Marshall´s tomographic classification for head trauma and in-hospital mortality. We compared mortality of two periods: 1994 to 1995 and 2003 to 2004.
Results: Men represented 81.31% of the deceased, most 71.70%(537) age between 12 and 40 years old. Victims were Pedestrians 29,24%(219) motorcycle 24,70% (185) , automobiles 22.56%(169), Falls 12.82% (96) assaults 4.27% (32) others 6.41% (48). Betwen 12-45 years the cause was motorcycles 34.93%,automobiles 29.51% e pedestrians 24.69%, 41-65 years pedestrians 42.86% and falls 27.38%, >65 years 56.42% pedestrians e 28 % falls. In – hospital total mortality was 33,24 %.We compared the mortality in 1994-1995 (43.6%) between 2003-2004 (25.84 %) (p<0,006).
Conclusions: The use of safety belt and the new national traffic law in act since 1998, have changed the epidemiology of head trauma in Florianopolis. The prevalent victim profile of traffic accidents with head trauma leading to hospitalization changed from car passengers to motorcycle conductors accidents and pedestrians. There was a decreased in mortality rate probably due to better pre-hospital and in-hospital care, especially intensive care, frequent intra-craneal pressure monitoring, better classification and tomographic control and better treatment of clinical and surgical complications. The importance of safety in traffic campaigns with obligation of safety belt use and the new national traffic law, as well as the need of new awareness campaigns for motorcycle conductors and pedestrians.

0500 INFECTION IN ADULT INTENSIVE-CARE UNIT, A CASE CONTROL STUDY

C Castarataro, M Paz, E San Roman, D Czerwonko, J Grucci, C Salvatierra, M Villalobos
Hospital Italiano de Buenos Aires

Primary objetive: to determine if the infection in ICU patients is a direct cause death.
Secondary target: to observe if the multiple organ disfunction (MODS) or other severity score are directly related to the developed of infection.
Materials and Methods: It is a retrospective observational study of cases and controls. The identification of the cases and its respective controls were made through an automatic system computerized using program SATI-Q 2.2 modified by developed consultations in program Access Oficce of Microsoft.
Identification of the cases are as follow: patients with a staying > 72 hours that develop some of the following Infections: Nosocomial Neumonia, Infection related to central venous catheter, Primary Bacteriemia or Urinary tract Infections. Controls: Patient with a staying > 72 hours that were matched up comparing to the cases according to age ± 2 years, APACHE II ± 2 points, TISS 28 ± 2 points, LOS ± 5 days and same sex. Criteria of nosocomial Infection was according to S.I.V.E.N.I.H (Intensified System of Epidemiologist Monitoring of Hospital Infections).Mortality was the outcome. As secondary outcome it was observed if there was any sign of worsening previous to the diagnosis of the Infection, according to TISS 28, and MODS.
Statistical Analysis: Shapiro Wilk, TTest and Wilcoxon, Chi2, Value of p with statistical significance < 0,05. Lineal univariate Regression and Logistic Regresion, Statistical Program: STATA 6.0.
Results. There were 183 patients in each group. Average age of two the populations, TISS 28 and mortality did not show significant differences, (p > 0,05).
There was a significative difference previous to the infection in LOS and early MODS in the group of cases (p<0.05).
The univaried analysis of mortality prediction showed that the categorization, LOS , TISS28 and the early MODS. There was not significant difference in the early MODS between cases and controls of died patients (p>0.05) .
In died patients of the group cases the early MODS before the infection, during the infection and after the infection always remained a greater score. In the group control MODS previous to the infection did not have significant difference between alive and died patients. Patients who survived in the group cases had a greater MODS score than the control group before infection stage. However, there were not significant differences. But on the other hand there were significant differences in the MODS comparing to those who died (p>0.5).
Conclusions. Infection was not a variable that showed greater risk of dying.
Patients that showed infections have an increase of organic failure 24 to 48 hours previous to develop infection.
In our sample the early MODS, severity and LOS predict mortality in patients who undergo nosocomial infections.

0502 PROPHYLAXIS OF VENOUS THROMBOEMBOLISM IN A OPEN ASSISTENCIAL MODEL OF INTENSIVE CARE UNIT (ICU)

JA Victorino, MC Moraes
Hospital Mãe de Deus, Porto Alegre, RS, Brazil

Background: Venous Thromboembolism (VT) contributes to the patients' morbimortality in ICU that suggests that risk factor and prevention should be evaluated in that population 1-2.
Objectives: To provide appropriate prophylaxis of VT in private ICU.
Methods: Cohorte study with intervention in an ICU of a general hospital with 21 beds. Through collection instrument filled out daily by search activates for the clinical pharmaceutical 9-10, with the staff doctors' support, it was looked for to implement the practice of prophylaxis of TEV in agreement with internal protocol, based on the VII Consensus of ACCP on antithrombotic therapy and thrombolysis, as the drug, dose and indication according to the measured risk, stimulating appropriate prophylaxis 4-5-6-7.
Results: Of the 2929 pacientes/day (100%) interned in the period, medium age 69 years old, medium APACHE II of 13,5, 1465 (51%) in mechanical ventilation, 262 (9%) with thrombocytopenia, 1268 (43,2%) were surgical patients and 372 (13%) suffered stroke. As for the risk of VT, 30 (1%) presented low risk; 1294 (44%) moderate risk; 1082 (38%) high risk 502 (17%) very high risk. Of the total pacients/day , 404 (14%) were on anticoagulation, 1358 (47%) received no-fractional Heparin 12/12h (70%) and 8/8h (30%); 329 (11%) received low molecular weight heparin 20 (73%) and 40mg/day (27%). Alone or concomitant mechanical prophylaxis was observed in 4% of the patients. 2382 (81%) patients received appropriate prophylaxis. There was pharmaceutical intervention in 19% of the cases with resolution of 9% of the inadequacies. Only 1 patient presented VT (0,0003%).
Conclusions: The intervention in 1 in each 5 patients and the apropriation of 81%, demonstrates that the practice of risk evaluation for trained professional (clinical pharmacist) improves ending negatives levels.

0503 STRESS ULCER PROPHYLAXIS PROTOCOL IN INTENSIVE CARE UNIT (ICU)

JA Victorino, MC Moraes
Hospital Mãe de Deus, Porto Alegre, RS, Brazil

Background: The stress ulcer prophylaxis in ICU is associated to the use of several gastric barrier control drugs prescribed sometimes inadequately or without indication. Clinically important hemorrhage are present in 1,5 to 15% of these patient and mechanical ventilation (MV) for more than 48 hours and coagulopathy are predictors of risk factor1-6.
Objectives: To provide appropriate stress ulcer prophylaxis in patients with MV and coagulopathy through protocol based on active search.
Methods: A Cohort Study with intention to treat, in an ICU of a private general hospital with 21 beds. Through collection instrument filled out daily by search activates for the clinical pharmaceutical, to implement protocol of stress ulcer prophylaxis, recommending ranitidine as a drug of choice, in agreement with evidence based medicine7. Critical evaluation of the prescription was accomplished and verified use of MV and early enteral nutrition (EN), intervening when necessary, in relation to needs, adaptation, dose and dosage of the drug, with the agreement of the medical staff from ICU.
Results: Of the 2322 patients/day, APACHE II medium of 13,3 and medium age of 68 years , 1199 (52%) in MV, 1167 (50%) received EN, considered a protecting factor in relation to hemorrage8. From total patients/day, 428 (18%) didn't use drugs and 219 (9%) presented trhombocitopenia. Among the drugs prescribed, pantoprazol (23%) of which 87% parenteral and 13% orally; omeprazol (24%) of which 67% parenteral and 33% orally and ranitidine (33%), drugs recommended by the protocol, with 85% used parenteral and 15% orally. Comparing the use of drugs in 2004 with the same period of 2003, was observed based on Defined Daily Dosis (DDD/1000patients/day) according to the ATC pattern an increase of consumption for parenteral ranitidine of 32g to 243g/1000 patients/day and a decrease of the parenteral use of omeprazol of 1667 to 773mg/1000patients/day and of 1760 to 1140g/1000patient/day with pantoprazol. With the oral form, there was an increment in the use of ranitidine of 11 to 110g/1000patient/day and a decline in the consumption of omeprazol of 286 to 260mg/1000patient/day and of pantoprazol of 287 to 167mg/1000patient/day.In relation to the apropriation of prophylaxis, 1512 (68%) received appropriate prophylaxis and only 2 patient (0, 0009%) presented digestive hemorrhage.
Conclusions: The adoption of protocol of stress ulcer prophylaxis in open Intensive Care units guided by trained professionals promotes the appropriate use of drugs and good levels of negative ending, like stress ulcer hemorrhage.

0504 RELATIONSHIP BETWEEN TRAUMA ASSOCIATED AND MORTALITY IN SEVERE TRAUMATIC BRAIN INJURY

ET Martins, TS Silva, JN Meinertz, LA Rigo
ICU-Hospital Governador Celso Ramos-Florianopolis

BACKGROUND: The relationship between multiple traumas and severe traumatic brain injury (TBI), when compared with the mortality, not always is sinergic. In the last decade several centers demonstrated a progressive decline in the mortality in serious TBI, due to a better pre and intra-hospital attendance.
OBJECTIVES: To describe the relationship between serious TBI and mortality in patients with and without associated traumas.
METHOD: All the patients admitted with serious TBI was evaluated (CGS <9) in a public ICU, reference in neurotrauma in Florianopolis metropolitan area-Brazil, in the period of January 1994 to December of 2004. Seventy forty nine patients were analyzed and related with the presence of associated traumas and the in-hospital mortality.
RESULTS: Of the 749 patients with severe TBI, 42.32% (317) had associated trauma and 57.68% (432) patients presented isolated TBI. The associated traumas were: 43.4% in members, 33.15% in the thorax, 17.87% in the abdomen and 4.26% in cervical spinal cord. Marhall IV (hemispheric swelling) and Subdural hematomas were more frequent in isolated severe brain trauma.
The in-hospital mortality was of 33.24%. In the patients with TBI only, the mortality was of 36.81% and with associated trauma it was 28.39%. $P < 0,01$.
CONCLUSIONS: Our study demonstrated, unlike the initial impression, that the presence of associated trauma didn't increase the mortality in the patients with serious TBI. The possible explanations considered is that the patient polytrauma with serious TBI admitted in ICU is being better surgical and clinically handled. The possibility of the occurrence of the polytrauma influence in the evaluation of the Glasgow Coma Scale maybe due to the severity of initial TBI in these patients with isolated serious TBI. The high concentration of kinetic energy in the cranial segment, increase the gravity of the trauma in this subject

0505 INTENSIVE CONTROL OF GLYCEMIA THROUGH ADAPTED PROTOCOL AT PRIVATE HOSPITAL

JA Victorino, M Paggi, C Ribeiro, FI Farias, MC Moraes
Hospital Mãe de Deus, Porto Alegre, RS, Brazil

Background: Studies have been demonstrating that a more rigorous glicemic control can bring benefits for certain groups of patients. Few publications with clear demonstrations of the method, including costs and monitorization, dificults its implementation in practice.
Objectives: To describe the implantation of specific protocol for glycemic control in selected cases (sepsis and surgical critical ill patients) in a period of 16 months.
Methods: Cohorte type intention to treat. The protocol based on the study of Van den Berghe with adaptations. Initially trainings were accomplished with the nursing team and initiate application in a pilot study of 20 patient, being extended the other patients after evaluation of the first results. The capillary glycemia was monitored instead of arterial and patient without glucose contribution received intravenous infusion of dextrose solution to 8 grams/hour. Continuous regular insulin in infusion bomb with the objective of maintaining glycemia among 80 to 110 mg/dl was prescribed. If plasma glucose falls 40 mg/dl the infusion was interrupted and glucose 50% 40 ml IV was administered, with new control every 15 minutes until the new safe level.
Results: The 47 patients included in the insulin protocol presented medium 68 years , APACHE II of 23, , and 64% were male, with 83% presented sepsis diagnosis, high differently from the original study, and 19% possessed diagnosis of DM. Counted 14 patient that used TPN, 23 with vasoactive drugs, 7 with glucocorticoid, 25 in dialysis (53% of the total) and 44 in mechanical ventilaton that were all considered as potential risk factor for the hiperglycemia development. Of these just the use of continuous veno-venous dialysis has significancy as a risk factor of severe hyperglycemia ($p < 0,001$) with dosis greater than 100U/day. The medium number of hours to reach the target objective from 80 to 100mg of plasma glucose, in 98% of the patients, was 9,4 hours (dp=6,4 h), while Van gives Bergh reached the same objective in 100% of the patients of 24:00. The maximum median number of U/h was 26 and the medium number of hours of infusion was of 210:00 h (9 days). 11,7% of the patients stayed in ICU for more than 14 days with plasma glucose control, similar to the data of the original study that it reached 11,4%. Of the 20 patients that presented hypoglicemic episodes below 40 during the protocol, 5 presented more than 1, totaling up to 21 episodes. 42% of the patients presented some hypoglycemic episode, and only 12% of the episodes were below 40mg/dl. The study mortality was 53% and ICU global mortality in the same period was 14%.
Conclusions: In spite of the limitations imposed by the high registered rate of serious hypoglycemic episodes and high medium maximum use of U/day of insulin, the studied populations was not comparable for its different morbidity and seriouness, comparing the APACHE II and sepse casuistry. However, it is done necessary the publication of protocols of insuline intensive therapy, more practice and with smaller cost, for these patients.

0506 DISTRIBUTION OF OPEN AND CLOSED ICU AND HIGH CARE FACILITIES IN SOUTH AFRICA

J Scribante[1], S Bhagwanjee[1], H Perrie[1], SA Cssa Council[2]
1 University of the Witwatersrand, Johannesburg, South Africa; 2 Critical Care Society of Southern Africa

Introduction: The Critical Care Society of Southern Africa (CCSSA) has undertaken to develop a strategic plan to reorganise the discipline in South Africa. A comprehensive description of all ICU and High Care (HC) resources in the country is a critical input to this process.
Objectives: The aim of the study was to describe in depth the critical care resources in public and private sectors hospitals of South Africa. The objectives of this specific part of the overall study were to:
- determine the number of open and closed ICU/HC facilities;
- describe the distribution of open and closed ICU/HC facilities; and
- determine how many facilities comply with a pre-defined "ideal closed unit" standard.

Methods: A prospective, descriptive non-interventive observational study method was used. Approval for the study was obtained from all university ethics committees (eight) in South Africa, the appropriate national and provincial health authorities, respective private hospital groups and the management at each individual hospital before proceeding with the study. An eleven page questionnaire and a detailed guideline was developed and validated. The study population included all public and private ICU/HC units in South Africa. The data was sourced from either the most senior medical and/or nursing staff member in every ICU/HC unit. The questionnaires were quality reviewed by either one of two researchers who clarified any discrepancies with the relevant contact person(s). A closed unit was regarded as a unit with a medical director. An ideal standard was developed by the researchers which requires that the a qualified Intensivist as unit manager, a qualified critical care nurse as unit nursing manager, minimum equipment needs as mandated by the CCSSA and that the unit not be located within a ward.
Results: A 100% sample was achieved. There are 635 hospitals in South Africa of which 379 (60%) are public and 256 (40%) are private sector. There are 93 (25%) public and 216 (84%) private sector hospitals with ICU/HC units. Some 56% of the public sector units are closed units compared to only 4% in the private sector. In the public sector open units are mostly found in level 1 (community) and level 2 (regional) hospitals. The majority of closed units in the public sector are in level 3 (tertiary) hospitals. The researchers compiled an evaluation standard against which ideal closed unit compliance could be measured. Only 10% of ICU/HC units in South Africa met the requirements.
Conclusion: The prevalence of open units in South Africa is very high whilst units that meet the ideal closed unit standard are low. This problem is especially prominent in the private sector. This distribution of resources should be addressed at national level as there is sufficient international data confirming that closed units staffed with appropriate staff has a positive influence on patient outcomes.

0507 FULMINANT HEPATIC FAILURE FOLLOWING TREATMENT WITH L-ASPARAGINASE

EJ Troster, DSF Oliveira, GA Costa, CF Oliveira, FAC Vaz, HH Miyamoto
Instituto da Criança - University of São Paulo - Brazil

BACKGROUND: Hepatotoxicity is a relatively common complication during leukemia treatment and can be caused by blood components, related infections and by adverse effects of chemotherapy drugs. Hepatotoxic effects of asparaginase have been documented in humans and animals, however severe dysfunction are not common and there is only one reported case of fulminant hepatic failure.
OBJECTIVES: To report a case of a child with fulminant hepatic failure during treatment with l-asparaginase.
METHODS: Case report and review of literature.
RESULTS: 5 years-old girl recently diagnosed an acute lymphoid leukemia (ALL). According to ALL treatment protocol, she started on corticosteroids and received vincristine (3 doses), daunorubicine (3 doses) and L-asparaginase (5 doses). After the 5th dose of L-asparaginase, she was admitted to the ER with abdominal pain and hepatomegaly, and laboratory investigations showed AST = 5872 IU/L, ALT = 3031 IU/L, gamma-glutamyl transferase = 259 IU/L, total bilirubin level of 4.7 mg%, prothrombin time of 50.4 seconds (normal control = 13.7 seconds), INR of 4.53, activated partial thromboplastin time of 211 seconds (normal control = 27.3 seconds). One week before, she had INR of 1.05, AST = 16 IU/L and ALT = 58 IU/L. She was transferred to the Intensive Care Unit with massive bleeding, hypovolemic shock and altered mental status. Even with hemodynamic and ventilatory support, she persisted with bleeding and hypotension, despite blood components transfusion and vasoactive drugs. She died 12 hours after ICU admission and autopsy revealed pulmonary hemorrhage, meningeal hemorrhage and subtotal liver necrosis.
DISCUSSION: L-Asparaginase deaminates asparagine to asparatic acid and ammonia in plasma and extracellular fluid and deprives tumor cells of this essential amino acid. Adverse reactions associated to L-asparaginase include hepatotoxicity, nephropathy, neurological dysfunction, endocrine and metabolic disturbs, coagulopathy, thrombosis, hemorrhage, decreased platelet aggregation and hemolytic anemia. Hepatic steatosis has been documented in 50% to 90% of the patients that received L-asparaginase and severity seems to be related to duration of treatment. It is also noted that L-asparaginase can lead to hepatocytes necrosis. The toxicity increases when it is associated with other chemotherapy drugs as vincristine, prednisone, arabinoside-C, mercaptopurine and cyclophospamide. In our case, L-asparaginase was administer associated with vincristine and daunorubicine and there are very few reports of hepatotoxicity induced by these two drugs.
CONCLUSION: Administration of L-asparaginase in children can be associated with hepatotoxicity and fulminant hepatic failure.

0508 PROGNOSTICS FACTORS OF IN HOSPITAL MORTALITY IN SEVERE HEAD TRAUMA: STUDY OF 749 CASES

ET Martins[1], JN Meinertz[1], LA Rigo[1], TS Silva[1], R Walz[2]
1 Hospital Governador Celso Ramos; 2 Federal University of Santa Catarina

BACKGROUNDS: Head trauma is an important cause of world morbi-letality, especially in Brazil, the medical literature need many more studies determining the importance of independent risk factors in the prediction of mortality in severe head-trauma.
OBJECTIVES; To identify the factors independent to prognostics for mortality in-hospital in severe head trauma.
METHODS: All patients were included (N: 749) with serious head trauma (GCS<9) assisted in the Hospital Governador Celso Ramos, in the period of January of 1994 to December of 2004.Analysis Multivariable was accomplished trough regression multiple logistic. The dependent variable was in-hospital mortality.The independent variables were ,Glasgow Coma Scale in the admission, Marshall Tomographic classification, type of intracranial mass lesion, t -SAH an others associated traumas.
RESULTS: Men represented 81.31 %(609) of the cases, The average of the age was 36.3 years, in hospital mortality was 33,24 %.The analysis for multiple logistic regression evidenced that higher age group (p<0.005),Glasgow Coma Scale (p<0,001, Marshall Classification (M4 <0.04 -M6 p<0.001), mydriasis and anisocoria (p< 0.0001).t- SAH and isolated head trauma (p<0.01) were independent risk factors to predict the mortality intra-hospitalar.
CONCLUSIONS; Increasing age, lower GCS scores in the admission, Marshall Classification, Type of intra-cranial mass lesion, pupils, t-SAH and isolated head trauma(p<0.01) were independent risk factors of mortality in hospital mortality in severe head trauma

0509 ACUTE UPPER GASTROINTESTINAL BLEEDING (AUGB) IN ICU

L Vetere, P Farina, L De Janon, S Arcieri, P Cueto Quintana, R Gilardino, J Gonzalez, A Rodriguez, R Cherjovsky
Universidad Abierta Interamericana - Hospital Universitario. Buenos Aires - Argentina

Objectives: To study the incidence of AUGB as cause of ICU admission, to analyze mortality and patients distribution according to AUGB severity, to determinate etiological source of bleeding by urgent gastrointestinal endoscopy (UGE).
Design: Prospective, descriptive, observational study.
Setting: 9 beds medical-surgical (non cardiological) ICU of an university hospital in Buenos Aires.
Methods: In all patients admitted over 21-month period (April 2003–January 2005) demographic data, cause of admission and APACHE II were collected. On admission UGB was defined as: melena, hematoquezia, hematemesis or bloody aspirate through a nasogastric tube. All enrolled patients underwent urgent UGE in the first 24 h. The severity of bleeding was characterized according to homodynamic changes as: non clinically important, moderate or severe. All patients received same medical treatment (volume resuscitation, transfusions, intravenously histamine blockers or proton-pump inhibitors). Were recorded: mortality, severity, source and global rate of bleeding. Categorical data were analysed by "chi" square test using the Analyse-it for Microsoft Excel software. A "p" values <0.05 was considered statistically significant.
Results: 935 patients were admitted, 180 were excluded due to ICU length of stay (LOS)<24 h. 718 patients were admitted without AUGB, this group showed: 380 males (53.4%), median ages 63.4 ±17.9, median APACHE II 10.4±5.92, LOS 6.20±6.09, mortality 22% (158). Thirty seven patients (4.9%) were admitted with AUGB, 23 were males (61.2%). The median age was 66.2±11.27, median APACHE II 8.45±3.7, LOS was 4.02±3.41. Overall mortality was 10.8% (4/37). Between groups with and without AUGB non statistically significant differences were recorded. Surgical treatment was carried in one patient (2.7%). Re-bleeding rate was 13.5% (5). UGE reported: acute gastroduodenal mucosal lesions 48.6% (18), gastric ulcer 24.3% (9), duodenal ulcer 13.5% (5), vascular duodenal ectasy 5.4% (2), papillae bleeding 5.4% (2), Mallory Weiss tear 2.7% (1) and miscellaneous 2.7% (1). UGE was not conclusive only in one patient. Eleven patients (29.7%) underwent endoscopic therapy. Non clinical important bleeding was observed in 14 patients (37.8%), moderate in 15 patients (40.5%) and severe in 8 patients (21.6%). The immediate causes of death were hypovolemic shock (3/4,75%) and multiorgan dysfunction (1/4,25%).
Conclusions: Global rate of UGB was 4.9%. Mortality rate was 10.8%. UGE was usefully for diagnosis in 97.3% and allowed endoscopic therapy in 29.7%. Acute gastroduodenal mucosal lesions were most observed endoscopical finds.

0510 MEDICAL AND NURSING PROFILE OF ICU/HC PRACTITIONERS IN SOUTH AFRICA

J Scribante[1], S Bhagwanjee[1], H Perrie[1], SA Ccssa Council[2]
1 University of the Witwatersrand, Johannesburg, South Africa; 2 Critical Care Society of Southern Africa

Introduction: The Critical Care Society of Southern Africa (CCSSA) has undertaken to develop a strategic plan to reorganise the discipline in South Africa. A comprehensive description of all ICU and High Care (HC) resources in the country is a critical input to this process.
Objectives: The aim of the study was to describe in depth the critical care resources in public and private sectors hospitals of South Africa. The objectives of this specific part of the overall study were to:
- describe the profile of the doctors working in ICU/HC units; and
- describe the profile of nurses working in ICU/HC units;

Methods: A prospective, descriptive non-interventive observational study method was used. Approval for the study was obtained from all eight-university ethics committees in South Africa, the appropriate health authorities, private hospital groups and respective hospital management before proceeding with the study. An 11page questionnaire plus a guideline was developed and validated. The study population included all public and private ICU's in South Africa. The data was sourced from either the most senior medical and or nursing staff member in every ICU/HC. The questionnaires were reviewed by one of two researchers who verified all discrepancies with the contact person(s).
Results: A 100% sample was achieved. Some 3.1% of specialists are intensivists whilst 92% of medical directors of units are specialists that have more than four years of experience of which 86% are full-time appointees. Intensivists are rarely the primary doctor. In the private sector the primary doctor is typically a specialist. In the public sector primary doctors an equal distribution of specialists and general practitioners were found.
Some 84% nurse unit managers are trained ICU nurses and have more than eight years ICU experience. Only 25.6% nurses working in ICU are ICU trained nurses and 65% of the trained ICU nurses work in the private sector. Some 21.4% of nurses are drawn from the ranks of semi-professional nurses. There are only 3.8% neonatal trained nurses. Registered nurses represent the largest part of the population and are in practice relatively inexperienced, they have 0-5 years of experience. Agency nursing staff is used in two provinces and by all the private groups. A detailed profile of agency nursing staff could not be developed due to incomplete data and poor record keeping. We found that 35% of nurses working in units that use agency staff were agency employed staff.
Conclusion: In South Africa there is a marked shortage of intensivist and trained ICU nurses for the available ICU facilities. The use of agency (non permanent) nursing staff is not ideal. There is substantial evidence in the literature that shows that intensivists and trained ICU nurses have a positive influence on patient outcomes. The results from this study will be used to assist the health authorities in planning appropriate human resources for ICU.

0511 EFFICIENCY AND SAFETY OF A GLUCOSE CONTROL PROTOCOL IN A MEDICAL-SURGICAL ICU

FAC Alves, RV Cremonese, TF Tonietto, JH Barth, RP Oliveira, SFM Brodt, C Teixeira, ES Oliveira, C Viscaychipi, S Pannenbecker, NG Rockenback, S Medeiros, ES Silva, NB Silva
Intensive Care Unit of Hospital Moinhos de Vento – Porto Alegre, Rio Grande do Sul, Brazil

Background: Recent data from clinical trials points towards improvement in prognosis when glucose is maintained in a strict target-range. It's expected to achieve this goal when the joint work of the medical and nurse team in the intensive care unit follows a standardized protocol.
Objectives: Evaluate the efficiency of the protocol to maintain the glucose in the target-range and the safety of the intensive insulin therapy.
Methods: The data from the insulin protocol flow-sheets were reviewed retrospectively to verify the time in which glucose was maintained in different ranges. The protocol goal was to keep the glucose in the range of 80-110 mg/dL. The incidence of hypoglycemia (glucose lower than 60mg/dL) and the use of rescue glucose infusion were also reviewed. All patients were using enteral feeding with a maximal pause interval of 1 hour.
Results: A total of 504 capillary blood samples, using the Accu-Check Inform, were analyzed in a 2 month period interval of initial utilization. The protocol proved to be safe with measures below 60mg/dL (hypoglycemia) occurring in just 2 (0.4%) occasions, without symptoms. Were used 1.4 rescue glucose infusions per day and 1.3 interruptions/day in the insulin infusion. The target range of 80-110 mg/dL was achieved in 232 (46.03%) glucose tests and In 29 (5.75%) measures the glucose stayed between 60-80. Despite the straight target glucose range there were 204 (40.47%) measures between 110-150 mg/dL; however just 37 (7.34%) measures stayed over the value of 150mg/dL, considered by the Surviving Sepsis Campaign to be avoided in the majority of ICU patients. Took together, the values in the range of 60-150 mg/dL totalized 465 (92.25%). Over 50% of glucose test were below 110 mg/dL.
Conclusion: We concluded that our protocol is safe and practical, requiring low doses of rescue glucose and infrequent interruptions. Despite our objective to keep the glucose between 80-110 mg/dL, almost half of measures occurred in the range of 110–150 mg/dL, witch could be explained by values measured just after infusion had started or could represent the counterbalance of the protocol safety. The intensive insulin control below 150 mg/dL is considered desirable for the majority of ICU patients, and it could be achieved with our protocol in almost the totality of patients like described in issues about glucose control.

0512 WHICH IS THE OPTIMAL DURATION OF ANTIBIOTIC TREATMENT FOR VENTILATOR ASSOCIATED PNEUMONIA? PROSPECTIVE, RANDOMIZED STUDY

J Pontet[1], J Medina[2], C Formento[1], M Berro[2], A Curbelo[2], S Bentancourt[1], J Gerez[2], H Correa[3]
1 Intensive Care Unit Hospital Pasteur; 2 Intensive Care Unit Hospital Policial; 3 Faculty of Medicine. Montevideo, Uruguay

BACKGROUND: The optimal duration of antibiotic treatment for the Ventilator Associated Pneumonia (VAP) is controversial. A treatment that is too short increases the percentage of pneumonias that are not cured and the relapse; while a too long treatment could be deleterious for the bacterial ecology, implies more risk of toxicities and is costly.
OBJECTIVES: determine if a shorter treatment (8days) is as effective as a conventional one (12 days).
METHODS: prospective, clinical, randomized study.
Patient selection: This study was conducted in two ICUs at Hospital Pasteur and Hospital Policial in Montevideo, Uruguay. Hospital Pasteur is a 23-bed medical-surgical ICU with 10 ventilated beds. Hospital Policial is a 14 medical surgical ICU with 8 ventilated beds. Hospital Pasteur is a general surgical ICU but differing from Hospital Policial it does not include neurosurgery. Patients that were mechanically ventilated for more than 48 hours with microbiologically proven VAP were included. VAP treated insufficiently (<6 days) were excluded)
VAP was diagnose with new and persistent infiltrate in chest radiographs, classic clinical criteria plus 1 or more of the following: bronchoalveolar lavage (BAL) > 104 ufc/ml or Positive tracheal aspirates plus Clinical pulmonary infection score (CPIS) > 6 or microorganism isolated in > 2 blood cultures with identical sensitivity to tracheal secretions and in absence of other possible infection. The primary and secondary endpoints were to evaluate the mortality and the bacteriological and clinical responses. The Ethic Committee of the Medicine University approved this study.
RESULTS: 105 VAP were enrolled. 73 of them were confirmed. Five were not treated and five died soon, so these were excluded.
63 VAP were randomized in group A (8 days, n= 32) and group B (12 days, n= 31). The two groups were similar, taking into account: age, gender, previous illness (Mc Cabe and Jackson classifications), disease at the time of ICU admission, previous antibiotics, Acute Physiology and Chronic Health Evaluation II (APACHE II), Multiple Organ Dysfunction Score (MODS), Sepsis-related organ failure assessment (SOFA) scores, the day on which the VAP was diagnosed, diagnostic tool used, severity of the pneumonia and etiology.
The primary results of this study (Table) showed that there were not differences in the crude mortality, clinical response to therapy, therapeutic failure, eradication, persistence of the bacteria, superinfection and duration of the mechanical ventilation. The microorganisms found in group A were similar to those in group B.
With respect to the antibiotic costs, group B expends 195 more dollars for patient than group A (hospital prices) (p=0,009).
CONCLUSIONS This results supports that it is not necessary a long therapy to cure VAP. An 8 days therapy has similar efficacy than a 12 days one with lower costs. This shorter treatment could also decrease the emergence of antimicrobial resistance.

RESULTS	Group A. n(%)	Group B. n(%)	p
Crude mortality	8 (25)	10 (32)	0.58
Related mortality	6 (19)	8 (26)	0.55
Clinical resolution VAP	21 (66)	23 (74)	0.58
Therapeutic failure	9 (28)	3 (10)	0.10
Bacteriological eradication	21 (66)	20 (65)	1.0
Persistence	3 (9)	4 (13)	0.71
Relapse	1 (3)	1 (3)	1.0
Mechanical ventilation (days)	22 ± 11	21 ± 11	0.48
Antibiotic costs	324 ± 220	519 ± 344	0.009

0513 MACROPHAGE MIGRATION INHIBITORY FACTOR VALUE IN CRUSH SYNDROME

R Azevedo, C David, E Assis, P Bozza
Universidade Federal do Rio de Janeiro e Fundação Instituto Oswaldo Cruz, Rio de Janeiro, RJ, Brasil

Background: Macrophage migration inhibitory factor (MIF) is a multifunctional cytokine involved in a broad-spectrum pathological events relevant to the immune system.Crush syndrome has been described as the systemic manifestation of muscle cell damage resulting from pressing or crushing. There is no data correlating MIF and crush syndrome.The aim of this study was to evaluate the possible role of MIF in crush syndrome.
Objective: To determine serum concentrations of MIF in crush syndrome patients and to evaluate its association with clinical evolution.
Methods: Four pacients suffering from crush syndrome after an accident with an explosive artifact were enrolled in the study. Serum MIF and creatinine kinase (CK) were measured for six consecutive days and the Sepsis-Related Organ Failure Assessment (SOFA) score was evaluated concomitantly. The MIF, CK and SOFA were compared.
Results: The MIF medium were 1426, 1518, 1759, 2070, 1235 and 1306 pg/ml; the CK medium were 2355, 5149, 3828, 3301, 3070 and 1458 U/l; the SOFA score medium were 3, 3, 3.75, 4, 3 and 2.67 in the six consective days. It was observed a correlation among MIF and SOFA score.
Conclusion: Our data suggest that the serum MIF is closely linked to clinical evolution in crush syndrome.

0514 NON INVASIVE VENTILATION IN PEDIATRIC INTENSIVE CARE UNIT

R Paiva, P Zambrano, M Drago, R Villena
Hospital Dr. Exequiel Gonzalez Cortes

INTRODUCTION: Noninvasive positive pressure ventilation (NPPV) is an
alternative treatment for patients admitted to hospital with respitatory diseases. In the last decade NPPV has been increasingly used in Pediatrics Intensive Care Unit (PICU). Advantages of non-invasive mechanical ventilation via mask includes avoidance of complications, (pneumoniae associated mechanical ventilation, tracheal injury, barotraumas). Failure rates 9% and 50% have been reported
OBJECTIVE: To evaluate the initial experience in the use of non invasive ventilation in the Pediatric Intensive Care Unit (PICU) of Hospital Dr. Exequiel Gonzalez Cortes in children with acute and chronic respiratory diseases during a period of two years.
PATIENTS AND METHOD Retrospective study of patients that used NPPV in PICU of Hospital Dr. Exequiel Gonzalez Cortes since 2001 to 2003. We analyzed demographics features, indications, modality, treatment failures and mortality.
RESULTS: 112 cases were reviewed 62% men, the average of age was 7.4 years (8 months to 14.8 years), having a slow weight of 10 kg 23%. 87% had acute respiratory failure and 13% chronic respiratory failure. The acute pictures are: bronchial obstructive syndrome, acute laryngitis, postsurgical respiratory depressions and acute pneumopathy, aspirative pneumoniae (87%); the chronic pathologies were: Duchenne disease, Miastenia Gravis, Myopathies, Sleep apnea, Cerebral Palsy with acute respiratory picture and deformed thorax, chronic pulmonary Damage, Imperfect Osteogenesis. 18% was secondary to intolerancy , requirement of Invasive Mechanical Ventilation. Use like interphase nasobucal mask in 89%, 9.2% nasal, and in the 1.7% facial mask.
Sedación was used in 63% mainly in patients with age between 2 and 5 years (82%), being the drugs more used the Cloral Hydrate and Midazolam, In three cases took place respiratory depression by its use (children with chronic neurological pathology). Complications by the VMNI use 17%(19): irritativa conjuntivitis (8), interciliary ulcera (4), nasal bridge ulcera(2), gastric distention(2). Phenumothorax (3) in patients with severe obstructive disease, two had pneumomediastine previous connection to NPPV. Mortality was 7,1% (8) 7 with terminal chronic pathology, and 1 with severe bronchial obstruction.
The relapse was 17%, all with respiratory acute disease. The average of days in NPPV was 2,6 for acute disease and 22 days for chronic respiratory disease. The averages of FiO2 before the connection was 55%, and before retire of NPPV 38%.
Conclusions: The NPPV is a safe method in acute and chronic pulmonary pathologies; the mortality is frequent in patients in terminal chronic pathologies.

0515 CHARACTERISTICS OF CHILDREN WITH SEPTIC SHOCK AND MULTIPLE ORGAN DYSFUNCTION SYNDROME ACCORDING TO TWO CLINICAL SCORES

D Souza, A Ventura, I Fernandes, S Shin, P Goes, A Bousso
Pediatric Intensive Care Unit - University Hospital - University of São Paulo

Objectives: Describe the clinical characteristics of the multiple organ dysfunction syndrome (MODS) in septic shock patients according to the PELOD score and the Wilkinson criteria.
Methods: We undertook a retrospective cohort during the period of Ago/2001 and Apr/2004 including all patients with septic shock according to the ACCP/SCCM (1992) criteria, excluding newborn babies. We applied two MODS scores. The PELOD score and the Wilkinson score. The score results were compared with the observed mortality. All characteristics of survivors and non-survivors were analyzed in terms of means and standard deviations. Statistical analysis included the chi-square test and variation analysis considering results significant when $p < 0.05$.
Results: During the study period we included 62 patients. Mortality rate was 38.7%. We observed that patients who did not survive presented with a significantly higher risk of mortality score (PRISM) and a significantly shorter length of stay in the ICU ($p<0.000001$). There were no differences in the mean number of dysfunction organs in each survivor or non-survivor groups or between the groups using both MODS scores. According to the Wilkinson score the most frequently found organ dysfunctions in both groups were respiratory ($p=0.76$); cardiovascular ($p=0.52$) and hematologic ($p=0.13$). According to the PELOD score the most frequently found organ dysfunctions for both groups were respiratory ($p=0.85$); cardiovascular ($p=0.76$) and hepatic ($p=0.83$). There was a significant difference in the PELOD score during the ICU stay between survivors (5.9±0.9) and non-survivors (19.7±7.7) ($p=0.007$).
Conclusions: We could not observe differences in the type of organ dysfunctions in survivors and non-survivors using the PELOD or Wilkinson score. In survivors and non-survivors the most frequently observed dysfunctions were respiratory and cardiovascular according to both MODS scores. The mean PELOD score during the ICU stay showed a significant difference between survivors and non-survivors.

0516 DEMOGRAPHIC DISTRIBUTION OF ICU AND HIGH CARE FACILITIES IN SOUTH AFRICA

H Perrie[1], J Scribante[1], S Bhagwanjee[1], SA Ccssa Council[2]
1 University of the Witwatersrand, Johannesburg, South Africa; 2 CCSSA

Introduction: The Critical Care Society of Southern Africa (CCSSA) has undertaken to develop a strategic plan to reorganise the discipline in South Africa. A comprehensive description of all ICU and High Care (HC) resources in the country is a critical input to this process.
Objectives: The aim of the study was to describe in depth the critical care resources in public and private sectors hospitals of South Africa. The objectives of this specific part of the overall study were to describe the distribution of ICU and HC units in the public and private sector in South Africa.
Methods: A prospective, descriptive non-interventive observational study method was used. Approval for the study was obtained from all eight-university ethics committees in South Africa, the appropriate health authorities, private hospital groups and respective hospital management before proceeding with the study. An 11 page questionnaire plus a guideline was developed and validated. The study population included all public and private ICU's in South Africa. The data was sourced from either the most senior medical and or nursing staff member in every ICU/HC. The questionnaires were reviewed by one of two researchers who verified all discrepancies with the contact person(s).
Results: There are 210 ICUs and HC units in the public sector compared to 238 units in the private sector. There are differences in provincial distribution of units. Limpopo, Mpumulanga, Northern Cape and North West province have less than 10 public sector units per province. The majority of public sector units are located in Gauteng (26.5%), KwaZulu Natal (20%) and the Western Cape (18.1%). The Free State (8.6%) and Eastern Cape (10.5%) represent a middle category of unit distribution. The pattern of distribution is similar for the public and private sectors.
Conclusion: The results from this study illustrate the complex South African dichotomy. There is a mal distribution of units between provinces in both the public and private sector. The results from this study, together with other appropriate information (population distribution, disease profile, etc.) will assist the health authorities plan a more optimal distribution of future ICU/HC facilities.

0518 NURSING ACTIVITIES SCORE(NAS): AN APPLICATION METHOD

LA Gonçalves[1], KG Padilha[2]
1 Hospital Universitário da USP; 2 Escola de Enfermagem da USP

Background: NAS is an instrument used to measure the workload of nursing staff in the Intensive Care Unit. The difficult faced in filling out the instrument and the necessity of making its application available led us to develop this proposal.
Objectives: To standardize NAS application, through language standardization among ICU nurses and adapt the time consume spent to carry out particular items according to the reality.
Method: The study was carried out in an ICU in a Med-school in the city of São Paulo (Brazil). 13(72.2%) nurses took part of the standardization phase in NAS daily data collection. At first, meetings were carried out in order to a better familiarization with the instrument. After that, each nurse recorded in a form, the estimate time spent to realize NAS sub-items concerning time in either 6 or 12-hour duty. Based on that, the average time spent with relevant items was calculated.
Results and conclusions: The methodology applied enabled us to design NAS-AMENDMENT form with time standardization to carry out nursing tasks by work shift (morning, afternoon and night) particular to that ICU. Besides that, each item in the instrument that contributed to a more reliable data collection was operationally defined.

0519 HIGH FREQUENCY OSCILLATORY VENTILATION AND INTRAOPERATIVE USE IN PEDIATRICS PATIENTS. CASES REPORTS

A Donoso[1], P Cruces[1], F Saitúa[2], P Herrera[2], J Camacho[1]
1 Area de Cuidados Críticos Hospital Padre Hurtado Santiago Chile; 2 Servicio de Cirugía Pediátrica Hospital Padre Hurtado Santiago Chile

Background: In an effort to decrease morbidity and mortality, newer modes of mechanical ventilation have been introduced into the critical care when conventional ventilation fails. One such technique is high frequency oscillatory ventilation (HFOV). Despite the frequent application of this technique in the PICU setting, there is limited information concerning its intraoperative use.
Objectives: We report two children ventilated by HFOV while stay in PICU, for the management of high a high output bronchopleural fistula (BPF) and pulmonary biopsy for limited therapy, respectively.
Case 1: A 5-year-old boy developed septic shock, MOF and ARDS, requiring the initiation of HFOV (IOx: 56). After initial improvement, his respiratory status deteriorated by high output bronchopleural fistula refractary to HFOV. He was scheduled for left -sided thoracotomy (7th day). In the operating room, the MAP was 22 cm H20 and frequency of 8Hz. Anaesthesia was induced with fentanyl (20 µg/kg) and neuromuscular blockade provided with atracurium (2.75mg/kg). The surgical procedure lasted 150 min, without problems, oxygen saturation ranged from 95 -97% and pCO2 43-48 mmHg. Following the procedure, the patient was switched to conventional mechanical ventilation (4th post op.) and was weaned and extubated over 2 weeks. The remainder oh his postoperative course was unremarkable. Discharge home from the hospital (5 week).
Case 2: A 9-day-old, 41-week gestation male infant developed ARDS, requiring the initiation HFOV (IOx: 29). BAL lavage and cultives are negatives. His evolution was to torpid by diffuse and persistent barotrauma. CT scan demonstrates diffuse interstitial emphysema. He was scheduled by open lung biopsy (bed-side) (23 th day). The MAP was settled a 21 cm H20 and frequency of 10 Hz. Anaesthesia was induced with fentanyl (3 µg/kg/h) and neuromuscular blockade provided with vecuronium (0.4 mg/kg/h). The surgical procedure lasted 60 min. After the procedure the patient stayed in HFOV. Lung biopsy confirms Surfactant protein B (SP-B) deficiency. Treatment was withdrawn (28 th day in HFOV) and the infant died. Genetic counsel was given.
Conclusions: HFOV allowed proceeding in patient who may have been too instable and changed therapeutic option. This mode of ventilation may be useful intraoperative in critical care patients and should be familiar to anesthesiologist and surgeon who take part in the treatment of those infants.

0520 GLYCEMIA AS A PREDICTOR FACTOR FOR ADULT PATIENTS ADMITTED IN A INTENSIVE CARE UNIT

V Urbieta, H Bianco, B Fiigueredo, C Ayala, J Rufinelli Vera, E Bueno, A Benitez
Hospital de Clinicas/Asuncion/Paraguay

Objective: to determine the relationship between glycemia values of patients admitted to an Adult Intensive Care Unit (AICU) and their following evolution.
Methods: a retrospective revision by random sampling of the medical files of patients admitted to an AICU from 1999 to 2003. The patients were evaluated according to their different levels of glycemia in mg/dl (G1: ≤65; G2: 66 to 79; G3: 80 to 199 and G4: ≥200).
Results: The medical files of 413 patients admitted to an AICU were evaluated. Average age was 48.89±19 years; 53.3% were men and glycemia mean value at the admission was 168.8 mg/dl (±93). Approximately twelve percent (11.9%) of the patients was known diabetics. At the admission, Score Apache II was: 16 (±9), SAPS II: 34 (±21) with a global mortality of 39.7%. Hospital-acquired infections were seen in 22.8% of patients. Mortality was 49.5% in G4 versus 35.4% in G3 (OR:1.79, p:0.01). Hospital-acquired infections were seen in 16.2% of G4 versus 26.4% of G3 (OR:0.53, p:0.03). Mortality in programmed surgeries was 30.6% in G4 versus 14.7% in G3 (OR:2.55, p:0.04) with a significant trend in the cardiac (OR:3, p:0.11) and neurological (OR:4.5 p:0.2) surgeries. However, the difference in mortality was non-significant in abdominal programmed surgeries being 12.5 % in G4 versus 10 % in G3 (OR:4.5, p:0.7). Mortality in urgent surgeries was 44.4% in G4 versus 44.1% in G3 (OR:1.02, p:0.9). General clinical diseases presented a mortality of 76.3% in G4 versus 50% in G3 (OR:3.22, IC:1.31-8,14, p:0.004). The mortality in diabetic patients was 45% in G4 and 33% in G3 (OR:1.69, p:0.3) whereas in non-diabetic patient mortality was 51.2% and 35.7% in G4 and G3 respectively (OR:1.91, p:0.01). After an APACHE II adjustment, there was a significant difference with higher mortality in G4 than G3 if the score was higher than 24. There was not any difference in mortality if it was lower. In G4, the mortality in clinical diseases (septic shocks, coronary syndromes, cerebral and pulmonary diseases) was 76.31% and in programmed surgeries 30.55% (OR:7.32, p:0.00008) being the difference more significant in coronary diseases with a mortality of 75% in G4 versus 10% in G3 (OR:6.38, p:0.034). When comparing the group of hypoglycemia (G1:≤65 mg/dl) with the association of groups G2 and G3, there was a trend of greater mortality in G1. (OR:3.2, p:0.01).
Conclusions: the general mortality, mortality of programmed surgeries and mortality of acute coronary syndromes were significantly higher when glycemia was ≥ 200 mg/dl at admission General mortality related to glycemia ≥ 200 was indifferent to the presence of previous diabetes but it was influenced by the APACHE II score. Hospital-acquired infections were less frequent in group 4 (glycemia ≥200 mg/dl).

0521 AGREEMENT ANALYSIS BETWEEN OXYGEN SATURATION IN THE RIGHT ATRIUM AND MIXED VENOUS OXYGEN SATURATION

CA Pérez, PG Minces, PG Eulmesekian, EJ Schnitzler
Pediatric Intensive Care Unit - Hospital Italiano - Buenos Aires - Argentina

Objective: To analyze if the oxygen saturation in the right atrium ($SraO_2$) can be used as an equivalent of to the mixed venous oxygen saturation (SvO_2).
Methods: Prospective cohort study. Fifty patients, 60 % males, with a median age of 11.02 (SD ± 5.7) years. Advanced hemodynamic monitoring was performed with a pulmonary artery catheter (PAC) for the following reasons: a)-high risk postoperatory 52% (23 liver, 2 cardiac and 1 bowel transplants); b)-shock 44 % (17 septic and 5 cardiogenic) and c)-hemodynamic evaluation before cardiac transplantation 4% (2 patients). During the first 12 hours of monitoring in the PICU, matched blood samples were taken from the proximal (right atrium) and distal (pulmonary artery) ends of the catheter to determine $SraO_2$ and SvO_2 respectively by co-oxymetry. Measurements were taken initially upon admission to the PICU or after placement the PAC in the PICU, and then at 6 hours and 12 hours. The main SvO_2 determinants were recorded at each time (arterial O_2 saturation, hemoglobin concentration and cardiac index).
Results: One hundred and fifty paired determinations of $SraO_2$ and SvO_2 were performed. The median of $SraO_2$ and SvO_2 were 81% (CI 95% 79-82.4) and 80% (CI 95% 78-81.4) respectively. No differences were found between these variables (Mann-Withney test). The coefficient of determination was 0.85. The median of the difference between $SraO_2$ and SvO_2 was 1.3%. However a clinically relevant (>5%) overestimation or underestimation of the SvO_2 by Sra_2 was found in 20.7% of the determinations (Bland and Altman plot).
Conclusions: Our results show that the determination of $SraO_2$ is not equivalent to the SvO_2. Nevertheless, the $SraO_2$ could be used to estimate the SvO_2, taking into account the difficulties in determining the SvO_2 in pediatric patients.

0522 INTRODUCTION OF A RAPID SEQUENCE INTUBATION PROTOCOL: ADHESION, SUCCESS AND COMPLICATION RATES

A Ventura, D Souza, A Bousso, G Costa, I Fernandes, J Fernandes
Pediatric Intensive Care Unit - University Hospital - University of São Paulo

Objectives: Describe the adhesion rate to a rapid sequence intubation (RSI) protocol, the intubation success rates and complication rates in children admitted to a pediatric intensive care unit.
Methods: We undertook a prospective cohort during the period of May/2002 to Nov/2003 including all admitted patients that were submitted to an intubation procedure. Exclusion criteria included patients that were intubated before arrival to the PICU, patients with contra-indications for rapid sequence intubation and patients that we were unable to obtain an informed consent. The RSI protocol was presented to all medical staff and all physicians had the option to adhere or not to the protocol. All results obtained were analyzed in terms of means and standard deviations.
Results: During the study period there were 797 patients admitted to the PICU and 297 patients were intubated (23.9). Ninety-one patients were excluded for the following reasons: 71 (23.9%) were intubated before admission; 20 (6.7%) were intubated in a cardiopulmonary arrest setting and in 6 patients (2%) clinical data were incomplete. The study sample was therefore composed of 200 patients. Eighteen patients (9%) were newborns (median age = 8.8 ± 8.5 days). The other 182 patients (91%) had a mean age of 21 ± 33.1 months. Respiratory failure was the main diagnosis and indicated the intubation in 57% of the cases. The orotracheal route was employed in 80% of the patients. The second year resident accomplished the intubation procedure in 49.5%. the RSI protocol had a good adhesion rate and was employed in 156 cases (78.8%). Drugs used in the RSI protocol were: atropine and fentanyl for pre-medication in 94/156; midazolam was the main induction agent (112/156) and succinylcoline was the main neuromuscular blocking agent used (116/156). A successful intubation was obtained in 147/156 procedures with a success rate of 94.2%. There were no complication related to the intubation procedure with the RSI protocol in 115/156 whereas a drop in oxygen saturation was the most frequent complication observed (26/156).
Conclusions: We observed a good adhesion rate to the RSI protocol. The protocol was safe and permitted a high success rate in the intubation procedure even for individuals that are still being trained for the procedure.

0523 EFFECT OF MELD SCORE IN THE EVOLUTION OF PATIENTS SUBMITTED TO LIVER TRANSPLANTATION

MT Sasaki, RAB Spanó, EMC Silva, MCC Machado
Liver Unit – Department of Transplant and Liver Surgery, University of São Paulo Medical School, São Paulo, Brasil

Objectives: Analyze the effect of the MELD (model for end-stage liver disease) score at the patients with cirrhosis submitted to liver transplantation, correlating the surgery, anesthesia, ischemia time, weaning of mechanical ventilation and mortality rate.
Methods: It was analyzed retrospectively 105 patients submitted to liver transplantation at the Department of Transplant and Liver Surgery, University of São Paulo Medical School from January 2002 to January 2005. From this group were excluded patients with fulminant liver failure, familial amyloid polyneuropath and retransplantation. It was registered the values of MELD, sex and age, time of surgery, anesthesia, ischemia, weaning, total mechanical ventilation (MV) that include Intensive Care Unit + anesthesia time, number of patients who needs reintubation and retransplantation and mortality rates. From the global average of the MELD score, the patients were divided into two groups: Group A, including MELD below average and Group B including MELD above average. Data were submitted to statistical analysis through Student's t test (t) and Chi-square test (x2) with significance level p<0,05.
Results: From 71 patients studied, 41 were male (57,7%), age ranged 45,5 ± 14,5 years. Average value of the MELD score was ranged 19,21 ± 5,79 being 42 (59,1%) patients with MELD below this value (Group A) and 29 (40,84%) patients with MELD above the average (Group B). The results were registered at the table below:

	Group A (n = 42) MELD < 19,21	Group B (n = 29) MELD > 19,21	
Age	48,07 ± 14,06	41,68 ± 14,54	t = 0,07
Surgery time	09:39 ± 03:34	09:27 ± 02:48	t = 0,77
Anesthesia time	11:28 ± 03:32	11:41± 02:44	t = 0,81
Ischemia time	09:02 ± 03:02	09:18 ± 03:19	t = 0,76
Weaning time	12:03 ± 19:04	12:05 ± 08:32	t = 0,99
MV time	23:13 ± 20:16	23:40 ± 08:43	t = 0,90
Reintubation	8 (19%)	9 (31%)	x2 = 0,24
Retransplantation	7 (16%)	5 (17%)	x2 = 0,95
Mortality	8 (21%)	14 (48%)	x2 = 0,008

Conclusions: We observed that all the times were similar in the two groups and the weaning of mechanical ventilation was not interfered by the MELD score. However, patients with MELD above 19,21 have an increase statistical significance in mortality rate that confirme your severity.

0524 ANALYSIS OF THE VARIABLE ASSOCIATED TO MAP THE INCOME OF ICU MORTALITY ON THE SPONTANEOUS INTRACEREBRAL HEMATOMA (ICH)

L Camputaro, D Czerwonko, M Baccanelli, A Rabadan, O Gallesio
Hospital Italiano de Buenos Aires

Background: The spontaneous intracerebral hematoma is increasingly one of the brain-vascular events of major challenge in the intensive and neurosurgical treatments. Various analyses have shown the relationship between bad results and initial volume, presence or absence of volcado ventricular, glasgow coma scale, infra o supratentorial topography and patient's age. MAP didn't show to be a mortality predictor. Despite that, the guidelines seem to be permissive with it, suggesting a tolerance point of 130 mmhg.
Objective: Analyze the behavior of the variables on a population of intracerebral hematoma since the income MAP
Material and Methods: Retrospective analysis of a cohort of patient's admission to ICU in a18 month's period (06/01/03-12/30/04). Epidemiological data has been obtained: sex, age. Admission patient's data: Glasgow scale post reanimation, CT diagnosis: hematoma volume (AxBxC/2), presence or absence of ventricular hemorrhage, vascular clinical history, ICU length of stay and mortality. We defined two groups: A) MAP≥130 mmhg and B) MAP< 130 mmhg. All data was analyzed with STATA VII program, using test of continuous variables and chi square with Fisher exact test for ordinal ones. We performed multiple logistic regressions to identify the MAP predictor's variables, according to A or B group.
Results: We rolled 85 patients but only 78 were analyzed, the rest were rejected for incomplete data. 53.8% (42/78) were male. The average age was 68.3± 13 years.
37.2% (29/78) had vascular clinical history. Each group, A and B, included 39 patients.
The results of the analyzed variables by group were: Table I
Table I. Age, volume, GCSi, vascular history, ICU evolution by group

Group	Age SD (CI)	Volumen SD (CI)	GCSi SD (CI)	Vascular	Ventricular	Mortality
A	66.3 ±14.4	50.26 ± 24.0	9.9 ± 4.1	13/39	22/39	11/39
B	70.1 ± 11.2	64.7 ± 28.7	10 ± 4.0	16/39	13/39	19/39
p	NS	S	NS	NS	S	NS

The multiple logistic regressions analyzed indicate the age, the income volume and the presence of ventricular hemorrhage as a predictor to belong to group A.
Conclusions: The income MAP is not an ICU outcome predictor in ICH. Arterial hypotension although, it seems to be a negative event in the evolution.
In this cohort a minor volume income, more age and the presence of ventricular hemorrhage behave as a MAP predictor.

0525 RISK FACTORS FOR INTENSIVE CARE UNIT (ICU) READMISSIONS

BFC Santos, OFP Santos, LR Guastelli, CR Laselva, M Oliveira, M Cendoroglo, E Knobel
Hospital Israelita Albert Einstein

Introduction: The unexpected hospital readmissions, especially in ICU, determine increase of the hospital costs and larger mortality for the patients. However, a significant number of readmissions are potentially avoidable. Thus, the interest in the study of the factors involved in the non scheduled readmission is driven by the hypothesis that the improvement of the care can result in a reduction of the readmissions, with consequent benefits for the patients and reduction of the cost of the treatments of health.
Objective: To identify risk factors for the patients' readmission in ICU.
Material and Methods: We accomplished a study coorte, based on data of patients' interned in ICU. The internments of January 01, 1999 were analyzed to December 31, 2000 in UTI. We established two groups, the first group was composed of the patients that just presented an internment, and the second group was composed of the patients that presented two internments in UTI during the same hospital internment. For the analysis the first internments of the two groups were analyzed.
Results: In the study period 3,034 were interned patient in UTI. In this population, the readmission rate in UTI was of 10.7% and the average occupation was of 86.76% (± 4.16). The readmitted patients presented age higher average (67.5 ±15.5 years vs 63.2 ±17.2 years ;p <0.0001). The APACHE II and SAPS II higher in the readmitted group 18.7 (6.4) and 33.1 (12.9), in the group it controls 12.0 (6.3) and 27.7 (11.9) respectively, both with significant difference. The hospital and ICU LOS presented significant difference among the two groups. In the multivariate analysis, the presence of, APACHE II> 17 (p <0.0001; OR 4.14; IC 95% 3.16 – 5.44), creatinina> 2.0 in the moment of the internment (p <0.0507; OR 1.56; IC 95% 0.99 – 2.42), and ICU LOS > 5 days (p <0.0426; OR 1.42; IC 95% 1.01 – 1.98) they presented significant difference and they were identified with independent variables for readmission in UTI.
Conclusion: In the moment of the discharge of patient UTI that presented time of larger permanence than five days and in its APACHE admission larger II than 17, larger age than 65 years, creatinina larger sérica than two and origin of the setp down unit present significant risk of readmission in the ICU.

0526 THE IMPACT OF MEASURED VERSUS FIXED NITROGEN ON RESTING ENERGY EXPENDITURE IN MECHANICALLY VENTILATED PATIENTS

CC Japur, A Basile-Filho
Ribeirão Preto Medical School - University of São Paulo

Background/Objectives: The energy assessment of critically ill patients is quite important for the adequate nutritional therapy, avoiding both subnutrition or overfeeding. There are several forms to estimate or measure the resting energy expenditure (REE), therefore the indirect calorimetry is a gold standard, that measure from the consumed oxygen (VO2) and the carbon dioxide production (VCO2) in the nutrient oxidation and the urinary nitrogen excreted. The purpose of this study was to compare REE obtained from the indirect calorimetry as of theoretical (proposed by the manufacturer) and measured 24-h urinary nitrogen excretion.
Methods: Ten mechanically ventilated patients were studied in the ICU (6 women and 4 men). Mean age was 54,4 ± 21,7 years, mean APACHE II was 23 ± 9,6 and mean risk of death was 50,2 ± 28,7%. The mean of VCO2 and VO2 in two series of 45 min of the indirect calorimetry and the nitrogen urinary value in the 24-h urine output was used to calculate the REE. The data was compared with the same equation (EE= 5,5.VO2 + 1,76.VCO2 – 1,99.Nu) replacing the mean value of measured nitrogen (12.3 ± 4,5 g.day-1) instead the 13g.day-1 proposed.
Results: The REE calculated with measured nitrogen (1463,8 ± 142,4 kcal.day-1) was not different from the fixed (1462,4 ± 147,1 kcal.day-1). The difference was only 0,12 ± 0,6% (p>0.05), without any possibility of clinical implications.
Conclusions: The indirect calorimetry can be used as a very important tool to estimate the REE in the clinical practice, without the need to measure the daily nitrogen excretion in urine, due to a validation of the fixed nitrogen value, through nitrogen urinary measured of the present study.

0527 GLYCEMIC LEVEL AND INTRACRANIAL PRESSURE IN CHILDREN WITH TRAUMATIC BRAIN INJURY

RG Branco, A Weiss, RC Tasker
University of Cambridge Clinical School, Cambridge, UK

Background/Objective: Traumatic brain injury is associated with a stress response and hyperglycemia. In children, higher levels of blood glucose have been associated with worse outcome. However, this parameter is not an independent risk for mortality. Insulin therapy has recently been established as part of the treatment of critically ill adults, but its use in children remains controversial. We have therefore evaluated the relationship between levels of serum glucose in children with traumatic brain injury and the level of intracranial pressure early in the time course of intensive care. Methods: We have reviewed all children admitted to the Paediatric Intensive Care Unit (PICU) at Addembrooke's Hospital (Cambridge, UK) with diagnosis of traumatic brain injury from 1994 to 2004. During the first 6 hours of admission, mean intracranial pressure (mICP), mean cerebral perfusion pressure (mCCP), and mean glucose levels (mGlu) were calculated and presented as mean + SD. Admission peak glucose level and PICU mortality were also noted. Results: In the 10-year period there were 81 children and 8 deaths (mortality 9.9%). Children who died had significantly higher mICP (34.1 + 27.7mmHg vs 15.5 + 10.1 mmHg, p<0.05), higher mGluc (9.45 + 3.8 mmol/dl vs 6.23 + 1.8mmol/dl, p<0.05), and lower mCCP (46.7 + 17.6 mmHg vs 60.4 + 11.8 mmHg). Mean glucose showed a weak inverse correlation with mCCP (r -0.41, p<0.05) and there was no correlation with mICP (r 0.17, NS). However, when the data were grouped according to glucose therapeutic targets used in adults (i.e., glucose <6.1 mmol/dl, 6.1-8.3 mmol/dl, and >8.3mmol/dl), there was a relationship between mGluc and level of mICP. Children in the lower glucose band (<6.1mmol/dl) had lower mICP. Patients in the higher glucose bands had higher levels of mICP (13.8 + 6.2, 18.9 + 13.5, 28.9 + 26.4; p<0.05). There was no relationship between level of mCPP between the two lower glucose band (61.8 + 8.4mmH and 60.8 + 16.1mmHg). However, children in the highest band of mGluc (>8.3mmol/dl) had lower mCPP when compared to children in the lower band (<8.2 mmol/dl: 61.5 + 11.9mmHg and 51.4 + 18.1mmHg, p<0.05). Conclusion: Hyperglycemia is associated with mortality in children with traumatic brain injury. Glucose level higher than 6.1mmol/dl is also associated with increased mICP. Glucose level higher than 8.3mmol/dl is associated with lower mCPP. The presence of these associations however do not indicate causal relationship. Given the importance of glycemic-control in other fields of critical care, we believe that this relationship should be examined more clearly in those with traumatic brain injury. Our suggestion is that, perhaps, a glucose level of 8.3 mmol/dl could be a safe target for insulin therapy in the future.

0528 PERIPHERALLY INSERTED CENTRAL CATHETERS IN PEDIATRIC ACUTE AND INTENSIVE CARE PRACTICE

RG Branco, DR O'Donnell
Addenbrookes Hospital, Cambridge, UK

Background/Objective: Reliable venous access is essential in the management of acutely ill children. Peripheral catheters have short life time and do not permit infusion of solutions with high osmolarity. Central venous catheters are associated with unacceptable complication rates (e.g. infection, thrombosis) especially if used for prolonged periods. Peripherally inserted central catheters (PICCs) are an alternative for children who do not require multiple intravenous infusions, or in those who need prolonged intravenous access. However, major complications have been described in neonatal practice, e.g. cardiac tamponade (1.8%) and venous thrombosis (1 to 4%). We have audited our use of PICCs in Paediatric Intensive Care and emergency paediatric practice. Methods: We have examined, retrospectively, the records of children who had PICC inserted at Addenbrookes Hospital Children Services (Cambridge, UK) from Jan 2001 to Jan 2005. Age and weight of the child, site of placement, size of catheter, place of insertion, reason for insertion, and complications were reviewed. Results: 102 PICC were inserted in 95 children. These children were aged 4.8 + 5.2 (mean + SD). They weighed 17.7 + 15.2 Kg. The size of PICC used were 3fr, 4fr and 5fr (n= 34, 33 and 35 respectively), and we used smaller catheters in younger and smaller children. Our preferred sites of insertion were, first, the antecubital fossa (77/102) and, second, the long saphenous vein (25/102). Insertion procedures were undertaken on PICU (48%), the operating theatre (32%) and the general wards (20%). The reasons for insertion were for use of total parenteral nutrition (14.7%), prolonged antibiotic therapy (56.9%), chemotherapy (9.8%), and other needs (18.6%). There were no major complications reported (0/102, upper limit of 95% CI 3%). Conclusion: PICC line insertion is a safe and reliable alternative for prolonged intravenous access in acutely ill children.

0530 EMOTIONAL ASPECTS OF PATIENTS' RELATIVES ADMITTED TO AN INTENSIVE CARE UNIT

KA Casarini[1], EMF Seidl[2], R Gorayeb[1], A Basile-Filho[1]
1 Ribeirão Preto Medical School - University of São Paulo; 2 University of Brasília

Background/Objectives: The need for admission to an Intensive Care Unit (ICU) represents a time of crisis, especially for the relatives of the patients which requires different types of positioning for coping and overcoming. The objective of the present study was to describe the psychological experiences and the coping strategies presented by relatives of patients admitted to an ICU, during the early period of hospitalization.
Methods: This was a descriptive, prospective study using strategies of qualitative and quantitative data collection and adopting a convenience sample. The participants were selected according to the following criteria: time of patient hospitalization in the ICU, availability of the relative to come to the ICU, psychological conditions of the relative at the initial time of admission, consent of the relative and degree of involvement of the relative with the patient. A semi-structured interview and the Modes of Coping with Problems Scale (MCPS) were used to investigate the psychological experiences and the forms of coping of 41 adult relatives of patients admitted to an adult ICU of a University Hospital.
Results: The results permitted the identification of five major thematic categories related to the psychological experiences of the relatives: 'perceptions of the relative regarding the patient and the ICU', 'emotions and difficulties of the relative during hospitalization of the patient', 'stress factors', 'facilitating factors', and 'coping'. Analysis of the interviews demonstrated that patient admission to the ICU increases the negative emotional changes experienced by the relatives, mainly represented by the fear of losing the patient, the uncertainty of the results, and the lack of information about the situation. The multiprofessional team and the positive perceptions of the relatives regarding the patient were elements that contributed to coping with the situation. The results of the MCPS indicated that the coping strategies reported as the most frequently used by the relatives were those focusing on the problem, followed by strategies of religiosity and fantasizing thought, and, in third place, those looking for social support.
Conclusions: The results obtained provide important information for the development of actions that will include the relatives in the care plan provided by the professionals, thus contributing to the construction of a new type of more humane and integral health care.

0531 KINETICS OF TNF RELATED ACTIVATION PROTEIN (TRAP) AND MACROPHAGE CHEMOATRACTANT PROTEIN-1 (MCP-1) AFTER CARDIOPULMONARY BYPASS (CPB)

HTF Mendonça-Filho, KC Pereira, GS Gomes, M Fontes, MLAF Mendonça, HFR Dohmann
Translational Research, Pro Cardiaco Hospital. Rio de Janeiro - BRAZIL

Background: CPB is an acknowledged factor in systemic inflammation and it is implicated in a set of complications during cardiac surgery. TNF-alpha and lipopolysaccharide (LPS) circulate after CPB and are involved as central mediators in innate response and stimulate, therefore, the production of interleukins and migration inhibitor factor (MIF). Although it has not been described in this context yet, TRAP integrates the downstream signaling in response to TNF and MCP-1 is produced in response to LPS. Objective: To describe sequential alterations in circulating levels of TRAP and MCP-1 in patients submitted to CPB. Patients and Methods: Blood samples were harvested from 20 patients to measure TRAP, MCP-1, MIF, IL-6 and IL10 levels before, 3, 6, 10 and 24 hours after CPB by ELISA (ELISA-sandwich R&D Systems MN, EUA). The kinetics of cytokines were analyzed by ANOVA for repeated measures followed by Bonferroni's test. Results: MCP-1, MIF, IL6, IL10 and MCP-1 showed significant variations ($p<0.05$) with highest values between 3 to 6 hours after CPB. The kinetics' peak of MCP-1 was reached 3h after CPB. No significant variation was found in TRAP levels related to CPB. Conclusion: The present data showed no correlation between TRAP levels and CPB. However, as found with others cytokines, MCP-1 levels enhance significantly after CPB, which is compatible to previous demonstration that LPS circulates in the blood stream after CPB.

0532 ANALYSIS OF APPROACH AND CLINICAL SIGNIFICANCE OF ACID-BASE DERANGEMENTS IN CRITICALLY ILL PATIENTS

LU Taniguchi, M Park, LM Cruz-Neto
Medical Intensive Care Unit - Hospital das Clínicas - São Paulo - Brazil

Background: The complexity of acid-base derangements in critically ill patients makes them difficcult to recognize. Metabolic acidosis in this setting is a prognostic marker, and it is important its correct evaluation.
Objective: The aim of this study is to compare the classic and quantitative acid-base approaches, and shows the prognostic significance of each component of the given approaches.
Methods: 60 patients were prospectively evaluated in an observational study. Laboratory and clinical data were obtained at the time of Intensive Care Unit (ICU) admission and 24 hours late. The classic approach was based on pH, HCO3, standard base excess (SBE), PaCO2 and delta anion gap corrected to serum albumin level (AGc). The quantitative approach was evaluated through pH, PaCO2, serum albumin and phosphate levels (Atot), strong ion difference (SID) and strong ion gap (SIG). Data are shown as medians and interquartile ranges, correlations were performed with Spearman`s test and concordance with the Bland-Altman plot.
Results: Age of patients was 46 [35 – 62] yo, APACHE II score was 17 [12 – 21] and total SOFA was 4.5 [2 – 7.5]. The laboratory data were: pH 7.37 [7.30 – 7.42], PaCO2 32 [26 – 38] torr, HCO3 18 [14 – 21] mEq/L, SBE -5.5 [-11.2 – -2.3] mEq/L, lactate 1.3 [1 – 2] mEq/L, serum albumin 2.6 [2.2 – 3.1] g/dl, AGc 23 [20 – 27] mEq/L, SID apparent 28 [22 – 32] mEq/L, SID effective 43 [39 –46] mEq/L and SIG 16 [12 – 20] mEq/L. In the classic approach, in spite of neutral pH, there was a respiratory alcalosis associated with an anion gap metabolic acidosis. The SBE was not as high as expected by the delta AGc value, possibly due to a hypoalbuminemic metabolic alcalosis and hypercloremic metabolic acidosis. In the quantitative approach the metabolic component was composed by high SIG, low SID and low Atot, suggesting a metabolic acidosis due to unmeasured anions, high chloride levels and a metabolic alcalosis due to low serum albumin level. The evaluation of unmeasured anions through SIG and AGc are not interchangeable due to a high bias (4.2 mEq/l) despite of good correlation ($r = 0.79$, $p < 0.001$). The clinical significance of each component of both approaches, evaluated through the correlation with the total SOFA, was SIG ($r = 0.373$, $p < 0.001$), SID apparent ($r = -0.303$, $p = 0.005$), SID effective ($r = 0.095$, $p = 0.4$), AGc ($r = 0.233$, $p = 0.03$), lactate ($r = 0.152$, $p = 0.1$) and SBE ($r = -0.306$, $p = 0.015$).
Conclusions: Evaluation of metabolic acidosis in critically ill patients is possible with both approches, but the quantitative one allows a better objective understanding of the components of the acid-base derangements. Each component of metabolic acidosis seems to be correlated with the severity of organ disfunction.

0534 MENINGOCOCCAL DISEASE: CLINICAL FEATURES, MORTALITY AND SEQUELAES

G Schonffeldt[1], R Capona[1], P Tabilo[1], A Chavez[2], P Zambrano[2], R Paiva[2], M Drago[2], R Villena[2], M Navarro[2]
1 Sede Sur, Universidad de Chile; 2 Hospital Dr. Exequiel Gonzalez Cortes

Introduction: Meningococcal disease (MB) is a significant problem in the pediatric population, rapid diagnosis is essential, so effective treatments can be initiated early; the mortality rates remain high.
Objective: The aim of this study is to identify the demographic, clinical and laboratory features of children with diagnostic of MB that required Pediatric Intensive Care Unit (PICU) admission and to evaluate sequelaes.
Patients and Method: Retrospective analysis of clinical records of patients diagnosed with MD in the PICU of Hospital Dr. Exequiel Gonzalez Cortes (Santiago de Chile) since January 1997 to December 2003. We analyzed demographic characteristics, laboratory dates, management, morbidity and mortality.
Results: During the period of study 168 patients were diagnosed, 53% men, the median age was 3,96 years (r: 0,08 and 14,92 years). The most frequent incidence was in September and may (13,1 and 11,9 % respectively); 40,5 % with meningitis; 21,4% meningitis with septic shock and 11,9 % septic shock without meningitis and sepsis 26,2%. The most frequent agent was Neisseria meningitidis B (24,4%) (1,8%) Neisseria meningitidis C and 73,8% without agent. The mortality was 7.1%. Mortality was associated with younger age at admission, absence of meningitis and CID. 15 % presented sequels (dermatological sequelae, amputations and chronic renal failure).
Conclusions: The MD is an important cause of morbidity and mortality in PICU; the Neisseria meningitidis B is the most frequent agent; the mortality is associated with younger age, absence of meningitis and CID.

0535 PREDICTIVE VALUE OF INTERLEUKIN -6 ,C REACTIVE PROTEIN AND WHITE BLOOD COUNT IN CRITICALLY ILL CHILDREN WITH SEPSIS

R Bustos[2], H Araneda[2], G Soto[1], R Escobar[1], B Bancalari[1], R Miranda[1]
1 PICU Guillermo Grant Benavente Hospital; 2 Department of Pediatrics University of Concepcion, Concepcion, Chile

BACKGROUND: Interleukin 6 is a pleiotropic cytokine that has been characterised as a biomarker of early inflammatory reponses in sepsis.
OBJECTIVES: To evaluate the performance of admission serum levels of interleukin - 6(IL-6), C reactive protein (CRP) and white blood count (WBC) in the prediction of mortality and severity of organ failure in critically ill children with suspected sepsis.
METHODS Prospective observational pilot study in a multidisciplinary PICU. Serum levels of IL-6, CRP and WBC were measured on the day of PICU admission in all the patients with standard criteria of sepsis. Demographic data, Pediatric Risk Index of Mortality score (PRISM), Pediatric Logistic Organ Disfunction Score (PELOD) at admission and outcome, measured as PICU mortality, were recorded. Satistical analyses were performed with SPSS 11. Values are median (range).
RESULTS: 31 patients were included, median age 20 months (1-192), median PRISM score 16.5 (4-41), median PELOD score 11.5 (0-32). Observed mortality was 32% (10/31). The admission levels of IL6 were significantly higher ($p<0.001$) in nonsurvivors vs survivors (1705 vs 70 pg/ml) and in children with higher categories of PRISM (41.5: for PRISM 0-10 vs 1725 pg/ml: for PRISM 31-40) and PELOD score (39.5 for PELOD 0-6 vs 1700 pg/ml for PELOD 19-24). The areas under receiver operating curves showed reasonable discriminative power (>0.75) in predicting mortality only for IL-6 (0.85) values wich were comparable to that of PRISM (0.786). CRP and WBC were not helpful to predict mortality and organ disfunction.
CONCLUSIONS: In septic children, the admission levels of IL6 are related to severity of organ failure and mortality as assesed by the PELOD and PRISM score respectively.

0536 MECHANICAL CIRCULATORY ASSISTANCE AS A BRIDGE TO CARDIAC TRANSPLANTATION: IMPACT ON MORBIDITY AND MORTALITY

M Peradejordi Lastras, A Bertolotti, C Gomez, M Diez, L Favaloro, MP Varela Otero, J Abud, P Comignani, R Favaloro
Fundacion Favaloro

Introduction: The Mechanical Circulatory assistance (MCA) as a bridge to cardiac transplantation (CT) is a widely used resource, though the results change depending on the series.
Objectives: To report the results of MCA previous to transplant and its impact on morbidity and survival.
Material and Methods: 204 transplants were analysed from 02/93 to 02/2005. Eighty four patients (41.4%), (group I: GI) received MCA and 119 p (58.6%) (group II :GII) were not assisted. Chi square and Wilcoxon-Mann-Whitney were used as it corresponds, for variables comparission. The survival was calculated by Kapan Meier and its differences by Log Rank Test.
Results: The mean age was 47 ± 15 years and 80% (163) were males. The baseline characteristics and CT indications for GI and GII were similar. The MCA type used in Group I were: 74 with intraaortic baloon pump (IABP), 6 with centrifugal pump Biomedicus™ (BC) (5 left side and 1 biventricular) one patient with extracorporeal circulation with membrane oxigenator (ECMO) one patient with POLVAD™ and 2 patients with left ventricular assist devices Novacor™. The GI' patients had similar complications to the GII group: Stroke (1.2% vs 2.5%, p NS), dyalisis (7.1% vs 6,8%, p=NS), infection (25% vs 18.6%, p= NS), right failure (17.9% vs 23..7%, p=NS), mediastinitis (7.1% vs 2.5% p= NS). There were no differences in hospital mortality: GI: 14/84 (16.9%) vs GII 19/119 (16.1%) p= NS.
The 5 years overall survival was: GI: 74% vs GII: 72.5% p = 0.7
Conclusions: The MCA previous to transplant did not add post surgical morbidity. The in-hospital and the late mortality were similar for both groups.

0537 EFFECT OF SEPSIS ON ORGAN DYSFUNCTION OUTCOME AMONG CHILDREN ADMITTED TO A PEDIATRIC INTENSIVE CARE UNIT

RG Branco[1], JPT Garcia[2], RI Ross-Russell[1], JP Piva[2], PCR Garcia[2]
1 Addenbrookes Hospital, Cambridge, UK; 2 Hospital Sao Lucas da PUCRS, Porto Alegre, Brazil

Background/Objective: Mortality in critically ill patients is highly associated with organ dysfunction. In adults, a sequential involvement of organs in described, while in children it presents early, and often with a simultaneous onset of multiple dysfunctioning organs. In adults, sepsis increases mortality in patients with multiple organ dysfunctions (MODS), while in children sepsis is described not to affect outcome of MODS. We evaluated the epidemiology of organ dysfunction in paediatric intensive care admissions in a developing country, addressing the effect of sepsis on the outcome of organ dysfunctions. Methods: Prospective cohort study, in a12 bedded paediatric intensive care unit (PICU) in a tertiary care hospital in Porto Alegre, Brazil. Results: 1084 consecutive admissions to the PICU were evaluated. On admission, 424 children did not present any organ dysfunction, 420 had one, 185 had two, 39 had tree and 16 (1.5%) had four or more organ dysfunctions. Mortality rate increased with increases in number of organ dysfunctions. The most frequent organ dysfunctions were respiratory, cardiovascular and neurological, and the organ dysfunctions with higher mortality rates were hepatic, haematological and cardiovascular. Multiple organ dysfunction was present in 22% of the admissions. 166 children had diagnosis of sepsis, with a mortality of 31.32%. In children with MODS, the incidence of sepsis was 34.3% (n: 82), and the presence of sepsis significantly increased the mortality (35.4% vs 8.92%) When analysing mortality rates among septic and non septic children according to the number of organ dysfunctions septic children with none to two organ dysfunctions on admission sustained a high mortality rate (around 30%), while in non septic children with the same organ dysfunctions mortality was sustained lower (around 4%). In these same groups mortality expected was 13.1% and 5.7%, respectively. Conclusions: Multiple organ dysfunction is frequent in children admitted to paediatric intensive care unit, and is associated with a high mortality rate. The presence of sepsis increased mortality among children with one or two organ dysfunctions, not affecting outcome of children with four or more organ failures.

0538 INCIDENCE OF ENTERAL NUTRITION THERAPY COMPLICATIONS IN CRITICALLY ILL PATIENTS

RM Borges, CN Borges, AD Campos, A Basile-Filho
Ribeirão Preto Medical School - University of São Paulo

Background/Objectives: Human beings need nutrients in adequate quality and amount in order to satisfy their needs. Sometimes this offer can not be achieved by oral intake and should be done by enteral route. The aims of this study were to evaluate the frequency of tube feeding related complications in critically ill patients and evaluate the relation between complications frequency and enteral feeding nutrition regarding nutrients sources and type of container (open or closed system).
Methods: 364 cases from 2 intensive care units were reviewed. 166 meet the study criteria. Data were analyzed in two separated groups, depending on nutrition solution used. Nutrition solutions were similar in all characteristics except type of container and nutrients sources. The following complications had been analyzed: diarrhea, aspiration, regurgitation, vomits, constipation and abdominal distention.
Results: The incidence of complications was different between groups (22.8% and 38.5%, p< 0.05), being diarrhea the only complication that occurred with different incidence (13.8% and 45.8%, p< 0.05). Tube feeding had an incidence of complications of 27.7% and this may compromises the caloric intake of patients.
Conclusions: Container system does not seem to influence the incidence of complications; however the use of only one or two sources of macronutrients (100% of proteins from casein and 100% carbohydrates from maltodextrin) can be an important factor to predispose diarrhea.

0540 PREDICTORS OF THE NEED FOR VENTILATORY SUPPORT > 24 HOURS IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY

SA Olival, RV Gomes, B Santos, J Ghisi, M Bezerra, W Homena, L Alves, R Vegni, A Weksler, AF Assis, ON Barbosa, JOR Brito, M Coimbra
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

Background: Duration of ventilatory support is a marker of morbidity in cardiac surgery. Therefore, knowing the factors associated with the increased need for mechanical ventilation is paramount.
Objective: To assess the factors associated with the need for ventilation support for over 24 hours in patients undergoing revascularization surgery (R) and/or valvular replacement (V).
Case series and Methods: This study assessed 264 consecutive patients undergoing revascularization surgery and/or valvular replacement from January/2004 to January/2005. The exposure variables were: sex, age (< 70 years or > 70 years), type of surgery (R, V, or R+V), and the postoperative complications (bleeding and vasoplegia). The outcome variable was ventilatory support for over 24 hours. The statistical analysis comprised the chi-square and Fisher exact tests.
Results: The median age of the population studied was 60 years with an interquartile interval of 49 – 69 years. Females represented 37.12% (98) of the sample, and the numbers of patients per surgery were as follows: 160 R; 91 V; and 13 R+V. No statistically significant association was observed between ventilation support for over 24 hours and the following variables: sex, age, type of surgery, and bleeding. Twenty-three (44.23%) of the 52 patients with vasoplegia and 35 (19.77%) of the 212 patients without vasoplegia required ventilation support for over 24 hours (p = 0.00002).
Conclusion: Vasoplegia determines an increase in the duration of ventilatory support in patients undergoing cardiac surgery.

0541 THE IMPACT ON OUTCOMES OF USING THE AMERICAN GUIDES FOR MANAGEMENT AND PROGNOSIS OF TRAUMATIC BRAIN INJURY

L Santos, P Bambaci, D Diulio, D Neila, L Bianchi
Intensive Care Unit Hospital A Korn Melchor Romero

BACKGROUND: Traumatic brain injury poses a serious public health challenge. Treatment paradigms have dramatically shifted with the introduction of the American Guides. Implementation of the American guides positively affects patient outcomes and can be successfully introduced in a interzonal hospital.
OBJECTIVE: To quantify the changes in mortality terms and bad results in the treatment of patients with traumatic brain injury taken care of in a hospital of reference of the Pcia de Bs. As.
DESIGN: Retrospective and prospective observacional study between 1998 and the first semester of 2004.
SCENE: Intensive Care Unit of the Province of Buenos Aires.
PATIENTS And METHOD: Two populations compared themselves that entered to Intensive Care Unit with I diagnose of Traumatic Brain Injury before and after the publication of the guides for MANAGEMENT AND PROGNOSIS OF SEVERE TRAUMATIC BRAIN INJURY published in July of 2000 in the Journal of Neurotrauma. The first sample of 111 patients volume from the January of 1998 to June of 2000 (Group nonGuide). And one second population of 137 patients (Group Guide) from August of 2000 to 2004 July. During this 13 semesters 2080 patients admitted themselves of who 307 with diagnose of Traumatic Brain Injury 14.8%. 248 were including in the present work since in 59 cases the data were incomplet. The characteristics of both groups and the results are in the following tables; they calculated relative reduction of risk (RRR); Odds Ratio; number necessary to treat (NNT).
CONCLUSIONS: The global mortality of the pathology (307 income) was of 29,3 %; with respect to the studied population (248 patients) mortality was of 39,5%. Mortality according to traumatic Brain injury level is in completes in the last table. Is observed a reduction of mortality and the bad results (GOS 1.2.3) in the general population and each sub-group according to traumatic Brain injury levels. The reduction is more evident in the mortality that in the bad results. The severe group where the reduction of mortality and the bad results is of smaller magnitude. Although it is not an objective of the present work the costs were not either increased nor the amount of length of stay in ICU.

Group/TCDB	LED II		LED III		LED IV		LOE E		LOE NO E	
	N°	%	N°	%	N°	%	N°	%	N°	%
Non Guide	21	18.9	27	24.3	16	14.4	34	30.6	13	11.7
Guide	34	24.8	10	7.3	8	5.8	75	54.7	10	7.3

Group/charac.	SEX				AGE		STAY In ICU	
	Female		Male		Mean	S.E.	Mean	S.E.
	N°	%	N°	%				
Non Guide	24	21.6	87	78.4	35.01	17.36	10.8	14.3
Guide	14	10.2	123	89.8	35.6	16.9	11.14	13.07

	Bad Results			Mortality		
	RRR	Odds Ratio	NNT	RRR	Odds Ratio	NNT
Global	0.17	0.6	8	0.42	0.43	5
Severe TBI	0.10	0.48	10	0.25	0.58	7
Moderate TBI	0.03	0.94	77	0.74	0.21	6
Mild TBI	0.39	0.55	11	1	0.50	4

Mortality/Level	Severe		Moderate		Mild	
Non Guide	39	52%	5	21.7%	3	23.1%
Guide	31	38.8%	2	5.6%	0	0%

0542 B TYPE NATHRIURETIC PEPTIDE (BNP) IN CRITICAL CARE PATIENTS, COMPARATIVE STUDY WITH METABOLIC AND HEMODYNAMIC VARIABLES

MV Gomes[1], RV Gomes[4], E Moreira[2], A Vianna[3], H Magarinos[5], A Freitas[5], A Michelle[2], C David[1]
1 Universidade Federal do Rio de Janeiro(1); 2 Hospital Casa de Portugal(2); 3 Clínica São Vicente(3); 4 Hospital Prócardiaco(4); 5 Laboratoeio Richet(5)

Background: BNP is now being used to diagnostc dispneic patients in the emergency setting (1), but there is a lot of discussion about the utility of BNP at the intensive care unit (2).
Objectives: To compare BNP with age, mean arterial pressure, central venous pressure, pulmonary arterial ocluded pressure, cardiac index, mixed venous blood saturation, lactic acid, cardiac function by echocardiogram, alveolar capilar gradient and intensive care mortality rate.
Methods: We studied 26 critical care shock patients with invasive mechanical ventilation, with pulmonary artery catheterization, invasive mechanical ventilation and compared many variables with BNP (fluorescent imuno assay, Mann-Whitney test and Spearman coeficient of linear correlation-SAS System®).
Results:There is no correlation of BNP and age (p=0,66), mean arterial pressure (p=0,46), central venous pressure (p=0,75), plumonary artery ocluded pressure (p=0,23), cardiac index (p=0,60), mixed venous blood saturation (p=0,88), cardiac function at echocardiogram (p=0,13) and there is a good correlation of BNP with latic acid (p=0,02), alveolar capilar gradient (p=0,031) and intensive care mortality (p=0,026).
Conclusion: BNP is not an usefull tool in estimating cardiac filling pressure, cardiac index or other hemodinamic variables in this population of intensive care patient with shock and invasive ventilation. There is a trend in correlation between cardiac function and BNP, but not statisticaly significant; there is a good correlation with a perfusion parameter (latic acid); in the evaluation of pulmonary alveolar capilar gradient there is a inverse correlation, probabily meanning that this patients are hypervolemic, and showing a good correlation with mortality. This data shows that BNP, for critical care patients, have a diferent meanning than BNP at the emergeny room, showing that, in the intensive care setting, the BNP correlates better with metabolic desarangement than with hemodinamics variables.
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1-B-Type Natriuretic Peptide and Clinical Judgment in Emergency Diagnosis of Heart Failure: Analysis From Breathing Not Properly (BNP) Multinational Study-Annals of Emergency Medicine
Volume 41 • Number 4 • April 2003
2-Utility of B-type natriuretic peptide for the evaluation of intensive care unit shock-Critical Care Medicine
Volume 32 • Number 8 • August 2004

0544 RESPIRATORY SYNCYTIAL VIRUS IN A CHILEAN PEDIATRIC INTENSIVE CARE UNIT: IS THERE PLACE FOR PALIVIZUMAB PROPHYLAXIS?

R Bustos[2], G Soto[1], B Bancalari[1], C Torres[1], R Miranda[1], R Escobar[1]
1 PICU Guillermo Grant Benavente Hospital; 2 Department of Pediatrics University of Concepcion, Concepcion, Chile

Background: Contradictory information exist concerning the potential impact of passive immunoprophylaxis with palivizumab in children with more severe Respiratory Sincytial Virus (RSV) infection who required Pediatric Intensive Care Unit admission and mechanical ventilation.
Objectives: To assess the potential impact of an hypotetical passive prophylaxis of RSV in a cohort of children admitted in a Chilean PICU.
Methods: Prospective observational study during three consecutive RSV seasons (2002 to 2004) in 81 patients≤ than two years with severe RSV infection admitted in a single regional multidisciplinary PICU. The patients were classified in two groups according to aplication of American Academy of Pediatrics (AAP) 2003 guidelines for passive RSV prophylaxis. Demographic data, rate of mechanical ventilation, days on mechanical ventilation, length of satay in PICU, estimated cost in and outcome meausured as PICU mortality were compared between the groups. Statistical analysis were performed using SPSS 11.
Results: According to 2003 AAP guidelines 39.5% (32/81) of patients were potential candidates to passive prophylaxis (16 Gestational Age ≤ 35 sem, 3 chronic lung disease, 6 hemodynamically significant congenital heart disease, 5 congenital abnormalities of the airway and prematurity, 2 neuromuscular diseases and prematurity). Compared with children who not qualified for prophylaxis the potential candidates to palivizumab had significantly (p≤0.05)longer hopsitalisation in the PICU (2.3.2 vs 12.2 days), rate of mechanical ventilation (35 vs 70 %), total days of mechanical ventilation (68 132 vs days). Mortality was observed in five patients, all candidates to palivizumab. (5 prematures with chronic lung disease 2 and congenital abnormalities of airway 3)
CONCLUSIONS :In this single center study in a Chilean PICU, administration of RSV passive immunoprophylaxis to a targered high risk population could be expected to yield a change in admission and a number of infant needing mechanical ventilation due to RSV infection.

0545 INFLUENCE OF ALVEOLAR RECRUITMENT MANEUVERS ON RESPIRATORY MECHANICS, VENTILATION AND PULMONARY PARENCHYMA DURING ACUTE LUNG INJURY CAUSED BY HYDROCHLORIC ACID: EXPERIMENTAL STUDY IN PIGS

DT Fantoni[2], AM Ambrosio[2], CK Marumo[1], DA Otsuki[1], CA Pasqualucci[1], P Maiorca[2], JOC Auler Jr[3]
1 Faculty of Medicine, University of São Paulo, Brazil; 2 Faculty of Veterinary Medicine, University of São Paulo, Brazil; 3 Heart Institute, Faculty of Medicine, University of São Paulo, Brazil

Background / Objectives: Different mechanical ventilation strategies which define limits of intrathoracic pressures and PEEP values are being proposed for patients with acute respiratory distress syndrome (ARDS). These recommendations are based on observations that mechanical ventilation with excessive tidal volumes or insufficient values of positive end expiratory pressure (PEEP) can cause severe lung injury due to overinflation.
The aim of the present study was to apply recruitment maneuvers (RM) and PEEP in lungs submitted to acute lung injury (ALI) due to the administration of hydrochloride acid.
Methods: Twenty four female pigs weighing 25 to 35 Kg were used. After anesthesia, animals were submitted to volume controlled mechanical ventilation (tide volume of 6 to 8ml/kg) and were randomly allocated in four groups of 6 animals each: GI animals without ALI and treated with progressive values of PEEP (5, 10, 15 and 20 cmH2O) and regressive (20 to 5 cm H2O); GII animals without ALI and treated with progressive values of PEEP (5, 10, 15 and 20 cmH2O) and regressive (20 to 5 cm H2O) plus 3 consecutive recruitment maneuvers with 30 cmH2O before each PEEP increase or decrease; GIII animals submitted to 1 hour of ALI and treated as GI; GIV animals submitted to 1 hour of ALI and treated as GII. Parameters of respiratory mechanics, ventilation and oxygenation were measured every 20 minutes according to the change of the PEEP values.
Results: ALI could be observed by the severe changes of oxygenation and respiratory mechanics. PaO2/FiO2 decreased around 20% after ALI and the use of RM and PEEP were able to restore the control values. Compliance also decreased significantly after ALI (from 28.5 ± 6.9 to 13.1 ± 2.6 cmH2O in G3 and 29.1 ± 3.3 to 13.3 ± 0.8 cmH2O in G4), increasing to 17.6 ± 3.1 and 17.3 ± 2.4 cmH2O respectively when PEEP 10 was utilized. Application of high values of PEEP and CPAP were accompanied by significant hemodynamic changes which could be evidenced in animals of all groups. Derecruitment probably occurred when PEEP value reached 5 cmH2O. The lung lesions were uniform in the HCL-injured animals and consisted of necrosis, hemorrhage, congestion, and inflammatory cells infiltration that involved both the interstitium and the alveoli. Compliance did not improve during the maneuvers.
Conclusions: The experimental model of lung injury was adequate to the study of RM followed by PEEP since significant changes in the oxygenation and compliance values could be observed 1 hour after acid instillation. PEEP values of 5cmH2O were incapable to maintain recruitment at the end of the observation period, while 10 cmH2O were sufficient to promote the reestablishment of oxygenation index with minimal hemodynamic changes. (FAPESP 02/08621-0).

0546 PREDICTIVE FACTORS FOR ENDOTRACHEAL REINTUBATION IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY

SA Olival, RV Gomes, B Santos, J Ghisi, M Bezerra, W Homena, R Vegni, A Weksler, AF Assis, L Alves, ON Barbosa, JOR Brito, M Coimbra
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

Background: A few studies about reintubation in patients undergoing cardiac surgery have been performed. Reintubation has been associated with an increase in hospitalization length and treatment costs. Therefore, knowing the factors associated with endotracheal reintubation in the postoperative period of cardiac surgery is paramount.
Objective: To assess the factors associated with the need for reintubation in patients undergoing revascularization surgery (R) and/or valvular replacement (V).
Case series and Methods: This study assessed 272 consecutive patients undergoing revascularization surgery and/or valvular replacement from January/2004 to January/2005. The exposure variables were: sex, age, type of surgery (R, V, or R+V), and postoperative complications (bleeding, surgical site infection, and vasoplegia). The outcome variable was endotracheal reintubation. The statistical analysis comprised the chi-square, Mann-Whitney, and Fisher exact tests.
Results: The median age of the population studied was 59 years, with an interquartile interval of 49 – 69 years. Females represented 37.12% (98) of the sample, and the numbers of patients per surgery were as follows: 164 R; 94 V; and 14 R+V. Of all variables assessed, a significant association was observed only between surgical site infection and endotracheal reintubation. Six (40%) of the 15 patients with surgical site infection and 21 (8.17%) of the 257 without it were reintubated (p = 0.00148).
Conclusion: Surgical site infection is an important determinant of the need for reintubation.

0548 PREVALENCE OF LONG STAY PATIENTS AT INTENSIVE CARE UNITS IN RIO DE JANEIRO BRAZIL

M Gomes[1], L Lorenzine[2], E Moreira[1], A Barbosa[2], P Kurtz[1], L Aguiar[1], R Heifer[1], C Ruiz[2], A Vianna[2]
1 Hospital Casa de Portugal; 2 Clínica São Vicente

Background: As population ages, the age of the patients in intensive care unit increases proportionally. Aged patients have greater comorbidity, more serious illnesses and are more susceptible to complications. When in ICU, they are treated for very long periods, thus consuming great deal of unit resources. Currently, the prognostic of these patients is being assessed, evaluating the relation cost-benefit of the treatment in highly specialized units.
Objectives: To evaluate the prevalence of the patients with long stay (30 days) in intensive care units in Rio de Janeiro Brazil.
Material and Methods: Transversal study with 77 critical care units of Rio de Janeiro, made by phone on May 10th 2002, between 00:00h and 24:00h. We made a questionnaire to know how many patients there are with more than 30 day in the ICU and the profile of them.
Results: There were 799 beds, with 645 patients (tax of global occupation: 81%). Of these patients, 62 had been admitted for 30 days or more, with prevalence of 9,6%. Most of them are patient over 60 years, carriers of chronic illnesses, such as arterial hypertension, diabetes mellitus, admitted for pulmonary neurological illness or mechanical ventilation dependents, presenting infections as frequent complication.
Conclusion: In Rio de Janeiro the prevalence of patients with more than 30 days of admission in intensive care units is the same as in other cities over the world, carrying the same problem of costs and the need of creating specialized units for this kind of patients, wich will get better care and lower costs (1).
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1-A structure of care for the chronically critically ill. Critical Care Clinics
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0549 HEMODYNAMIC EFFECTS OF RECRUITMENT MANEUVERS DURING ACUTE LUNG INJURY BY HYDROCHLORIC ACID

JOC Auler Jr[3], CK Marumo[1], AM Ambrosio[2], DA Otsuki[1], CA Pasqualucci[1], DT Fantoni[2]
1 Faculty of Medicine, University of São Paulo, Brazil; 2 Faculty of Veterinary Medicine, University of São Paulo, Brazil; 3 Heart Institute, Faculty of Medicine, University of São Paulo, Brazil

Background/Objectives: The pulmonary effects of alveolar recruitment maneuvers have been exhaustively studied. However, there are few studies about acute lung injury (ALI) by hydrochloric acid (HCl) and its cardiovascular effects.
Methods: Twenty- eight pigs, weighing 25 to 35 kg, were anesthetized, submitted to mechanical ventilation (tide volume of 6 to 8 mL/kg) and randomized in four groups. Group 1 (G1), without ALI, was treated with progressive and regressive values of PEEP (5, 10, 15, 20, 15, 10, 5 cmH2O). Group 2 (G2), without ALI, was treated with progressive and regressive values of PEEP associated with 3 consecutive recruitment maneuvers (RM) of 30 cmH2O. Group 3 (G3), submitted to ALI, was treated as described for G1. Group 4(G4), submitted to ALI, was treated as described for G2. Conventional hemodynamics, echocardiografic and oxygenation parameters were measured after each PEEP increase/decrease.
Results: Cardiac index (CI) and mean arterial pressure decreased progressively with the increment in PEEP in all groups. The animals in G2, G3 and G4 presented more pronounced diminution of CI (which was around 40% of the initial values); while in G1 the decrease reached 30%. Hemodynamic parameters in G1 recovered completely at the end of the protocol (PEEP 5). Pulmonary arterial pressure and pulmonary resistance index increased significantly 1 hour after HCl instillation, and were aggravated by the institution of PEEP and RM (G3 and G4). Oxygen delivery index decreased while oxygen consumption remained stable during PEEP elevations. Arterial blood lactate increased and decreased concurrently with PEEP alterations. Although echocardiographic values of ejection fraction did not change during the experiment, end-diastolic volumes and end-systolic volumes decreased when PEEP values reached 20 cmH2O.
Conclusions: Alveolar recruitment by means of PEEP increment is associated with a severe decrease in cardiac index in normal lungs. The recruitment maneuvers and PEEP increments during acute lung injury have even more deleterious effects on cardiac function.
(FAPESP 03/06359-9)

0550 SYSTOLIC PRESSURE VARIATION DURING VOLUME OR PRESSURE CONTROLLED VENTILATION. EXPERIMENTAL STUDY IN RABBITS

JOC Auler Jr[3], EB Fonseca[1], F Bliacheriene[1], DA Otsuki[1], DT Fantoni[2]
1 Faculty of Medicine, University of São Paulo, Brazil; 2 Faculty of Veterinary Medicine, University of São Paulo, Brazil; 3 Heart Institute, Faculty of Medicine, University of São Paulo, Brazil

Background / Objectives – Systolic Pressure Variation (SPV) has been proposed as an effective method to assess intravascular volume status, through its delta down component, during mechanical ventilation. This study aims to evaluate SPV and its components (delta up, delta down, %SPV and %delta down), during pressure controlled ventilation (PCV) and volume controlled ventilation (VCV), in anesthetized rabbits (isofluorane), during normovolemia and graded hemorrhage, as well as to compare both modes of ventilation in these situations.
Methods – Thirty two rabbits were randomly allocated in four groups: CONTR-PCV, CONTR-VCV, HEMO-PCV and HEMO-VCV. Tidal volume was adjusted to maintain normocapnia (10 to 12 mL.kg-1) in all groups. Control groups (CONTR-PCV and CONTR-VCV) were not submitted to hemorrhage and were evaluated every 30 minutes (M0, M1 and M2). In hemorrhage groups (HEMO-PCV and HEMO-VCV), blood was removed at M1 and M2, in fractions of 15% of estimated blood volume (65 mL.kg-1).
Results – CONTR-PCV and CONTR-VCV group parameters did not change during the experiment. Baseline (M0) values did not differ among groups.
SPV, %SPV, delta down and %delta down increased significantly in hemorrhage groups in M1 and M2. SPV increased progressively from 7.57 ± 2.62 to 14.81 ± 3.99 (M1) and 16.20 ± 4.42 (M2) in HEMO-PVC group and from 8.28 ± 1.58 to 14.11 ± 3.22 and 21.52 ± 4.71 in HEMO-VCV group. Delta down increased from 5.55 ± 2.33 to 12.48 ± 6.31 and 13.53 ± 5.90 in HEMO-PVC group and from 5.77 ± 2.39 to 12.43 ± 4.17 and 20.19 ± 5.81 in HEMO-VCV group. %SPV and %delta down had similar increase. Differences in SPV, %SPV, delta down and %delta down between HEMO-PCV and HEMO-VCV were significant only in M2. Delta up did not change in all groups.
Conclusions – Hemodynamic changes during moderate hemorrhage (30%) were more pronounced in animals ventilated with VCV. These results can suggest PCV utilization during hypovolemic patients' anesthesia. (FAPESP 03/12967-1)

0551 ADRENAL RESPONSE IN CHILDREN WITH SEPTIC SHOCK

PC Garcia, CH Casartelli, JP Piva, RG Branco, PR Einloft, F Bruno, DJ Kipper, JC Santana
Pediatric Intensive Care Unit, Department of Pediatrics, Hospital São Lucas and Medical School, Pontificia Universidade Catolica do Rio Grande do Sul (PUCRS), Porto Alegre, Brazil

Objective: To describe the adrenal response in children with septic shock and to evaluate the influence of this factor on survival.
Methods: Between May and November 2003, 22 children with septic shock admitted to two Pediatric Intensive Care Units (PICU) in southern Brazil were followed. Adrenal function was evaluated based on the levels of cortisol measured on the occasion of the diagnosis of septic shock and on the response of serum cortisol 30 minutes after the administration of intravenous corticotropin (0.5 mg/1.73 m²). Absolute adrenal insufficiency was defined as baseline serum cortisol < 25 mg/dl. Relative adrenal insufficiency was defined as a cortisol response < 9 mg/dl. The groups were compared using Mann Whitney's test, Fisher's exact test, the chi-square test, relative risk and the area under the ROC curve.
Results: Absolute or relative adrenal insufficiency was detected in 17 patients (77.3%). Mortality was higher in patients with relative adrenal insufficiency (60%; RR=7.2; p=0.02) and in those with pretest cortisol > 45 mg/dl (57.1%). There were no deaths in the group with baseline cortisol < 25 mg/dl (p=0.01).
Conclusions: Adrenal insufficiency is a frequent finding in children with septic shock. The corticotropin stimulation test seems to be an important tool to distinguish between a cortisol response that is compatible with the level of stress and adrenal failure. Mortality was significantly associated with the presence of relative adrenal insufficiency, and presumably with a higher baseline cortisol concentration.

0552 THE IMPACT OF ONGOING AUDIT ON TIME TAKEN TO INITIATE ENTERAL NUTRITION SUPPORT

R Meyer[1], S Harrison[2], L Archibald[2], C Elwig[2], M Cooper[2]
1 Imperial College, London, United Kingdom; 2 St.Mary's Hospital, London, United Kingdom

Background: Early enteral nutrition in the critically ill child is defined by many authors as commencing nutritional support within the first 24 hours of admission. However, more recent data has been published, confirming that nutritional support within the first 12 hours of admission and even earlier has both nutritional as well as immunological benefits by reducing bacterial translocation as well as improving nitrogen balance.
Method: Four prospective audits took place on the paediatric intensive care unit in 1995, 1997, 2001 and 2004. The number of patients enrolled for each audit was: 85 in1995, 75 in 1997 and 100 patients in both 2001 and 2004. Following each audit, enteral feeding protocols and procedures were introduced in the form of algorithms, to improve feeding practice. In 1995, the nasogastric (NG) feeding protocols were introduced, following the 1997 audit, both the blind nasojejunal (NJ) placement as well as the NJ feeding protocols were introduced and after the 2001 audit, the extubation protocol on patients being fed via the NJ and NG route was introduced. Each new protocol was introduced to the unit with a presentation to clinicians and regular teaching sessions to nursing staff. The dietitian also ensured that protocols were followed with daily ward rounds.
Results: The median time taken to initiate enteral nutritional support in 1995 was 15 hours, this reduced to 8 hours in 1997, 5.5 hours in 2001 and 4.5 hours in 2004. This indicates a significant reduction in median time taken to initiate enteral nutritional support between 1995 and 2004 (p<0.0001).
Conclusion: It is clear from the above data, that an ongoing audit process with appropriate interventions has a significant impact on the time taken to commence enteral nutritional support and thereby can improve clinical feeding practice.

0553 CASE REPORT: APPLICATION AND MAINTENANCE OF PERIPHERALLY INSERTED CENTRAL CATHETERS IN A PEDIATRIC INTENSIVE CARE UNIT

RP Santos, AAR Souza, LB Cunha, AS Pereira
Instituto Israelita de Ensino e Pesquisa Albert Einstein. The Department of Maternity and Children. Brasil

BACKGROUND: In Pediatric Intensive Care Unit (PICU), frequently, severe sick patients need a complex intravenous therapy, in the most cases, in central circulation. Among the newest techniques of central catheter application, it is the Peripherally Inserted Central Catheters (PICC). The PICC is a central catheter, its insertion is conducted by a qualified professional who have trained to execute this procedure through a peripheral puncture. The risks related to the catheter procedure and maintenance are smaller than in convencional techniques. In this way, we observed a progressive increasing of recommendation and use of this new technique in PICU.
OBJECTIVE: To know the index of success in the application and maintenance of PICC in a PICU.
METHOD: We performed a retrospective study through reports on PICC protocols which were filed. The sample was composed of 41 patients, at the age between 1 and 166 months, who have undergone the application of PICC from March 2004 to February 2005.
RESULTS: From 100,0% of catheters inserted by nurses, the indications included antibioticotherapy (93,6%), post-operator of big surgeries (4,9%), and assistance for chronic patients (2,5%). In the application, we had 70,7% of successes. The mean time of internation was 12 days, the minimum time was one day and the maximum time was 24 days. About the removing of PICCs, 46,3% happened in the end of therapy and 26,8% for complications: 4,9% for obstruction, 12,2% for rupture, 7,3% for phlebitis, and 2,5% for exposing.
CONCLUSION: This paper highlights the importance of procedure as alternative to implement intravenous therapy and shows some aspects of improvement in the maintenance of PICCs, that is, actions for the improvement of successful index in maintenance and reinforcement in the prevention of adverse occurrence, resulting in decreasing of premature removing of catheter.

0554 RIGHT-VENTRICULAR END-DIASTOLIC VOLUME AND EJECTION FRACTION IN THE ASSESSMENT OF FLUID RESPONSE AFTER CARDIAC SURGERY

SM Jakob, M Roeck, M Wyler-Von Ballmoos, F Porta, H Bracht, B Baenziger, J Takala
University Hospital Bern

OBJECTIVES. Optimal intravascular fluid replacement is a fundamental component of intensive care treatment. Blood volume cannot be reliably assessed clinically, and there are no parameters which consistently predict the response to fluid administration. We assessed effects of volume challenges on right ventricular end-diastolic volume (EDV), ejection fraction (EF), stroke volume (SV) and central venous pressure (CVP) in cardiac surgery patients receiving volume challenges on clinical indication in the early postoperative phase.
METHODS. 20 patients after cardiac surgery and mild hypothermic extra-corporeal bypass (age: 69 ± 11 years, mean ± SD) were monitored with a pulmonary artery catheter (PAC) with fast response thermistor. Colloid aliquots of 200 ml were administered over 10 minutes based on clinical indication. Hemodynamic and respiratory data were continuously recorded, and 2 min - mean values calculated before and after fluid administration. An increase of 2 mm Hg (CVP), and 10% (EDV, EF, SV), respectively, was considered significant.
RESULTS. The treating physicians diagnosed 86 episodes of need for fluid administration (1-8/ patient). Fluid administration was associated with an increase in CVP in 22 instances (26%), and an increase in SV in 10 (12%), in EF in 16 (19%), and in EDV in 3 (4%) instances, respectively. An increase in CVP ≥ 2 mm Hg together with an increase in SV occurred only twice.

Physiologic response	Proposed mechanism	Frequency of observations
Increasing EDV and SV	Correction of hypovolemia	0
Increasing EDV, unchanged SV	Over-filling	3 (4%)
Unchanged EDV, increasing SV	Increased contractility	10 (12%)
Unchanged EDV and SV	Vasodilatation	73 (85%)

CONCLUSIONS. When an increase in stroke volume in response to fluid administration is a hallmark in confirming hypovolemia, clinicians were not able to diagnose this pathophysiological condition. However, in rewarming patients after cardiac surgery, fluid shifts, changes in myocardial contractility and vasodilation may occur in parallel. We propose that fast thermistor PAC can be used to assess both the underlying pathophysiology and the response to treatment in such conditions.

0555 LUNG EPITHELIAL PERMEABILITY WITH CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) IN SEATED AND SUPINE POSITION

DN Paiva[2], RPL Mattos[1], P Masiero[1], E Fernandes[1], B Spiro[1], SS Menna Barreto[1]
1 Universidade Federal do Rio Grande do Sul - UFRGS; 2 Universidade de Santa Cruz do Sul - UNISC

Clearance of hydrophilic molecules from alveoli into pulmonary capillary blood is used as a measure of the permeability of the alveolar-capillary barrier. Tecnetium-99m-labeled diethylenetriaminepentaacetate (99mTc-DTPA) is increasingly used for this purpose. Continuos Positive Airway Pressure (CPAP) in a non-invasive system improves oxygenation and prevents atelectasis for increases lung volume. This study evaluated the effects of 10 cmH2O and 20 cmH2O CPAP on 99mTc-DTPA clearance rate in health subjects in supine and seated position.
A jet nebulizer (Aerogama - BR) at a flow of 8 l/min generated the 99mTc-DTPA aerosol. The subjects inhaled the aerosol for 3 minutes at their normal tidal volume while seated. Continuos count radioactivity was made over the chest for 30 minutes using a scintillation gamma camera (Anger - MB9200). Was determined the clearance rate of 99mTc-DTPA in 36 health subjects expressed as the half-time (T1/2). The subjects were included in four groups: SUPINE 20 cmH2O CPAP (n=8); SUPINE 10 cmH2O CPAP (n=12); SEATED 20 cmH2O CPAP (n=8) and SEATED 10 cmH2O CPAP (n=8). The chest scintigraphy was obtained in spontaneously respiration and under CPAP facial mask with 10 and 20 cmH2O (BiPAP STD/30 Respironics, EUA- Write Martins) in supine and seated position. Spirometry (Collins Survey II Spirometer?, EUA), was made in all subjects to confirm the normal pulmonary function (CVF= 4,66 ± 1,15 L, VEF1= 3,95 ± 0,89 L and VEF1 /CVF= 84.64 ±5,65 %).
In spontaneously respiration in supine and seated position, the mean T1/2 was 75,05±19,18 min and 75,03±30,25 min respectively. After 20 cmH2O CPAP in both postures, the T1/2 decreased significantly (t test α=0,05) to 48,69±20,76 min (α=0,018) and 39,76±9,95 min (α=0,007) respectively. On the other hand, when 10 cmH2O CPAP in supine and seated position was applied, the T1/2 base line value was 67,69±11,28 min and 66,29±20,69 min respectively, these values was unchanged before 10 cmH2O CPAP, resulted in 67,39±20,04 min (α=0,903) and 54,98±15,99 min respectively (α=0,357). 10 cmH2O CPAP resulted in statistical variation (α=0,045) when postural exchange was applied (supine and seated position), however 20 cmH2O CPAP do not produced significant variation of 99mTc-DTPA T1/2 (α=0,288). This study demonstrated that high level of CPAP (20 cmH2O) increases 99mTc-DTPA clearance rate in health humans, and that low level of CPAP (10 cmH2O) do not. The postural exchange from supine to seat affected the lung depuration of DTPA only when low positive pressure as 10 cmH2O was applied. The mechanism by which increased lung volume results in increased 99mTc-DTPA is a matter of speculation. Probably, changes in epithelial permeability may all contribute to an increased clearance rate of DTPA.

0556 ENTERAL NUTRITION IN CRITICALLY ILL CHILDREN: ARE THE PRESCRIPTION AND THE NUTRIENT DELIVERY ACCORDING TO THEIR CALORIC REQUIREMENTS?

WB Carvalho, SBO Iglesias, HP Leite
São Paulo Federal University - São Paulo, Brazil

OBJECTIVES: Identify factors that impede the delivery of enteral nutrition, and assess the amount of nutrients prescribed, required, and actually delivered for critically ill children.
METHODS: In a prospective cohort study 55 consecutive patients aged 8.2 ± 11.4 months, who received enteral nutrition for > 2 days through gastric or post-pyloric tubes, were followed from admission until the first 10 days of nutritional delivery. The amounts of prescribed/delivered energy were recorded daily and compared with basal metabolic rate (goal energy) according to the recommendations of WHO [(1)]. The reasons for cessation of enteral feeding were evaluated. The prognostic score Pediatric Index of Mortality 2 (PIM2) [(2)] was used at admission.
RESULTS: The mean caloric intake was 29.5 ± 8.8kcal/kg/day, 60% of the median caloric amount required, and 85% of the prescribed. The ratio delivery/required was > 90% of the goal energy in only 44% of enteral nutrition days (164/370). Low prescription rate was the predominant reason for not achieving the goal energy in the first five days of enteral nutrition; after this study point, other factors were associated. In bivariate analysis, factors significantly associated with low energy delivery were: PIM2 > 15%, gastrointestinal complications, use of a-adrenergic vasoactive drugs. When the logistic regression model was applied, only the use of a-adrenergic vasoactive drugs was a independent and significant factor (p=0,043).
CONCLUSIONS: The prescription and delivery of energy were not appropriated in > 50% of enteral nutrition days. Among the factors analysed, a low rate of enteral nutrition prescription and the use of a-adrenergic vasoactive drugs showed association with low energy delivery.
1- FAO/WHO/UNU Expert Consultation. Energy and Protein Requirements. WHO Technical Bulletin #724. Geneva, Switzerland: World Health Organization; 1985
2 – Slater A, Shann F, Pearson G. PIM2: A revised version of the Paediatric Index of Mortality. Intensive Care Med 2003; 29:278-85.

0557 ADMISSIONAL B-TYPE NATRIURETIC PEPTIDE PREDICTS IN-HOSPITAL AND LONG TERM OUTCOMES IN PATIENTS ADMITTED DUE TO DECOMPENSATED HEART FAILURE

HCV Rey[1], MI Bittencourt[1], RM Rocha[1], F Ferreira[1], FOD Rangel[1], ALC Marins[1], SS Xavier[2], R Esporcatte[1]
1 Coronary Care Unit/Hospital Procardíaco/PROCEP; 2 Cardiology Department/Postgraduate Program/Universidade Federal do Rio de Janeiro

Background: Hospitalization for decompensated heart failure (DHF) carries a poor prognosis, with frequent readmissions. The B-type natriuretic peptide (BNP) is secreted by overloaded left ventricle and the prognostic value of admission BNP assay has not been established for patients with DHF.
Objective: To determine the prognostic value of admission BNP in patients hospitalized due to DHF.
Methods: We conducted a prospective observational cohort study in 63 consecutive patients admitted to coronary care unit with DHF between January and December 2003. Clinical features and outcomes were recorded. BNP was measured on admission and correlated with combined end point death and readmission for DHF. Patients were followed up for at least 12 months.
Results: Baseline characteristics and main outcomes of this cohort were: 50.8% of patients were male, mean age was 77.3 years and 85.7% of patients were in NYHA class IV. In-hospital mortality was 12.7% Though ROC curve analyzes, a BNP cutoff level 1160pg/ml was defined, and on Kaplan Meier curves it turned out to be strongly related to death or readmission (p=0.0076).
Conclusion: High admission BNP level is a strong predictor of death or readmission in patients hospitalized for decompensated heart failure.

0558 COMPARING THE OUTCOME BETWEEN DECOMPRESSIVE CRANIOTOMY VERSUS BARBITURATES IN TRAUMATIC BRAIN INJURY

S Svampa, V Sciuto
Hospital Provincial Neuquen, Neuquen, Argentina

Background: Decompressive craniectomy (DC) and Barbiturates are second line therapeuticals in intracranial hypertension (ICH) treatment in traumatic brain injury (TBI). Recent studies show that DC reduces intracranial presssure (ICP) favorably influencing the outcome of TBI patients.
In 1979 Marshall et al. were the first to report that barbiturates not only control ICP but also improved outcome in TBI patients.
Objetive: To compare the outcome of TBI patients treated with DC vs barbiturates.
Methods: Retrospective and descriptive study for statistical tests. A differencee was defined as significant when the probability value was less than 0,05.
Data base of admitted patients with TBI diagnosis at Intensive Care Unit (ICU) in Hospital Provincial Neuquen from 01/01/2001 until 12/31/2004 was analysed, choosing those monitored with ICP and treated with DC or barbiturates. Those who received both treatments and those undergoing DC that were not monitored were excluded from this study.
Analysed variables were: age, sex, APACHE II, admission Glasgow Coma Score (GCS), tomographyc lesions, Treatment Intensity Level (TIL), elapsed time before surgery or administration of barbiturates, complications, days the hospitalization, Glasgow Outcome Score (GOS) at ICU discharge and 6 months after.
Results: Over 179 total patients presenting TBI 66 were monitored (37%); global mortality rate was 34%. 33 patients were given DC and/or barbiturates; 3 patients that were given both treatments were excluded. 16 underwent DC within 48 hs and 14 were given barbiturates dripping within 72 hs.There were no differences in sex, APACHE II (21,3 DS ± 6,6 for DC and 20,5 DS ± 6,3 for barbiturates), admission GSC (7,6 and 6,8) associated lession, admission tomographic lessions (Table 1). The mean ages was 30 (SD ± 13,44) for DC group and 22 (SD± 6,61) for Barbiturates group.
TIL at the beginning of DC or Barbiturates Therapy was 4 in both groups. The main at ICU hospitalization days was the same in both groups.(13 days SD ± 10); most frequent complications were pneumonia, SIRS, severe sepsis and hyponatremy, showing no differences in ocurrence between the two groups. ICH post procedure was less common in the DC group. Mortality rate on DC group was 31 % (5/16), and on Barbiturates group was 57% (8/14). The difference between groups was not statistically significant (p= 0,15). The main GOS of survivals at ICU discharge was 3,2 for DC and 3 for Barbiturates group, while the same variable was 3,6 for DC and 4,2 for Barbiturates group at 6 months.
Conclusions: Although the outcome differences were not significant, barbiturates treated patients´bigger mortality can be linked to ICH refractory. The best results with DC can be attributed to early DC. Significant differences may be insufficient to draw further conclusions due to short number of patients.

TCDB	DC	BARBITURATES
LED II	0	1
LED III	4	4
LED IV	0	1
LOEEV	10	7
LOENEV	12	1

0559 NEAR DROWNING: EPIDEMIOLOGY OF PEDIATRIC NEAR DROWNING IN A SUBURBAN TERTIARY HOSPITAL

G García Guerra, S Torres, E Schnitzler, A Aruj, T Iolster, D Montes de Oca, F Burgos, F General, M Ospital
Hospital Universitario Austral, Buenos Aires Argentina

Background: Drowning is the third most common cause of unintentional injury related death for all ages, and the second leading cause of death in children aged 1 to 4 years. Submersion injuries occur most frequently in children from 0 to 4 years, with no differences by sex, and in boys from 15 to 19 years. Worldwide estimates for drowning are approximately 140,000 to 150,000 deaths per year. Most immersions occur in privately owned swimming pools and tend to happen because of a lapse in parental supervision. Prevention and timely rescue are the most effective means of reducing the number of persons at risk. Early bystander cardiopulmonary resuscitation (CPR) is the most important factor for survival and it is associated with better neurologic outcome.
Objectives: Characterize children aged under 16 years who presented to our hospital following near drowning between 2000-2005, the circumstances surrounding the event and short term outcome.
Methods: This is a retrospective, descriptive study. Information was obtained from the medical records. Results: 22 children were brought to our hospital because of near-drowning. Sixty-eight per cent (n = 15) were boys with a boy to girl ratio of 2:1. The median age was 25 months (range 11month to 12 years). Eighty-six per cent (n = 19) of the episodes occurred during spring or summer months, 66% (n =12) of the patients were playing by the pool area, 33% (n =6) were swimming or playing in the pool, and in 4 patients we lost the data (LD). Ninety-five percent of the episodes in swimming pools (n =20), pond 5% (n =1). It was their own swimming pool in 65% (n =11) of the cases, 58% (n =7) of the children were supervised by their parents, the 16% (n =2) by their brothers, and 16% (n =2) by an employee at the time of the injury. The Glasgow scale at the emergency department (ED) presentation was less than 5 in 23% (n =5) of the patients, of this ones 60% (n =3) had sever neurological damage and 40% (n =2) died. None of the children who arrived to the ED with a Glasgow scale more than 5 had evident neurological sequel at the time of discharge. Eighty-one per cent (n =18) of the children were admitted to hospital and the 36% required intensive care. All the patients who were discharged with severe neurologic damaged arrived to the emergency department (ED) in cardiopulmonary arrest. One of the patients who died arrived with respiratory arrest and the other one with cardiopulmonary arrest at the ED.
Conclusions: Most of the children who had a near drowning event were between 0-4 years old and occurred more frequently in swimming pools as is described in the literature. Males had more risk. All of the children who died or had severe neurological damage had Glasgow scale less than 5. The relative high rate of cases could be related to the characteristics of our environment. This series suggests the need of a community education program regarding the risks of near-drowning.

0560 D-DIMER IS A STRONG MARKER OF IN-HOSPITAL AND LONG-TERM PROGNOSIS IN PATIENTS WITH DECOMPENSATED HEART FAILURE

MI Bittencourt, RM Rocha, HCV Rey, F Ferreira, FT Oliveira, CG Salgado, FOD Rangel, R Esporcatte
Coronary Care Unit/ Hospital Procardíaco/ PROCEP

Background: Several factors associated to the physiopathology of heart failure (HF) contributed to the occurrence of thromboembolic events, hipercoagulability and venous stasis. Many studies showed the elevation of coagulation markers, including D-dimer, in advanced disease stages. The role of D-dimer is still unknown as a long-term prognostic marker in HF patients (pt).
Objectives: 1 – Evaluate the best value of D-dimer that can predicts in-hospital deaths; 2- Determine the prognostic role of D-dimer after one-year of follow-up in pt with decompensated HF.
Material and Methods: It was a cohort of 70 pt with decompensated HF (85.7% in class IV NYHA) admitted to a Coronary Care Unit during year 2003. The D-dimer was measured in 53 pt (77,2 ± 10,2 y/o, 54,7% male, 84,9% in class IV - NYHA) at hospital admission; and it was correlated with in-hospital deaths and event-free survival (one year of follow-up after baseline hospitalization). We use ROC curve to establish the best cut-off looking for sensibility and specificity for in-hospital deaths followed by Chi-square test; and also the Log Rank test to analyze the Kaplan-Meier curve. We consider $p \leq 0.05$ as statistically significant.
Results: The best cutoff point in the ROC curve to D-dimer to predict in-hospital deaths was 1433mg/dl (p=0.03), with sensibility= 80%, specificity= 69% and negative predictive value= 97%. After one-year of follow-up we observed that pt which D-dimer ≥ 2000mg/dl during initial hospitalization had worst prognosis (event-free survival median = 295 days when D-dimer <2000mg/dl vs 70 days when D-dimer ≥ 2000mg/dl, p=0.03).
Conclusions: An elevated D-dimer on hospital admission in pt with decompensated HF seems to have clinical importance indicating a higher probability of in-hospital deaths and worst event-free survival after one year.

0562 IS OBESITY A POOR PROGNOSTIC FACTOR FOR PATIENTS WITH DECOMPENSATED HEART FAILURE ADMITTED IN CRITICAL CARE UNIT?

F Ferreira, MI Bittencourt, RM Rocha, HCV Rey, FOD Rangel, ALC Marins, M Vaisman, R Esporcatte
Coronary Care Unit/Hospital Procardíaco/ PROCEP

Background: Previous studies defined that obesity is a risk factor for the developing of heart failure (HF). However, if the obesity influences in-hospital mortality of patients with heart failure remains unknown.
Objectives: Analyze the obesity impact measured by body mass index (BMI) on in-hospital morbidity and mortality of the patients with heart failure and correlate them with other serum markers, like BNP and D-dimer.
Materials and methods: Cohort study with 125 patients with heart failure (mean age = 54 y; 55.2% male gender, 79.2% NYHA functional class VI), admitted to coronary care unit, between January 2003 and December 2004. This sample was divided into 3 groups according to their BMI (weight; height^2): group A – BMI < 25, group B – BMI = 25 – 29.9 and group C – BMI ≥ 30. The in-hospital complications incidence, mortality and admission serum D- dimer and BNP, were compared. Risk factors, complications and in-hospital mortality, were compared using the likelihood ratio chi-square test. The Kruskal-Wallis test was used to correlate de BMI with serum markers and ANOVA. Statistical significance was set at $p \leq 0.05$.
Results: Sample was divided into three groups (group A – 56.8%, B – 29.6% and C – 13.6%). There was no difference in age between the two groups (p= 0.14). Diabetes was more frequent at B group (overweight). Obese patients (group C) had lower BNP levels (p= 0.01) and D-dimer (p= 0.035). There were no difference between the 3 groups related to complications and in-hospital mortality.
Conclusions: The elevation of the BMI is not a predictor of mortality or in-hospital complications among patients with heart failure. Besides, we observed its relation with lower levels of worst prognostic markers, like BNP and D-dimer.

0564 CLINICAL AND PHYSIOTHERAPY EVOLUTION OF 105 PATIENTS SUBMITTED TO LIVER TRANSPLANTATION

EMC Silva, MT Sasaki, RAB Spanó, MCC Machado
Liver Unit – Department of Transplant and Liver Surgery, University of São Paulo Medical School, São Paulo, Brasil

Objective: To analyze retrospectively the evolution of 105 patients submitted to liver transplantation.
Methods: It was analyzed retrospectively 105 patients with age ranged 43,0 ± 14,9 years and 52 were male. The diagnosis were cirrhosis: virus C (n = 29), virus B (n = 16), alcoholic (n = 5), cryptogenic (n = 5), autoimmune hepatitis (n = 12), Budd-Chiari syndrome (n = 2), familial amyloidotic polyneuropathy (n = 2), fulminant liver failure (n = 21) and others diseases (n = 13). Their antecedents were: Diabetes (n = 5), systemic arterial hypertension (n = 13), portal hypertension (n = 29), smokers (n = 12) and chronic obstruction pulmonary disease (n = 2). They were submitted a two differents techniques of liver transplantation: piggyback (n = 75) and conventional method (n = 29). Data were submitted to statistical analysis through Student's test with significance level p<0,05.
Results: The intraoperative complications were: hemodynamic instability (n = 41), bleeding (n = 6), fibrinolysis (n = 3), pulmonary hypertension (n = 2), arterial and biliary surgical difficulty (n = 9 and n = 2, respectively), pulmonary embolism (n = 1) heart failure (n = 4), bronchial spasm (n = 1). The average consumption of blood cells were: red packed cells (3,8 ± 3 Units-U), plasma (1,3 ± 2,6 U), blood platelet (6,8 ± 7 U). The average times were: total ischemic time: 9,07 ± 2,5; anesthesia time: 11,05 ± 3,0; surgery time: 9,09 ± 3,0; weaning time: 17,20 ± 4,5 and mechanical ventilation time: 23,0 ± 19,3 hours. Measures of pulmonary volumes, vital capacity and respiratory muscles force before and after transplant are showed in table below.

	Before transplatation	Before extubation	p
Tidal volume (ml)	720,9 ± 290	561 ± 156	0,123
Respiratory rate (rpm)	17 ± 5	18,5 ± 6	0,685
Minute Volume (L/min)	10430 ± 4950	10178 ± 4848	0,949
Vital capacity (L)	3592 ± 758	2084 ± 770	< 0,0001
Maximum inspiratory pressure (mmHg)	84 ± 29	46 ± 17	< 0,0003
Maximum expiratory pressure (mmHg)	79 ± 24	42 ± 18	<0,0001

The radiological alterations found at the postoperative period were: atelectasis (n = 19), raised right diafragma (n = 39), pulmonary infiltrates (n = 14), pleural effusion (n = 17) and no alterations (n = 3). There were others postoperative complications like the needs of non-invasive mechanical ventilation after extubation (n = 17), reintubation (n = 15), reoperation (n = 27), hemodialysis (n = 21) and death (n = 31).
Conclusion: Despite the reduction of the vital capacity and respiratory muscles force after trasnsplantation, results of surgical incision, pain, anesthesia and others factors, it was not interfere in the weaning process.

0565 LUNG MECHANICAL STRESS INDUCED BY HIGH INSPIRATORY AIRFLOW

PRM Rocco[1], CSN Baez[1], SC Abreu[1], RM Lassance[1], LFM Prota[1], RC Figueira[1], MM Morales[1], VL Capelozzi[2], WA Zin[1]
1 Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; 2 University of São Paulo, São Paulo, Brazil

Background: During mechanical ventilation, high end-inspiratory lung volume determined by large tidal volume and/or high levels of positive end-expiratory pressure results in ventilator-induced lung injury (VILI). However, few studies have addressed the effect of ventilator parameters other than tidal volume, airway pressure, and PEEP in VILI.
Objectives: We tested the hypothesis that high inspiratory airflow is associated with the development of ventilator-induced lung injury. For this purpose, lung mechanics, histology, and type III procollagen (PCIII) mRNA expression in lung tissue were analyzed in normal animals.
Methods: Twelve normal male Wistar rats were anesthetized, tracheotomized, ventilated and randomly assigned to two groups as follow: volume control with airflow of 10 (F10) and 30 (F30) mL/s. Tidal volume was 10 ml/kg, respiratory rate was 100 breaths/min in F10 group and 170 breaths/min in F30 group, an inspiratory-to-expiratory time ratio of 1:2, and positive end-expiratory pressure was 5 cm H_2O. Six rats did not undergo mechanical ventilation (CTRL). Respiratory mechanical parameters were analyzed immediately after flow adjustment and after 2 h mechanical ventilation. Then, lungs were prepared for histology (light and electron microscopy) and type III procollagen (PCIII) mRNA expression was analyzed in lung tissue by (semiquantitative RT-PCR method). Because high flows led to high frequency, additional experiments were performed to rule out the potential effects determined by this factor. Thus, another group of rats were ventilated for 2 hours using a frequency of 100 breaths/minute, tidal volume of 10 mL/kg, and airflow of 30 mL/s.
Results: Each group had similar baseline characteristics for body weight and respiratory mechanics. Lung histology in F10 group was normal and similar to CTRL. Immediately after flow adjustment to 30 mL/s, lung static elastance did not alter, but raised 48% after 2 h mechanical ventilation. At this moment, lung histology showed areas of alveolar hyperinflation and collapse (25% and 29%, respectively, in comparison to CTRL). Furthermore, high flow yielded an inflammatory process characterized by marked cellular infiltration with neutrophils (11%), and a marked increase in PCIII expression (104% in comparison to CTRL group). High flow also induced epithelium disruption, hyaline membrane, and interstitial edema. Animals ventilated with airflow of 30 ml/s and frequency of 100 breaths/min, yielded a similar behavior to F30 group [static elastance (51%) and PCIII RNAm expression (93%)].
Conclusion: Ventilation with high inspiratory flow per se led to high tensile and shear stress yielding lung functional and morphological compromise. Limiting inspiratory flow can offer additional protection against the development of ventilator-induced lung injury.
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0566 FIRST CHILEAN MULTICENTRIC STUDY ABOUT THE PREVALENCE OF SEVERE SEPSIS IN THE INTENSIVE CARE UNIT (ICU)

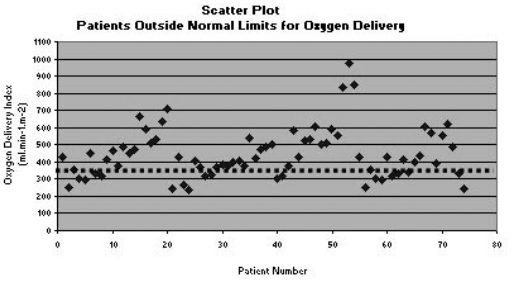
A Dougnac, M Mercado, M Cariaga, R Cornejo, G Hernandez, M Andresen, G Bugedo, L Castillo
Catholic University of Chile, Santiago, Chile

Background Severe Sepsis (SS) is the leading cause of death in the ICU; it has variable prevalence and mortalities that fluctuated between 25 and 60%. In spite of its importance, in Chile there are no epidemiologic data of this syndrome.
Objectives Recognize SS prevalence on Chilean ICUs. Evaluate epidemiologic characteristics and mortality rate at 28 days of the studied population, with emphasis on the patients with SS.
Methods An observational cross-sectional study using a pre-designed written survey was done in all the 64 ICU of Chile on April 21, 2004 at 8:00 am. The survey includes general hospital and ICU data and the number of hospitalized patients in hospital and in the ICU at the survey day. Follow up was done for 28 days.
Results 92% of the ICUs participated in the survey. The ICU occupation index (percentage of use) was 66% (283 patients on 430 beds available). There was a male predominance (59%), average age of 57.7 ± 18, APACHE II score of 15 ± 7.5 and SOFA score 6 ± 4. SS was the admission diagnosis of 94 of the 283 patients (33%), in addition 38 patients presents SS after their admission. At the survey day 112 patients fulfil SS criteria (40%). APACHE II and SOFA scores were significantly higher in SS patients than in non SS patients. Global mortality at 28 days was 15.9% (45/283). Those with SS at survey day had a mortality of 26.7% (30/112) in comparison wit those without SS who had a mortality of 8.7% (17/171) $p<0.05$. Of the patients who develop SS after their admission 13% died. At survey day 126 patients were hospitalized in the Capital (Santiago), 55 with SS; and 157 on other cities, 57 with SS. Mortality between SS patients of Santiago and the other cities was similar, but APACHE II score was significantly higher in Santiago's patients. 99% of SS patients had a known sepsis focus, 48% respiratory and 30% abdominal. Of the patients that present SS after admission the most common focus was the respiratory (84.6%).
Conclusions SS is highly prevalent in Chilean ICU and represents the leading diagnosis at admission. SS is associated with higher APACHE II and SOFA scores and with a significantly higher mortality in our survey. SS patients treated in Santiago presents significantly higher APACHE II score than SS patients treated in other cities, but similar mortality.

0567 CARDIAC OUTPUT MEASUREMENT - AN INCOMPLETE STORY LIDCOPLUS® DERIVED OXYGEN DELIVERY

M Jonas, J Nixon, D Sparkes, J Fennel
Southampton General Hospital

Background: Oxygen delivery (DO2) is the product of cardiac output (CO) and the arterial oxygen content. Under normal physiological circumstances CO and DO2 are linked to the metabolic requirement of the tissues. In critically ill patients however, this coupling may become abnormal and the ability to maintain tissue DO2 becomes a prognostic variable.
A number of well conducted, randomised, controlled trials and subsequent meta-analyses have shown that manipulating DO2 in selected groups of critically ill patients can improve survival and decrease length of hospital stay.
Despite a growing literature supporting targeting and maintaining DO2, it is apparent that this variable is rarely calculated, or appreciated, despite the fact that the cardiac output has been measured.
Hypothesis: This study was designed to assess the variation and clinical appreciation of DO2 in sick ITU patients in whom CO had been measured.
Methods: 75 critically ill adult patients, with a variety of diagnoses, admitted to General Intensive Care were studied with consent and ethical committee approval. CO was measured after stabilisation using Lithium Dilution which is a validated indicator dilution method routinely used to calibrate a continuous arterial waveform analysis monitor (LiDCOplus). The investigators then reviewed the DO2 data as this machine can also calculate and continuously display DO2 data using imputed saturation and haemoglobin values. These variablew were then analysed as Indexed values,(used to compensate for patient size differences), Cardiac Index (CI) and Oxygen Delivery Index (DO2I)
Results: For the purposes of this study the normal range was taken as being the normal value 540ml.min-1.m-2 ± 30%.(378-702 ml. min-1.m-2) Values below the range would be considered as being low.
Discussion/Conclusion: No patients in the study group had a CI below the calculated normal range, however DO2I (Figure) showed a fivefold variation across the group with 22/75 (29%) patients having a DO2I below the normal range. These findings were covert, coincident with anaemia and/or poor respiratory gas exchange. The suggestion was that the clinical team were successful in optimising CI, but there had been a failure to appreciate the coupling of flow with oxygen content. This population of critically ill patients may represent a subgroup whose survival may be enhanced by CO augmentation and optimisation of DO2.
The advent of less invasive methods for continuous measurement of CI and now DO2I, without significant incremental risks, may enable early identification of at risk patients and introduce new standards of care for high risk patients.



0568 MYELOPEROXIDASE – A NEW RISK PREDICTOR FOR ACUTE CORONARY SYNDROME

R Esporcatte, HCV Rey, RM Rocha, CG Salgado, MI Bttencourt, MI Garcia, FOD Rangel, HF Dohmann, HT Mendonça
Coronary Care Unit/Hospital Procardíaco/ PROCEP

Background: The leukocyte enzyme myeloperoxidase has been linked to the development of lipid-laden soft plaque, the activation of protease cascades affecting the stability and thrombogenicity of plaque in acute coronary syndromes. Recent study showed its potential usefulness for risk stratification among patients who present with chest pain.
Objective: To determine whether measurement of myeloperoxidase can predict acute myocardial infarction in patients admitted to a chest pain unit.
Methods: From July to December 2004, we conducted a prospective observational cohort study in 140 patients presenting to the emergency department within 24 hours after the onset of chest pain of suspected cardiac origin. Subjects who were at least 21 years old and with no history or clinical evidence of inflammatory, immunological or neoplasic disease were eligible to participate. Demographics, clinical profile and outcomes were recorded. Admissional myeloperoxidase was measured and correlated with clinical outcome.
Results: The study population consisted of 140 patients (54% male); mean age 63.7 ± 13.9 years, 62.8% with systemic hypertension and 27.8% were diabetics. Myocardial infarction was the final diagnoses in 9.3% of pt. A cutoff point of 100pM was selected with the use of the C Statistical method. This cutoff point showed a sensitivity of 92%, a negative predictive value of 98%, an negative likelihood ratio of 0.19 and odds ratio of 8.1 (p=0.031). By multiple regression including other conventional risk factors, this level of admission myeloperoxidase was identified as an independent predictor of myocardial infarction (odds ratio of 8.0; p= 0.048).
Conclusion: Myeloperoxidase measured soon after admission due to chest pain is a new risk marker for acute coronary syndromes. Its usefulness as a strong independent predictor for acute myocardial infarction must be considered.

0569 ANEMIA IS A STRONG PREDICTOR OF IN-HOSPITAL COMPLICATIONS AND MORTALITY FOR PATIENTS ADMITTED DUE TO DECOMPENSATED HEART FAILURE

RM Rocha, MI Bittencourt, R Esporcatte, HCV Rey, F Ferreira, GLGA Junior, EP Bernardo, FOD Rangel
Coronary Care Unit/ Hospital Procardíaco/ PROCEP

Background: Anemia is a common finding in decompesated heart failure (DHF) and is associated with high mortality rates. Mechanisms for association between these syndromes are unclear and probably multifactorial.
Aims: To identify contributing factors for anemia and its contribution for worse prognosis in patients with DHF.
Methods: From January 2003 to December 2004, we studied a cohort of 135 pt (54% male, mean age 76.5±11.08 years, 79.6% NYHA class IV) admitted to coronary care unit due to DHF. They were divided in 3 groups (G) according to admissional hemoglobin (Hgb)(G 1: Hgb >12 g/dl; G 2: Hgb = 10 – 12 g/dl; G 3: Hgb <10 g/dl) and baseline demographics, laboratory findings, need of blood transfusion, in-hospital complications and mortality were compared. Statistical analyses were performed with Kruskal-Wallis test (laboratory findings) and Pearson´s Chi-square (other variables)
Results: Most of the pt were on G1 (54.1%) (G 2 = 37.1%; G 3 = 8.8%). Pt on G 3 (male 66.6%, p=0.002) had more previous history of renal dysfunction (41.7%, p=0.003), higher levels of B-type natriuretic peptide (p=0.03) and D-dimer (p=0.001), needed more blood transfusions (66.7% of pt, p<0.0001) and all pt had at least one complication (p=0.039). Importantly, in-hospital mortality rates were significantly different among groups (G 1 = 4.1%, G 2 = 3.8%, G 3 = 33.3%, p=0.003)
Conclusions: In decompensated heart failure, anemia is a strong predictor of in-hospital mortality and complications. Increased prevalence of renal dysfunction and necessity of blood transfusion observed in these pt may be related to the mechanisms of higher mortality.

0571 MANAGING THE CHALLENGE TO DELIVER EFFECTIVE AND APPROPRIATE INTENSIVE CARE - THE COMMISSIONING OF A NEW INTENSIVE CARE SERVICE AND THE DEVELOPMENT OF AN INTEGRATED "HOTFLOOR" MODEL

BJ Abbenbroek
Royal Prince Alfred Hospital, Sydney, Australia

Background/Objectives: There is an increasing demand for complex intensive care which is resource intensive and faces the challenges of resource limitations, skilled workforce shortages and escalating costs.
The concentration of intensive care services into large integrated units is emerging as a strategy to meet this challenge by consolidating resources, allowing greater flexibility in the model of intensive care delivered and providing hospitals with the opportunity to become "magnate" units to attract skilled staff.
In July 2002 the new Intensive Care Service was commissioned which is a 54 bed integrated critical care unit which incorporated Cardiothoracic ICU, Neuroscience's ICU, General ICU and a new High Dependency Unit.
The new "hotfloor" model provided both challenges and opportunities to implement new models of care, operational processes and critical care management.
Ongoing monitoring of clinical indicators to evaluate patient, staff and organisational outcomes is critical to the success of this process.
Methods: A comprehensive set of 19 clinical indicators were collected on a daily basis prior, during and following the commissioning of the new integrated Intensive Care Service between January 2001 and June 2005. The indicators provide measures of clinical activity and quality of care characteristics of the service including length of stay, mortality, access block, unplanned readmission's, unplanned extubations and cross infection rates.
The clinical indicator data set was evaluated in 6 month intervals over the period studied which coincided with the move to the new intensive care unit in July 2002 providing an opportunity to compare activity and outcomes.
Results: A significant increase in activity occurred following the move to the new unit however reductions in the average length of stay, mortality, admissions refusals, access block, unplanned readmission's, mechanical restraints, pressure areas and cross infections were demonstrated.
Conclusions: The building and commissioning of a new integrated Intensive Care Service, which utilised the "hotfloor" concept, provided the opportunity to implement innovative models of intensive care and new management models. A positive impact on both organisational and patient outcomes was demonstrated.
The clinical indicator data set provided a valuable and unique opportunity to evaluate the impact of these strategies and the effectiveness of the change management processes used to facilitate the commissioning of the new unit.
Large integrated intensive care services provide an increased opportunity to manage the demands and resource limitations that challenge the effective and appropriate delivery of intensive care.

0572 DURATION OF MECHANICAL VENTILATION AFTER CORONARY SURGERY. PROGNOSTIC IMPLICATION

A Piacenza, M Romero, D Cardozo, S Detournemine
Institute of Cardiology "J F Cabral." Corrientes. Argentina

OBJECTIVES: To determine subgroups of patients based on the duration of mechanical ventilation in postoperative coronary surgery and to evaluate perioperative associated factors as well as differences in mortality among these groups.
MATERIAL AND METHODS: Analysis of 874 serial patients-data admitted to ICU in the immediately after coronary surgery (1998 - 2004). The duration of mechanical ventilation was evaluated in hours.
Variables were analyzed: a)Preoperative: sex, age< 70 years, COPD, obesity, elective surgery. b)Intraoperative: Surgery without Cardiopulmonary bypass (CPB), prolongued CPB, use of intraaortic balloon pump (IABP), difficult CPB weaning c)Postoperative: low cardiac output, acute renal failure, bleeding requiring reoperation, neuroleptics use.
Statistical Analysis: univariate analysis by means of the test of Chi square. It was considered statistically significant a value of p <0.05.
RESULTS: The incidence of early extubación (EE: ≤10hs) it was of 69,6%, overnight ventilation (OV: 11-24 hs) was of 20,6% and the prolongued ventilation (PV:>24 hours) was of 9.8%. -
Conclusions: groups of patients were determined based on the duration of postoperative mechanical ventilation: EE, OV and PV. The EE had a larger proportion of male pts, younger patients, electively operated and without CPB surgery. The PV was associated to other postoperative complications. Mortality was significantly different among the three groups, being very high in patients with PV.

Perioperative Factors associated to Early Extubación (EE):

Variable	EE (%)	Odds Ratio	IC 95%	p
Male sex	72.0	1.7	1.2-2.4	<0.01
Age <70 years	71.4	1.5	1.1-2.2	<0.02
Elective surgery	74	3.5	2.3-5	<0.001
Without CPB	78	2.3	1.7-3	<0.001

Perioperative Factors associated to Prolonged Ventilation (PV):

Variable	PV (%)	Odds Ratio	IC 95%	p
Difficult weaning CPB	42.6	9	5-17	<0.001
Prolongued CPB	15.2	2	1.1-4.0	<0.05
Acute renal failure	41	9	5-17	<0.001
Low cardiac output	26.6	5	3-9	<0.001

Surgical Mortality: The global mortality was of 3,9% .

Comparisons	Mortality (%)	OR	IC 95%	Value of p
OV vs EE	5.9 vs 1.4	4.5	1.7-12	<0.001
PV vs OV	16.3 vs 5.9	5	1.8-17	<0.001
PV vs EE	16.3 vs 1.4	8	3.6-20	<0.001

0573 MELD SCORE AT ICU ADMISSION IS THE BEST PREDICTOR OF OUTCOME IN ADULTS WITH FULMINANT HEPATIC FAILURE

P Klin, S Yantorno, V Descalzi, S Perez Lloret, L Podesta, F Villamil, F Klein
Favaloro Foundation. Buenos Aires. Argentina

BACKGROUND: Acute liver failure / Fulminant hepatic failure (ALF/FHF) is a life threatening disease characterized by severe coagulopathy, hepatic encephalopathy and frequent multiorganic dysfunction requiring ICU admission and eventual liver transplantation (LT).
OBJECTIVES: Our aim was to describe the features of patients (p) admitted with a diagnosis of ALF/FHF and analize the data to identify outcome predictors.
METHODS: A retrospective cohort study is presented. Between March 25th, 1996 and December 30th, 2004 fifty-five consecutive adult p were admitted to the FF ICU with a diagnosis of ALF/FHF. Regarding outcome, patients were divided into three groups: Group I: deceased (11 p; 20%); II: alive without LT (2 p); III: received LT (42 p; 76%).
Classical ICU scores (APACHE II, SAPS II, admission SOFA and TISS 28) were registered
Results are presented as median and ranges. Statistical significance was obtained through the Chi-Sq and Kruskal –Wallis tests.
RESULTS: Median age was 34.5 years (15-65 years) with a male/female ratio of 0.42. Clinical presentation was subacute in 20% of the cases (11 p), acute in 44% (24 p) and hyperacute in 35% (19 p). Glasgow coma score (GCS) at the ICU admission was 12 (3-15), twenty p. (36%) were admitted with a GCS =< 8). The MELD, APACHE II, SAPS II, SOFA and TISS 28 scores were calculated for all the groups as displayed in the table.

	I	II	III	Kruskal-W p
MELD	41	26	31	0.02
APACHE II	16	4	12	0.3
SAPS II	43	20	35	0.2
SOFA	11	5	8	0.1
TISS 28	20	Not available	14	0.1

CONCLUSIONS: An admission GCS of =< 8 was present in 36% of p. Most (76%) of the p. received a LT. The MELD score at ICU admission showed to be a useful short term outcome prediction tool in this ALF/FHF population among groups I, II and III, while the rest of the ICU scores calculated in this study were not statistically discriminatory.

0574 ADHERE MODEL AS A TOOL FOR IN-HOSPITAL MORTALITY RISK STRATIFICATION IN PATIENTS WITH DECOMPENSATED HEART FAILURE ADMITTED IN CRITICAL CARE UNIT

HCV Rey, MI Bittencourt, RM Rocha, FOD Rangel, ALC Marins, GLGA Junior, EP Bernardo, R Esporcatte
Coronary Care Unit/ Hospital Procardíaco / PROCEP

Context: Decompensated heart failure (DHF) is responsible for high morbidity and mortality. Estimation of mortality risk in patients admitted with DHF helps clinicians guiding care. Models for risk stratification of patients during admission for ADHF are not well established. The Acute Decompensated Heart Failure National Registry (ADHERE) developed a tool for risk stratification for patients hospitalized with DHF.
Objective: To validate the ADHERE risk stratification model in a cohort of patients with DHF.
Design, Setting, and Patients: Cohort study of 137 consecutive patients admitted to coronary care unit with a primary diagnosis of DHF was conducted to determine the validity of ADHERE risk stratification model. Demographics, clinical details, laboratory data and clinical outcome were recorded. The risk stratification model was applied and correlated with clinical outcomes.
Results: Baseline characteristics and main outcomes of this cohort were: 54% of patients were male, mean age was 76.52 ± 11.08 years and 79.6% of patients were considered on NYHA class IV. In-hospital mortality was 9.2%. Admission ADHERE risk stratification was performed and we identified 70.67% of patients as low risk and 20.3%in the intermediate risk group. No one was classified in the high-risk group. There was no correlation between ADHERE risk stratification model and in-hospital mortality.
Conclusions: In our small cohort of patients admitted due to decompensated heart failure, the ADHERE risk stratification model did not accurately predict hospital mortality.

0576 CONTINUOUS GLUCOSE MONITORING SYSTEM IN CRITICALLY ILL PATIENTS IN A MEDICAL/SURGICAL INTENSIVE CARE UNIT

P Martins, H Cristofolo, A Antonio, R Conishi, G Amarante, P Ribeiro, G Schettino
Hospital Sírio Libanês, Sâo Paulo, SP, Brazil

Background: Hyperglycemia and insulin resistance are common in critically ill patients, even if they have not previously had diabetes. Intensive insulin therapy to maintain tight blood glucose control reduces morbidity and mortality among those patients as shown more recently in some randomized controlled studies. Continuous glucose monitoring systems have been used to access the range of glucose control in ambulatory diabetic patients, but few data is available to support its use in critically ill patients. Objective: This study was designed to test the accuracy and reliability of a continuous glucose monitoring system (CGMS-MiniMed, Medtronic) in critically ill patients in a surgical-medical intensive care unit in a tertiary hospital. Methods: We prospectively enrolled 6 consecutive patients (4 male, age= 68 ± 12 years) who had their blood glucose controlled by the attending physicians not involved in this study. The glucose values obtained by intermittent capillary blood samples using glucometry (ICG – finger prick) were compared offline with CGMS data for a period of 24 hours. Results: Four patients received a continuous infusion of insulin according to our protocol to maintain blood glucose between 90 to 150 mg/dl. Only one patient had known diabetes, 66% were on inotropic drugs for shock, 66% received corticosteroids, 83% received enteral or parenteral nutrition and 66% were mechanically ventilated. A total of 92 paired IGM-CGMS values were analyzed. Error grid analysis showed that 80.2% of the measurements were accurate. The overall correlation coefficient (r) was 0.69 ($p<0.01$), with a mean IGM-CGMS difference of 16 ± 32.2 mg/dL. Conclusion: We conclude that the CGMS provides reasonable accuracy in critically ill patients when compared to ICG. The CGMS is promising for potential use in critically ill patients if validated in larger studies.

0577 THE INTERNATIONAL STANDARD ORGANIZATION 9001-2000 CERTIFICATION IMPROVES THE PROCESS OF ATTENTION IN THE EMERGENCY ROOM

GF Vazquez de Anda, M Martinez M, A Rubi D, M Arzate, G Alcazar F, JA Arzate V
ISSEMYM Medical Center

Introduction: Emergencies constitutes one of the most demanding processes of a hospital, for that reason a Quality System (QS) should be implemented to measure the process of attention (PA) in the Emergency Room (ER). The International Standard Organization (ISO) 9001-2000 is a QS based on the measuring of processes. Therefore, the aim of this study is to determine the benefits of the ISO 9001-2000 certification on the PA in the ER of a highly specialized teaching hospital.
Material and Method: The ISO 9001-2000 quality system started in our hospital in April 2004. The attention process for emergencies in the ER was defined. Three objectives were pointed to improve the quality of PA: 1) improvement of the PA in 2%, 2) reduction of the time for attention (TA) in 3% and 3) improvement of the satisfaction (SA) for the consultation in the ER in 10%. A period of basal measurements was established and a serial of errors during the PA was listed. Then, a quality committee met and ruled an improvement program to decrease the chance of error during the PA. Every day we measured the PA according to an initial evaluation (triage) in each patient at the entrance of the ER. A real emergency was defined when life, a system and/or an organ is on danger and/or at risk of failure. We established three levels of triage; Level 1: patients without a real emergency condition; Level 2: a real emergency without critical illness; Level 3: patients with a critical condition. Descriptive statistical was performed according the ISO 9001-2000 statistical manual.
Results: 7785 consultations at the ER were given from August 2004 to January 2005. A clear negative correlation was observed over time about the number of consultations in the ER. At the end of the study-period we observed a reduction of more than 1000 consultations per month from patients with Level 1 ($p<0.05$). Also, we observed a reduction of 20% (from 80% to 60%) of patients with Level 1, and an increase of 36% (from 10% to 46%) of patients with Level 2. No changes in the number of patients with Level 3 (from 3 to 4%). The proportion of error during the PA decreases from 0.08000 to 0.040000 ($p<0.001$). The TA decreases over time. While in August the mean TA was of 14.33± 9.21 minutes by the end of January the mean TA was 6.93±10 ($p<0.001$). The SA for the consultation and treatment in the ER improves from 80% to 90%.
Conclusion: The implementation of ISO 9001-2000 in the process of the ER improves the attention of real emergencies, decreases the time for attention and improves the quality of the PA.

0578 USE OF NON INVASIVE VENTILATION PROTOCOL IN THE ADULT INTENSIVE CARE UNIT OF THE HOSPITAL REGIONAL TRELEW

CA Ardiles, B Stegmuller, J Leyria, J Vecchio, P Insaurralde
Adult Intensive Care Unit, Dr.Adolfo Margara Regional Hospital of Trelew, Chubut.Argentina

Objetive: To assess the evolution of the patients included in the non-invasive ventilation protocol (NIV) and to encourage its use when it allows for the avoidance of orotracheal intubation (OI) and conventional mechanical ventilation.
Materials and Method: Fifty six (56) patients (p), 8 female, 48 male, mean age 62.5 years old (aged between 28 – 80), with a mean APACHE score of 16.07 (from 12 to20) participated in a prospective observational study in the period ranging from 01/06/2000 to 30/12/2004.
The parameters for inclusion in the NIV protocol are at least three of the following:
1)Respiratory frequency (fR) > 25;2)PH = < 7.30;3)PCO2 > 45 mmHg,4)Use of accessory muscles,5)Paradoxical respiration.6)Moderate to severe dyspnea,7)Peak expiratory flow < 100 l/m.
The optimal PS level was achieved with a fR < 25 rpm - a tidal volume > 5-7 mg/k - Decreased use of accessory muscles.
The adequate PEEP level was attained by reducing the respiratory activity linked to the presence of auto-peep, thus enabling the beginning of the Inspiration, the trigger, aiming at an oxygen saturation of over 90%.The assessment continued for a period of two hours. An arterial gasometry was performed before initiating the assessment and was repeated 45 minutes and then 2 hours after the beginning of the evaluation. In case failure signals were observed once the two hours were completed, orotracheal intubation and conventional mechanical ventilation were initiated.Failure signals:1)Mask intolerance,2)Peristance of tachypnea despite the progressive increase of PS. A fR => 36rpm will determine the protocol disruption.3)Absence of clinical or gasometric improvement once the specified time was over.4)Progression of acidosis.
Outcomes: The pH, Pco2, fR and Po2 improvement in patients who responded satisfactorily to the NIV was already evident 45 minutes after the procedure was performed, thus allowing for the avoidance of OI and mechanical ventilation. There was a pH increase of 0,12 , a Pco2 decrease of 11,64 mmhg, a Po2 increase of 16 mmhg and a decrease in the fR of 11,5 rpm, which remained stable for two hours. Over a total sampling population of 56 p, OI and mechanical ventilation were avoided in 83,9% (47p) whereas in 16% (9p) the NIV proved unsuccessful, demanding OI and subsequent mechanical ventilation procedures 45 minutes after the initiation of the assessment, during which period no signal of improvement were shown in the variables under consideration.
Conclusion: The use of the NIV protocol allowed us to identify, 45 minutes after the initiation of the procedure, those patients who responded successfully and did not need OI or mechanical ventilation, and those who did not respond to said procedure and required OI and conventional mechanical ventilation. The lack of pH improvement within the 45 minutes following the initiation of the NIV can be considered a possible indicator of the NIV failure.

0579 OUTCOME OF SEPTIC SHOCK PATIENTS WITH RELATIVE ADRENAL INSUFFICIENCY

G Friedman[1], R Silva[2], M Becker[2], L Gehrke[2]
1 Hospital de Clinicas de Porto Alegre; 2 Complexo Hospitalar Santa Casa

Introduction: Septic shock may be associated with relative adrenal insufficiency. A replacement therapy with low doses of corticosteroids has been proposed to treat septic shock.
Objective: To describe outcome of a cohort of septic shock patients with a treatment strategy guided by a short corticotropin test.
Design and setting: Observational and prospective cohort of severe septic shock patients treated in a general ICU of a university hospital.
Material and Methods: 33 patients who fulfilled criteria for severe septic shock. In all patients a short corticotropin test (250 mcg) with cortisol measured at 0, 30 and 60 min. Response to test was considered whenever the difference between baseline cortisol and pick cortisol was greater than 9 mg/dl. Low dose corticosteroids (hydrocortisone 50 mg, IV, 6/6 hrs) was given to all patients and maintained only when the patient was a non-responder.
Main outcome measure: Twenty-eight day mortality.
Results: Total mortality rate was 65% (21/32). The non-survivors where older (68.5±11.5 vs 53.9±20.2, p=0.014), had a higher baseline cortisol (27.5±17.7 vs. 17.0±12.9 mcg/dl, p=0.043). APACHE II, pick cortisol, delta cortisol and albumin where not different. There were 15 responders and 17 non-responders to the corticotropin test. In non-responders, mortality rate was 64% (11/17) and in responders it was 66% (10/15). Responders had a higher baseline cortisol (29.1±20.7 vs. 19.2±11.1 mg/dl, p=NS), higher pick cortisol (45.4±21.9 vs. 23.7±10.3 mcg/dl, p=0.001) and higher delta cortisol (16.3±5.9 vs. 4.7±2.3 mcg/dl, p<0.001). Age, APACHE II and albumin were similar. Vasopressor therapy was withdrawn in 20 patents and 8 patients were responders (40%). Among 12 patients not weaned from vasopressors, 7 (58%) were responders. Hypoalbuminemic (albumin <2.5 g/dl) and non-hypoalbuminemic patients had no differences among measured variables. However, 60% (15/25) of hypoalbuminemic but only 28% (2/7) of normoalbuminemic patients were non-responders.
Conclusions: Mortality rates among responders and non-responders were equivalent and may indicate a beneficial effect of low dose hydrocortisone. Hypoalbuminemia may i nfluence response to corticotropin test once most hypoalbuminemic patients were non-responders.

0580 ACCIDENTAL EXTUBATION IN A PEDIATRIC INTENSIVE CARE UNIT

RP Santos, SB Marchini, V Sekkel
Instituto Israelita de Ensino e Pesquisa Albert Einstein. Department of Maternity and Children. Albert Einstein Hospital, Sao Paulo, Brazil

Background: The endotracheal intubations and the mechanic ventilations are routine procedures in pediatric intensive care units. Despite the technical procedures to be established, there are daily inherent risks in children and adolescent care that can still lead to the accidental extubation. The accidental extubation can be defined as a not planned extubation. If ventilation is inadequate or absent, the nurse begins to ventilate the child using a bag-valve mask with a reservoir and high-flow oxygen. This event can take to hypoxemia, bradicardia and in some cases it can cause death. All not planned extubation, that could have caused iatrogenic damage for the patient, must be analyzed to unravel the causes, in order to prevent the persistence of an error in the nursing care process. Albert Einstein Hospital is a general hospital in São Paulo – Brazil, with 420 beds. The PICU has 9 beds, for patients from neonates to adolescents. The accidental extubation was treated like an adverse occurrence and could be detected by any professional of PICU.
Objectives: The aim of this study is to present the construction of a quality indicator for the process of maintenance of the endotracheal intubations in critically ill children.
Methods: Descriptive study. Monitoring of the number of iatrogenic extubation from August 2004 to January 2005. Goal: absence of iatrogenic extubation and original causes.
Results: In the studied period we founded:
August: 0: 19 patients intubated/day
September: 0: 18 patients intubated/day
October: 1 (not planned extubation): 26 patients intubated/day
November: 0: 28 patients intubated/day
December: 0: 19 patients intubated/day
January 2005: 0: 7 patients intubated/day
Factors that contribute to the occurrence are: age-group (child up to one year), accumulation of secretions, sedation level, inefficient restriction of the members, execution of procedures and inadequate intubation path. However, despite the analysis of the unique occurrence, we can identify clearly the lack of the systematic approach to sedation and the dependence on subjective assessment as barriers to effective sedation.
Conclusion: Sedation is a necessary part of intensive care and maintaining an optimal level of sedation is an important procedure. Sedation aims to diminish pain and to promote comfort and compliance with routine care and ventilation. Sedation is associated with sudden changes in consciousness, distress, agitation and accidental displacement of lines, intolerance of mechanical ventilation and hemodynamic disturbances. Inadequate sedation contributes to family distress. As we can see the results of the study strengthen the necessity of the intensive care unit to adopt a protocol of sedation and analgesia to suggest the lack of sedation.

0581 PLATELET-ACTIVATING FACTOR ACETYLHYDROLASE ACTIVITY IS INCREASED IN EARLY STAGES OF ACUTE LUNG INJURY

JIF Salluh[1], FA Bozza[1], AV Pino[4], EF Assis[2], RN Gomes[2], HSP Souza[1], A Gianella Neto[4], GA Zimmerman[3], HC Castro-Faria-Neto[2], PT Bozza[2]
1 Hospital Universitário Clementino Fraga Filho, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil; 2 Fundação Oswaldo Cruz, Rio de Janeiro, RJ;Brazil; 3 University of Utah, Salt Lake city, Utah , USA; 4 Programa de Engenharia Biomédica, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ;Brazil

Background/objectives- Platelet-activating factor (PAF) is a potent proinflammatory mediator that plays a central role in the pathogenesis of acute respiratory distress syndrome (ARDS). PAF- acetylhydrolases (PAF-AHs) are enzymes that recognize PAF, terminates their signals and regulates inflammatory response. The understanding of PAF-AH kinetics during acute lung injury (ALI) is crucial in defining the role of PAF-AH in the pathophysiology of this syndrome. In this study, we describe the kinetics of plasma and bronchoaleveolar lavage (BAL) PAF-AH in the early phase of ALI.
Methods- Six piglets were ventilated for six hours after ALI was induced by means of oleic acid intravenous infusion. After ALI was established a recruiting maneuver was applied and PEEP levels titrated to the best compliance. Elastance, peak pressure, and plateau pressure were continuously recorded. Blood arterial gases were analyzed every 2 hours. Blood and BAL samples were collected every two hours (times 0,2,4,6h and "injury" time defined as the moment when Ali criteria was achieved) for the measurement of cytokines and PAF-AH. PAF-AH activity was measured using a colorimetric enzymatic assay (Cayman Chemicals, Ann Arbor, MI, USA). Interleukin-6 (IL-6) and IL-8 were measured using enzyme-linked immunoassays (ELISA, R&D systems). Kruskal-Wallis and Mann-Whitney tests were used. A $p < 0.05$ was considered statistically significant. All data are expressed as mean ± SEM.
Results- A decrease in oxygenation was observed in all animals as reflected by PaO2/FiO2 ratio (t0= 435 ± 61mmHg vs injury = 100 ± 21mmHg, p=0.007) and, was followed by an increase in pulmonary elastance (t0= 33 ± 4 vs injury (t6) = 62.8 ± 8.6, p=0.015). We observed increases in neutrophil count (t0= 0.05 ± 0.04 vs t6h= 3.6 ± 0.91x106, p=0.002) in BAL. Elevation in BAL total protein count (t0= 193.2 ± 119.1 µg/mL vs t6h= 1038 ± 268.3 µg/mL, p= 0.008) was present. Significant increases of IL-8 levels in BAL fluid were observed (t0= 0.15 ± 1.06 vs t6h= 5.06 ± 1.24 pg/ml, p=0.02) but could not be demonstrated in plasma samples. IL-6 levels were negligible in BAL and plasma samples. PAF-AH activity was corrected by total protein content in plasma and BAL. After normalized per protein, PAF-AH activity in BAL was significantly increased at the end of the experiment compared to baseline (PAF-AH T0= 0.001 ± 0.001 nmol/ml/min/g vs 0.031 ± 0.018 nmol/ml/min/g, p=0.04). Despite of correction by total protein content, plasmatic PAF-AH activity increased but did not reach statistical significance throughout the experiment (p=0.81).
Conclusions- In an oleic acid model of ARDS there is significant elevation in BAL but not plasmatic levels of PAF-AH during the early stages of ALI. We hypothesize that the increase in PAF-AH levels are due to local production of PAF-AH instead of leakage from plasma and it represents a way of counteracting the pro-inflammatory stimuli in the alveolar milieu occurring in the very early stages of ALI/ARDS.

0582 ANALGESIA-BASED SEDATION WITH REMIFENTANIL OR MORPHINE IN PATIENTS WITH SEVERE SEPSIS AND ALI/ARDS

R De La Fuente, M Cariaga, V Segovia, W Merino, MS Lienlaf, C Romero, R Cornejo, I Cortinez, L Castillo, G Hernandez, G Bugedo
Pontificia Universidad Católica de Chile. Santiago, Chile

Background: Analgesia-based sedation has been widely used in high-risk surgical patients, but few data exist on severe sepsis and ALI/ARDS. We assessed the efectiveness of remifentanil and morphine as a first line sedative agent in this critically-ill patients.
Methods: Patients fulfilling severe sepsis and ALI/ARDS criteria, and requiring mechanical ventilation were prospectively studied. We excluded those with previous renal impairment. We randomized patients to receive a continuous infusion of remifentanil (0.05 up to 0.30 µg/kg/min) or morphine (12 up to 72 µg/kg/h) in a blinded way to score 4-5 points in the sedation-agitation scale (SAS)[1], with rescue i.v. boluses of midazolam and fentanil as required. Midazolam (0.015-0.09 mg/kg/h) was started if adequate sedation was not reached at maximum opiate doses. SAS scores and sedative drugs were registered each 6 hours.
At 48 hours sedation was gradually decreased if clinical and ventilatory condition improved and an spontaneous breathing trial was attempted. If unsuccesful, it was repeated at 72 hours. Extubation decision and sedation after 72 hours was according the attending physician.
Results: Seventeen patients (12M/5F, 53±18yo, PaFiO2 206±104, APACHE II 20±6) receive remifentanil (n=9) or morphine (n=8). Mean doses of remifentanil were 0.15 and 0.17 µg/kg/min, and for morphine 51 and 52 µg/kg/h, at 24 and 48 hs Time fraction on SAS score 4-5 was 80%, SAS 3, 5%, and SAS 6-7, 15%. Most patients required additional i.v. boluses, specially during the first 6 hours. However, only 4 (24%) required a continuous midazolam infusion. Seven (41%) patients were extubated within 72 hours.
Conclusions: Analgesia-based sedation with remifentanil or morphine is highly effective in patients with severe sepsis and ALI/ARDS, achieving optimal sedation more than 80% of the time.
1. Riker RR, et al. Crit Care Med 1999; 27: 1325-9

0583 GLASGOW 7 SURVEILLANCE PROGRAM: EPIDEMIOLOGY AND OUTCOME IN ARGENTINEAN INTENSIVE CARE UNITS

JL Bustos[1], IJ Previgliano[2], C Soratti[1]
1 INCUCAI - Buenos Aires Argentina; 2 On behalf of the Quality Guarantee Program in the Donation Transplantation Process Coordinators

Background: Since September 1st 2003 the National Institute Coordinator Center for Organ Procurement of Argentina (INCUCAI) developed the Procuration Federal Program. As part of it a Quality Guarantee Program in the Donation Transplantation Process surveillance all possible organ donors identify as having a Glasgow Coma Scale (GCS) score of 7 or bellow. The aim of this study is to present the epidemiological data and outcome.
Material and method: INCUCAI placed regional and hospital coordinators that gather all data from all the country. Each month all the coordinators send an electronic data sheet in which are the following items: name, gender, age, document, coma etiology (divided in trauma, stroke, anoxic encephalopathy, brain tumors and others), date of coma development and date of events (cardiac arrest, brain death, discharge or derivation) and all the organ transplantation process. These data is collected and processed only by one of the authors (JLB).
Results: From September 1st 2003 to December 31st 2004 5561 patients were enrolled in 90 hospitals of all the Argentinean states. Stroke patients represented 44% of the population, while head trauma accounted for 32%, anoxic encephalopathy 9%, brain tumors 4% and others 11%. In table 1 causes and outcome are showed. Regarding gender 65% (3623) were male, mean age for adults was 50±19 yo and for children 5±4 yo. All the pathologies are spread according sex and age, as it will be seen in the presentation as well as regional variations.

Etiology	Discharged (%)	Cardiac Arrest (%)	Brain Death (%)
Head injury traffic related	429 (44%)	286 (30%)	246 (26%)
Head injury gunshot wounds	32 (12%)	71 (27%)	162 (61%)
Head injury falls	82 (39%)	73 (34%)	57 (27%)
Head injury others	160 (45%)	113 (31%)	87 (24%)
Ischemic stroke	107 (25%)	219 (52%)	95 (23%)
Intracerebral hemorrhage	239 (17%)	634 (45%)	532 (38%)
Subarachnoid hemorrhage	110 (17%)	224 (35%)	302 (48%)
Anoxic Encephalopathy	148 (28%)	267 (50%)	115 (22%)
Brain tumors / Miacelaneous	50 (23%) / 188 (31%)	89 (41%) /310 (51%)	79 (36%)/108 (18%)

Table 1- Outcome according each category
Conclusions: Patients in Glasgow 7 and below have a poor prognosis. Our findings are in agreement with other series. What differs is the high percentage of cardiac arrest compared to brain death. Regarding this as a quality indicator, cardiac arrest is an indicator of poor quality of maintenance either of ventilatory or hemodynamic support because one must assume that most of patients should die from BD. Our efforts as Public Institution are directed toward medical education and research to avoid preventable cardiac arrests and improve the organ transplantation procedures.

0585 EVALUATION OF ADEQUACY IN EMPIRICAL ANTIBIOTIC THERAPY IN A GENERAL ICU

G Friedman, T Lisboa, R Moraes, E Parolo, L Mallmann
Hospital de Clínicas de Porto Alegre

Introduction: Infectious pathologies are among the most prevalent in ICU and significantly influence the outcome of critically ill patients. However, the emergency of resistant pathogens to different antibiotics makes more complex the choice of the initial treatment. In addition, inadequate empirical antibiotic therapy is associated with a poorer outcome.
Objective: To evaluate the adequacy of antibiotic therapy in a general ICU and to collect data about the microbial flora in order to better adapt the empirical treatments.
Material and Methods: Data were prospectively collected in a 12 bed general ICU. The presence of infection was defined by the doctor in charge of the patient. Inadequate antibiotic therapy was defined as microbiological evidence of infection not covered by the chosen antibiotics, or by the finding of primary resistance to the antibiotics in use.
Results: Data were collected in 80 consecutive patients. The main site infection was the lung (50%). The most prevalent microorganisms were the Gram-negative(52%). The prevalence of nosocomial infections was 60%. Empirical antibiotic therapy was inadequate in 28 episodes (35%), and most prevalent microorganisms in this group were MRSA, Pseudomonas MR, Stenotrophomonas maltophilia. The general mortality rate was 40%, but the mortality rate among patients with inadequate antibiotic therapy was 50%, but only 33% when adequate (OR=3,09, IC95% 1,06-9,16). Risk factor to an inadequate therapy was nosocomial infection (RR 2,07, IC 95% 1,01 - 4,26). Other risks factors that showed a non-significant trend were delay to start antibiotics greater than 24h, imunossupression, septic shock and higher APACHE II. The number of empirical treatment schemes was 17.
Conclusion: These preliminary data showed that there is an excess in mortality rate when empirical therapy is inadequate. The inadequacy of treatment was associated with nosocomial infections. There was an exagerated variability on the choice of empirical strategy.

0586 HEMOPHAGOCYTIC SYNDROME

G Rios[1], R Díaz[1], T Montecinos[2], A Diettes[1], A Reyes[1], R Lillo[1]
1 Pediatric Intensive Care Unit Hospital Gustavo Fricke, Viña del mar, Chile; 2 Pediatric Intensive Care Unit Hospital Carlos Van Buren , Valparaiso, Chile

Background: The hemophagocytic syndrome (HFS) is a rare and potentially lifethreatening disease. It is due to the dysregulation of the immune system, characterized by an excessive activation and proliferation of the T linfocytes and macrophages that infiltrate different organs and an overproduction of cytokines. There are two types known: familial HFS and secondary HFS. It can be a severe illness and evolve rapidly to multiple organic failure (MOF). An early diagnosis is basic for a correct management
Objectives: To present the local experience in the management of patients that evolved to MOF and in whom the diagnosis of HFS was suspected
Materials and methods: Retrospective study. We reviewed 6 cases of HFS in the pediatric ICU, in the period between 2001 and 2004. We analyzed: clinical presentation, lab tests, treatments and evolution
Results: 6 patients (3 females and 3 males) with ages between 2.5 months and 7 years (media 30.5 months). The 6 patients had all of the diagnostic criteria for HFS. The associated diagnosis were: Juvenil Rheumatoid Arthritis (2), Down´s syndrome (1) and leukosis. In all of the cases the form of presentation was similar: prolonged fever, palour, hepatosplenomegaly, suspition of sepsis, severe coagulopathy , lowering of consciousness, and seizures. During the evolution the 6 patients presented MOF, hemodynamic changes and ARDS (mechanical ventilation, media 10.8 days). 5 patients developed acute renal failure, one of which required replacement therapy. It was noted the presence of a cutaneous eruptions, persistent fever and prolonged diarrhea (4). In all of the cases it was noted severe liver dysfunction, hypertriglyceridemia, hypofibrinogen, severe pancytopenia and high levels of lactate dehydrogenase (v máx 12000 U/l). Ferritin was measured in 2 patients with results that ranged from 21240 to 102980 ng/ml. A mielogram was realyzed as soon as the HFS was suspected (48 hrs to 8 days with median 72 hrs) finding hypercelularity and hemophagocytic histiocytosis. All of the patients received antibiotic treatment without identifying a germ. Three patients developed nosocomial infection with fatal outcome. One had doubtful serology for EBV. Transfusional therapy was required for a prolonged period (media 9.5 days). Once HFS was diagnosed, treatment with IVIG (5), methylprednisolone (5) cyclosporin (2) and VP 16 (1) was initiated. Four patients (66%) died due to untreatable shock and MOF: two with asociated ARJ; one with Down´s syndrome and one with suspition of familial HFS due to the age of presentation. The average stay in the PICU , was 15.5 days and the patients that survived took 2 to 3 weeks to fully recover.
Conclusions: The HFS is a severe disease, in most cases fatal and probably underdiagnosed. It must be suspected in patients that evolve with MOF with pancytopenia or bicytopenia, specially those with comorbility. The diagnostic criteria for HFS must be applied and realyse a prompt bone marrow aspiration to confirm the diagnosis and offer the adecuate treatment according to international standards.

0587 SHORT TERM ICU OUTCOME PREDICTION IN LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE

P Klin, S Yantorno, V Descalzi, H Solar Muñiz, S Perez Lloret, L Podesta, F Villamil, F Klein
Favaloro Foundation. Buenos Aires. Argentina

BACKGROUND: Little information is available regarding outcome prediction in patients (p.) admitted to the ICU for acute liver failure / Fulminant Hepatic Failure (ALF/FHF).
OBJECTIVES:To compare the post-transplantation outcome predictive power of general ICU scores (APACHE II and SAPS II), a multiorgan failure assessment score (admission SOFA), an intervention score (TISS 28) and the MELD score in p. admitted to the ICU after an orthotopic liver transplantation (LT) for ALF/FHF.
METHODS: A retrospective cohort study is presented. Between March 25th ,1996 and December 30th, 2004, fifty-five consecutive adult p were admitted to the ICU with a diagnosis of ALF/FHF.
Forty two (76%) p. underwent a LT. The APACHE II, SAPS II, admission SOFA, TISS 28 and MELD scores were calculated. Results are presented as median and 25-75 percentiles. Statistical significance was analized through the Chi-Sq and Mann-Whitney tests.
RESULTS: Median age was 34 years (25-75 percentiles, 23.7-44 years) with a male/female ratio of 0.42. The clinical presentation was subacute in 24% (10 p), acute in 46% (19 p) and hyperacute in 29% (12 p).
Fourteen p. (33%) died (Group I) while 28 p (66%) survived (Group II).
Donor features, ICU length of stay (LOS), APACHE II, SAPS II, SOFA, TISS 28 and MELD scores for each group are displayed in the table.

	Group I (n=14)	Group II (n=28)	p
Donor type (cadaveric)	10 (71.4%)	25 (89.3%)	Chi-Sq p=0.1
ICU LOS	11 (4.5-18.5)	9 (7-15)	Mann-Whitney p=0.8
MELD	34 (31-45)	28.5 (25.7-39.5)	Mann-Whitney p=0.09
APACHE II	19 (17.5-22.5)	9.5 (5-16)	Mann-Whitney p<0.001
SAPS II	38 (34-50.5)	37.5 (24.7-43.2)	Mann-Whitney p=0.05
SOFA	10 (6-10.5)	10 (7-12)	Mann-Whitney p=0.8
TISS 28	14 (8.5-20)	18.5 (9-25.2)	Mann-Whitney p=0.5

CONCLUSIONS: No statistical significant differences were found between the surviving and non surviving p., regarding the MELD score, donor type (cadaveric vs. living related), ICU LOS, SOFA and TISS 28 scores.
In our study population of ALF/FHF p. who received a LT, the APACHE II and SAPS II scores showed to have short term outcome prediction value

0588 APPROACH OF RESPIRATORY DISEASES EVOLUTION IN THE PEDIATRIC INTENSIVE CARE UNIT UNDER RESPIRATORY PHYSIOTHERAPY INTERVENTION – 24 HOURS IN A GENERAL HOSPITAL IN SÃO PAULO

RC Santa Barbara, PM Santiago, EA Bixofis, CH Brito
Hospital Geral de Pedreira-ACSC

Background: Children with lung diseases are supposed to be hospitalized and most of the cases demand treatment in the Intensive Care Unit for better evolution of their state. Respiratory physiotherapy has been playing an important role in such units, developing techniques with a positive impact on the patients evolution.
The present study focused on respiratory insufficiency, bronchus spasms and acute asthma. It was based on a retrospective investigation of 72 patients admitted in the 5-bed-pediatric ICU of the general hospital, from January 2002 to January 2005, with respiratory physiotherapy intervention 24 hours.
Objective: The study aimed at analyzing the evolution of the children admitted in the general hospital pediatric ICU with the lung implications above treated by a 24-hours physiotherapy service.
Methods: The archives of 72 patients admitted from January 2002 to January 2005 were searched for information like date of admission, race, age, stay in the ICU, death rank and the respiratory therapy interventions the patient was afforded with. Such interventions consist of secretion mobilization, movements to increase the thoracic expansion, movements to clear the bronchus and body positioning.
Results: The following data has been raised based on the study: 81,3% of the children were white, 12,1% of them were black and 6,6% were indians; the average stay in the pediatric ICU was 11,34 days; the average age was 9,68 months; 57% of female patients and 43% of male patients. All of them underwent clinical treatment with antibiotic therapy and respiratory physiotherapy.
Each patient received an average of 4,3 physiotherapeutic interventions over a 24-hour stay in the pediatric ICU .The death rate in the given period was 11,09%.
Conclusion: The results above lead to the conclusion that the evolution of such children's treatment is homogeneous, and the physiotherapeutic interventions as part of the treatment can be pointed as one of the significant factors for a positive evolution of the patient's state and a reduction of his stay in the ICU.

0589 BLOOD LOSS CAUSED BY LABORATORY TESTS PERFORMED IN INTENSIVE CARE PATIENTS

JP Marafon, ML Kaufmann, TGH Osnten, DP Marafon, CA Cochlar
ULBRA, Porto Alegre, Rlo Grande do Sul, Brazil

Objectives: The sanguineous losses caused by laboratory tests and their relation with clinical repercussions and therapeutical demands were evaluated in adult patients admitted in Intensive Care Units (ICU). By these means, the volume of blood collected was correlated with the transfusion needs, with the time of permanence in the hospital and with the mortality in the ICU.
Methods: From January to June of 2004, through a restrospective study, it was collected data of 212 patients from the Intensive Care Unit of Lutheran Hospital.
Results: It was found an average of 23,8ml/day of blood collected for each patient and an average volume of 119,4ml during the admission time.The patients had been divided in three categories in accordance with the admission reason: clinical care (19,4ml/day and 117,6ml/admission), postoperative but non-cardiac (20,4ml/day and 86,6ml/admisssion) and postoperative but cardiac (46,5ml/day and 187,4ml/admission). By the time of the admission at the ICU, it was identified 134 patients with anemia (hemoglobin <12mg/dL), corresponding 65% of the cases, being the average level of hemoglobin of 10,9mg/dL. Of these patients, 40% needed transfusion and received, in average, three units of concentrated of red cells. There was no statistical correlation between the volume of blood collected with mortality. However, it was identified significant statistical association between blood transfusion and mortality in the ICU patients.
Conclusion: The majority of the critical care patients presents anemia, and 50% of the cases needed sanguineous transfusion during the admission at ICU. The collected volume of blood was not associated with mortality, but the patients who had received blood transfusions had had greater time of permanence in the ICU, as well as greater mortality.

0590 SOFA (SEQUENTIAL ORGAN FAILURE) AND FHF (FULMINANT HEPATIC FAILURE) A TOOL ON LIVER TRANSPLANTATION

G Cueto, D Rodriguez, E Braña, J Diaz, P Trigo, J Lendoire, A Arata, O Imventarza
Terapia Intensiva Trasplante HepáticoHospital Argerich Bs As Argentina

Background: Definitions of FHF include at least two-organ dysfunction and could be followed by spontaneous recovery of liver failure or in addition other organ failure and the need to Liver Transplant.
Objective: to evaluate whether SOFA score can be used to identify mortality in FHF with Liver Transplantation.
Design and setting: 53 adults patients(P)admitted in ICU(Public Hospital) with FHF and Liver Transplantation were analized prospectively.
Measurements and results: 2 groups were considered: 1) FHF transplanted and survived 2) FHF transplanted and non-survived. Independent variables in each one: a) days waiting in list b) APACHE 2 in the first day c) SOFA score in the first day d) SOFA score before transplant e) SOFA and APACHE 2 after transplant. We compared score and degree of organ failure, in each one organ, in each measurement of SOFA score. Organ Failure was defined as value more than 3 points in each one organ.
Statistics Methods: continuous variables were compared through T test or Mann-Whitney Wilcoxon, categorics variables through Exact Fisher test.
Results: 53 P, 41 survived(77,4%) 12 non-survived(22,6%), age=34,8, male 16(30%, female 37(70%).
When analized each one organ failure individually, respiratory failure before liver transplantation showed a significantly difference between both groups, 50% of patients died had respiratory failure. 50 P were readmitted after liver transplantation, 3 died during surgery. After transplant Apache 2 and SOFA score had statistically significant differences between survival and non survival P. Central Nervous System and cardiovascular failure were associated with significantly mortality.
Conclusions 1) Before Transplant SOFA score predicted mortality and Respiratory Failure was the most important organ failure associated with increased risk of death with Transplant.
2) After Liver transplantation Apache 2 and SOFA score were predictors of mortality. Central Nervous System and Cardiovascular failure had most relevant load than others in ICU mortality.

	total	%	Survived	No Surv	%	p	OR
Waiting list	3(2-6,5) d		3 d	4 d		NS	
Apache2	11,6 ± 4,5		11,2 ± 4,5	13,1 ± 4,1		NS	
SOFA	8 ± 2,2		7,8 ± 2,4	8,7 ± 1,6		NS	
SOFA before Tx	10,6 ± 3,5		9,7 ±2,7	13,7 ±3,8		<0,0001	
Nº Dysfunction	2,3 ± 1,1		2 ± 0,9	3,17± 1,4		0,017	
Respiratory failure before Tx	8 P	15	2 P	6 P	50	0,001	19,5(3,2-120)
Apache 2 after	19,3 ± 8,5		17,1± 7	29,7 ± 6,9		<0,0001	
SOFA after	10,8 ± 4,4		9,8 ± 3,7	15,4 ± 4,5		<0,0001	
Neuro failure af	17	34	11	6	67	0,047	5,45(1,16-25.7)
CV failure after	17	34	10	7	78	0,004	10,9(1,9-60,9)
Nº Dysfunction	2,2 ± 1,4		2,0 ± 1,2	3,4 ± 1,4		0,002	

0592 PREMATURE NEWBORN PARENTS CONCERNS ABOUT THE DISCHARGE FROM NEONATAL INTENSIVE CARE UNIT

FS Balbino, VL Barbosa, M Naganuma
UNIFESP - Sao Paulo - Brazil

BACKGROUND: Discharge is a moment of too much expectation for parents after long time of treatment in a neonatal intensive care unit.They are now responsible for a small, fragil and almost unknowed baby expressing different category of concerns about that.
OBJECTIVE: The aims of the study were to identify and describe the main concerns expressed by parents when the discharge from neonatal intensive care unit comes closer
METHODS: A qualitative, descritive –exploratory research was implemented in a neonatal intensive care unit at the city of Sao Paulo – Brazil. The data was colected by a semi-structured interview of the parents and by neonates' medical records
RESULTS: The data analysis allowed the rising of these categories: Concerns about discharge proximity, because, as this moment approaches, parent shows concern about the risk of infection at the hospital or at home; development and growing compromises; the premature baby´s future and the new responsability and coping skills they will have to achieve; and Parents´ concern about taking care of the premature neonate, in wich they described the great responsability of child care at home, about breastfeeding and respiratory complications that could compromise the child health or leading to death
CONCLUSION: Facing these results, strategies were proposed to promote parents' participation in their child's care during hospitalization, enabling them to discharge from hospital, minimizing the concerns presented in this moment

0593 RESPIRATORY MECHANICS AND LUNG HISTOLOGY AFTER REFEEDING YOUNG UNDERNOURISHED RATS

CM Dias[1], CP Pássaro[1], VR Cagido[1], M Antunes[1], G Carvalho[1], R Soncini[2], WA Zin[1], PRM Rocco[1]
1 Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil; 2 Faculdade de Farmácia e Odontologia, Alfenas, Brazil

BACKGROUND: Previous studies have shown that undernutrition thwarts lung structure and function. Furthermore, undernutrition resulted in muscle mass reduction of both peripheral skeletal and respiratory muscles. Nutritional support has become a routine part of the care of the critically ill patients. Glutamine has a protective effect on cells of the immune system, although the relevance of glutamine supplementation in lung function was not previously elucitated.
OBJECTIVES: The aim of this study is to verify whether refeeding with oral glutamine supplementation could reverse the changes in breathing pattern and lung histology usually associated with prolonged undernutrition.
METHODS: Young Wistar rats (21 days) were randomly assigned into four groups. In control (C) group, rats received food ad libitum for eight weeks. In nutritionally deprived group (ND), the animals received one third of their usual daily food consumption for four weeks. In glutamine group (G) undernourished rats received a glutamine-supplemented diet (carbohydrate 43%; casein 20%; glutamine 20%; fat 7%; fiber 5%; micronutrients 5%); and standard group (S) received a balanced diet (carbohydrate 63%; casein 20%; fat 7%; fiber 5%; micronutrients 5%) during 4 weeks. Then, the rats were anesthetized and tracheotomized. In spontaneous breathing rats, tidal volume (VT), respiratory frequency, minute ventilation (V'E), inspiratoy (TI), expiratoy (TE) and total times (TT), mean inspiratory flow (VT/TI), and duty cycle (TI/TT) were computed. At the end of the experiment, the lungs were prepared for histology.
RESULTS: Diaphragm, lung and body weights, VT, V'E, VT/TI were lower in ND animals in comparison to C, G and S groups. After refeeding, diaphragm and lung weights and, VT, V'E and VT/TI returned to control values independently of the diet. Although the glutamine group showed a delay in gaining body weight, at the end of experiment, body weight was similar in C, G and S groups. ND group exhibited patchy atelectasis, areas of emphysema, interstitial edema, and increased cellularity. Glutamine reduced collapsed and hyperinflated areas, interstitial edema and tissue cellularity in a larger extent than standard diet, but the lung parenchyma did not recover to its normal histoarchitecture.
CONCLUSION: In the present study undernutrition in young animals led to ventilatory and morphological lung modifications. Glutamine-supplemented diet is better in reverting these morpho-functional changes than standard diet after four weeks of refeeding.
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0594 VALIDATION OF THE PEDIATRIC LOGISTIC ORGAN DYSFUNCTION (PELOD) SCORE IN BRAZIL

PC Garcia, A Sfoggia, JP Piva, F Bruno, PR Einloft, DJ Kipper, RG Branco, JC Santana, R Jungblut, ME Silva
Pediatric Intensive Care Unit, Department of Pediatrics, Hospital São Lucas and Medical School, Pontificia Universidade Catolica do Rio Grande do Sul (PUCRS), Porto Alegre, Brazil

Objectives: to evaluate the prognosis score PELOD (Pediatric Logistic Organ Dysfunction) performance at the UTIP (Pediatric intensive Care Unity).
Methods: observational, prospective, longitudinal study done from July 1st. 2003 to June 31, 2004, at UTIP, Hospital São Lucas. We included all patients who were admitted at UTIP. Exclusion criteria were length of stay in unit less than 4 hours, admission in a state of continuous cardiopulmonary resuscitation without achieving stable vital signs for at least 2 hours, prematures, age 20 years or older or admissions for elective procedures. PELOD score includes 6 organ dysfunctions and 12 variables. The worst values were recorded daily during the whole stay at PICU to calculate PELOD and dPELOD. PRISM and patient clinical data were recorded too. Statistical analysis for model evaluation was done through the Hosmer-Lemeshow goodness to fit qui-square test, and ROC curve (Receiver Operating Characteristic Curve).
Results. were admitted at UTIP 504 patients, 25 showed exclusion criteria. Were discharged from the unit 446 patients and 33 died. 145 (30%) patients had no organ dysfunction, 132 (28%) had one, 96 (20%) had two and 106 (22%) had three or more. The Hosmer-Lemeshow test obtained a qui-square of 18,64 (p=0,002) for PELOD and 15,47 (p=0,009) for PRISM. The area under ROC curve was 0,92 for PELOD and 0,71 for PRISM.
Conclusion.- The analysis of the PELOD and dPELOD scores shows a good discrimination capacity among survivors and non-survivors and a poor predictive capacity and calibration.

0595 LIVING THE MOMENT OF HOSPITAL DISCHARGE OF THE PREMATURE NEWBORN FROM NEONATAL INTENSIVE CARE UNIT: FEELINGS EXPRESSED BY PARENTS

MJ Avena, FS Balbino, VL Barbosa, M Naganuma
Federal University of Sao Paulo - UNIFESP - Sao Paulo - Brasil

BACKGROUND: In a neonatal intensive care, the discharge moment is full of emotion and when the parents receive the information they express in a verbal form and in most situations in a non verbal form, a brief moment of happiness and excitment as they are achieving something that could not be possible.
OBJECTIVES: To identify the feelings expressed by parents at the discharge moment of premature newborn.
METHODS: A qualitative, descritive –exploratory research was implemented in a neonatal intensive care unit at the city of Sao Paulo – Brazil. The data was colected by a semi-structured interview of the parents and by neonates' medical records
RESULTS: The category that emerged from the parents reports was classified as an emotional dimension, expressed by parents when the moment of discharge happens, distinguishing positive and negative feeling themselves. Thus the parents manifest fear, insecurity, anxiety, joy, uncertainty and doubt about the moment that they will be responsible for a baby with such peculiar caracteristics, as the premature neonate.
CONCLUSION: The premature neonate´s discharge may be as insecure as the delivery premature moment and the parents must be prepared as soon the surviving is clinically probable. Some new orientations were proposed in the neonatal intensive care unit to prevent parents emotional distress, promoting parents' participation during the child care, enabling them to face the discharge from hospital, as a normal process, minimizing concerns and promoting confident relationship with the nursing staff.

0596 THE VALUE OF AUTOPSY IN A PEDIATRIC INTENSIVE CARE UNIT

A Fernández[1], A Rodriguez[2], G Sosa[1], S Palenzuela[2], P Beltramo[2], C Gutierrez[2], M Alberti[1]
1 Unidad de Cuidados Intensivos de Niños. Centro Hospitalario Pereira Rossell; 2 Laboratorio de Patología Pediátrica. Centro Hospitalario Pereira Rossell

Objetive. To evaluate the advantages of autopsy examination in a Pediatric Intensive Care Unit.
Methods. We realized a peer review of the clinical history and the autopsy protocol of all consecutive hospital autopsies performed between October 1 1998 and December 31 2004 at the Pediatric Intensive Care Unit of the Pereira Rossell Hospital (UCIN). The results of the autopsy were classiffied according to Goldman criteria in mayor diagnosis that includes the main disease end the cause of death, and minor diagnosis meaning non related findings which were known through the autopsy. The diagnosis that were revealed by the autopsy but were not clinically suspected were considered as errors. They were subdivided in 4 groups according to the same author.
Results. In the 6 years and 3 months period studied a total of 5024 patients were admitted at the UCIN; 339 deaths occurred (6.7%) among them. An autopsy was performed in 131 cases (39%). In 111 cases it was a hospital autopsy performed by the pediatric pathologist; in 30 cases it was a forensic autopsy performed by the medical examiner. The age was 1 month to 15 years (media 27 months). Of the 208 deaths without autopsy, a consent was required but not obtained in 118 cases; no parental consent was asked in 90 cases.
In 33 of the 111 hospital autopsies performed the PRISM at admitance showed a risk of death of 25% or more. In 13 children (12%) a type I error was found (a diagnosis that was revealed by autopsy that might have eventually required treatment or contributed to the patient´s death). In 15 children (14%) a type II error was found (a mayor diagnosis revealed by autopsy , whose knowledge in life would not change the treatment or prognosis).
Conclusion. Techonologically advanced imaging studies and other premortem tests should not cause a decline in autopsy rates. Postmortem examinations frequently yeld unexpected diagnosis. A parental consent for necropsy examination should always be asked even when the cause of death is clear. Autopsy is an important medical and quality assurance procedure to evaluate accuracy or diagnosis in a Pediatric Intensive Care Unit.

0598 CARDIOPULMONARY RESUSCITATION IN CHILDREN WITH CONGENITAL HEART DISEASE AT THE PEDIATRIC CARDIAC INTENSIVE CARE UNIT

V Illikova[1], L Kovacikova[1], P Skrak[1], P Sykora[2]
1 Children´s Cardiocenter, Bratislava, Slovak Republic; 2 Children´s University Hospital, Bratislava, Slovak Republic

Background / Objectives: Survival following in-hospital cardiopulmonary resuscitation (CPR) is 15 – 65 % and neurologic outcome may vary from normal neurologic performance to severe impairment. The aim of this study was to assess cardiopulmonary resuscitation performed in the Intensive care unit in children with congenital heart diesease. Methods: Retrospective analysis of 36 patients who required CPR lasting 2 and more minutes; CPR included tracheal intubation, arteficial ventilation, chest compressions, and pharmacological treatment. Results: Etiology included hemodynamic causes (myocardial dysfunction, pericardial tamponade, pulmonary hypertensive crisis, massive hemorrhage) in 26 patients (72%), respiratory causes in 5 (14%) and other causes in 5 patients (14%). Initial cardiac rhythm was bradycardia with poor perfusion in 22 patients (61%), asystoly in 7 (19,5%), ventricular tachycardia / fibrillation in 5 (14%). Majority of resuscitated patients were after cardiac surgery (86,1%). Time of CPR ranged from 2 – 120min., med. 20 min. Medications used were: epinephrine in all patients, calcium gluconicum/chloratum in 24 (66,7%), bicarbonate in 30 (83,4%), antiarrhythmic drugs (amiodaron, lidocain, adenosine) in 4 patients (11,1%). Defibrillation was used in 5, inhaled nitric oxide in 2, and open chest compressions in 11 patients. Survival at 24 h., 7 days, 30 days and 1 year was 55,6%, 47,2%, 41,6 % and 41,6%, respectively. Lenghts of CPR was the only factor correlating with survival, other factors (age, gender, weight, type of congenital heart disease, hemodynamic/respiratory cause of resuscitation event, initial cardiac rhythm, relation to surgery – pre/post operatively, number of CPR episodes) did not affect mortality. Conclusion: Results of CPR at our department are similar to those of in-hospital CPR in other centers. Good neurologic outcome is probably due to invasive monitoring of vital functions allowing early detection of resuscitation event and assessment of efficacy of resuscitative interventions.

0599 THE IMPACT OF AN INFECTION CONTROL PROGRAM WITH ALCOHOL-BASED HAND DISINFECTION AND ISOLATIONS PRECAUTIONS IN AN INTENSIVE CARE UNIT

MB Gazzana, RP Santos, LV Santos, GT Fonseca, L Backes, M Tiberio, A Nunes, C De Leoni, FC Vieira
Charity Hospital of Viamão, Viamão, RS, Brazil

Background: Alcohol-based hand disinfection is recomended from recent Centers for Disease Control and Prevention (USA) guidelines as a major cornerstone for infection control programs. Hand contamination has often been cited as the culprit in hospital-associated infections.
Objective: Describe the impact of an infection control program with alcohol-based hand disinfection and isolations precautions in an intensive care unit.
Methods: We conducted a prospective surveillance of infection control indexes to evaluate the a new program of infection control in a small (120 beds) hospital in south of Brazil. The program consisted in the use of Alcohol-based hand hygiene and system of cohorting and isolations practices of patients identified as carriers of multiresistants microorganisms. The evaluation consisted in a comparision of infection rates at the begining and after the program was iniciated, in the intensive care unit of the hospital, a seven-bed ward. We evaluated the number of infections in that ward, and infections related to hospital procedures (mechanical ventilation, central venous catheter implantation and vesical catheters).
Results: As the process was initiated the infection rates at the unit was 105,8 infections/1000 patients-day; 78,1 infections/1000 ventilation-days; 23,8 infections/1000 vesical catheters-day; and no central venous catheter infection was detected. Six months after the mean rates of these parameters were: 50,7 infections/1000 patients-day (52.1% reduction, p< 0,05); 21,2 infections/1000 ventilation-days (72,8% reduction, p< 0,05); 9,3 infections/1000 vesical catheters-day (60,9% reduction, p< 0,05); and 6 infections/1000 central venous catheters-day. In the next six months the mean rates were as follows: 32,6 infections/1000 patients-day (69,2% reduction, p< 0,05); 19,8 infections/1000 ventilation-days (74,6% reduction, p< 0,05); 9,3 infections/1000 vesical catheters-day (71,8% reduction, p< 0,05); and 7 infections/1000 central venous catheters-day.
Conclusion: After institution of the infection control program with alcohol-based hand disinfection and isolations precautions, the infection rates related to the Intensive Care Unit were statistically significant reduced in a period of one year, except for central venous catheter infections.

0601 MODS SCORES ARE BETTER PREDICTORS OF TRAUMA'S MORTALITY THAN APACHE II AND TRISS-ISS-RTS

REJ Montoya, B Fontes, R Pogetti, PE Rocha, AM Dias, D Birolini
Hospital das Clínicas, Medicine School of University of São Paulo

Background: Mortality prediction of Intensive critical care trauma patients is not precise using conventional trauma scores. Our purpose: to compare trauma score indexes, admition index, and Multiple Organ Dysfunction score (MODS) in Intensive Critical Unit (ICU).
Objective: Compare Multiple Organ Dysfunction Scores, admition index score in Intensive Care Unit and Trauma scores for mortality prediction in Intensive critical unit trauma's patients .
Methods. During 1998, 19 blunt and 11 penetrating trauma patients, staying in the ICU more than 7 days were evaluated in the Trauma Intensive Critical Unit. Trauma scores were calculated in the Emergency Room and Intensive care index on the first 24 hrs in the IC U. The worst MODS, the total maximum MODS , and Δ MODS were calculated in the ICU. Data (mean±SD). Statistics: Mann-Whitney test, Pearson's correlation coefficient, and logistic regression analysis. Comparisons: survivors (S) and non-survivors (NS) groups.
Results. Eight patients died (27%). In the S group: RTS was 6.61±1.14; ISS 25.77±13.76; TRISS 0.79±0.23; APACHE II 18.82±8.26; worst SOFA 4±1.63; total maximum SOFA 5.31±2.50; ΔSOFA 0.63±1.00; worst MOD 6.45±3.04; total maximum MOD 6.00±3.62; ΔMOD 0.54±0.96. In the NS group: RTS 6.52±1.42; ISS 17.0±10.39; TRISS 0.89±0.16, APACHE II 23.75±8.83; worst SOFA 10.50±4.42; total maximum SOFA 9.00±4.92; ΔSOFA 3.75±2.65; worst MOD 10.88±4.82; total maximum MOD 11.37±5.60; ΔMOD 3.00±3.46. The S and NS groups were statistically different regarding SOFA and MOD, but were similar regarding RTS, ISS, TRISS and APACHE II. Pearson's correlation coefficient showed that SOFA and MOD were highly correlated (r=0.847; p<0.001). Logistic regression analysis using stepwise method for variable selection showed that SOFA had a better performance than MOD as death predictor (p<0.041). Conclusion. Mortality of trauma patients staying in ICU for prolonged periods can be more accurately predicted using MODS scores than using conventional trauma and ICU scores.
Key words: Illness severity scoring. Traumatic injury. Multiple organ failure. Intensive care. Outcome prediction.

0604 TEMPORARY PROFILE OF OXIDATION / ANTIOXIDATION IN SEPTIC SHOCK PATIENTS

T Regueira, M Andresen, D Perez, P Strobel, G Marshall, A Dougnac, F Leighton
Catholic University of Chile, Santiago, Chile

Background Sepsis is a powerful stimulus for Reactive Oxygen Species (ROS) synthesis. Ischemic and reperfusion injury, activation of neutrophils and intracellular ROS production are some of the mechanisms implicated. Septic Shock has been associated with higher levels of ROS, with damage on cellular structures and with falls in antioxidant levels. There are no studies specifically focused on oxidative stress kinetics in septic shock, neither in the evaluation of methionine sulfoxide as a marker of oxidative protein damage.
Objectives Assess the temporality of oxidative stress reactions during the first week of septic shock and re-evaluation of these parameters three months later. To correlate results with validated severity scores in sepsis.
Methods Prospective observational study conducted in a university medical ICU. 21 recently diagnoses (<24 hours) septic shock patients were compared with healthy controls. Lipoperoxidation was measured using TBARS (thiobarbituric acid-reactive substances) and protein oxidative damage was estimated by carbonyls and methionine sulfoxide. Antioxidant activity was measured using total antioxidant capacity by TRAP (Total peroxyl radical trapping method), vitamin C and E, beta carotene, lycopene, reduced glutathione, uric acid and bilirrubin. Samples were taken at admission, 24, 72 hours and at the seventh day of evolution. A differed control in survivors was made 3 - 4 months after the episode. Patients were managed according to a hemodynamic and respiratory algorithm. Antioxidant therapy was not allowed.
Results At admission, TBARS, carbonyls and methionine sulfoxide levels were significantly increased. Whereas TBARS levels increase in time, protein oxidative damage remained stable. TRAP levels at admission were similar to controls and then fell significantly. Vitamin C, γcarotene and lycopene levels were significantly diminished and then fell until the seventh day. Vitamin E levels were similar to controls and remained stable in time. Uric acid and bilirrubin levels were significantly elevated and reduced glutathione levels progressively fell in time. At differed control all values returned to normal levels, except protein oxidative damage that persist elevated. Significant positive correlations exist between SOFA score and lipoperoxidation (p<0.008) and with APACHE II and SOFA scores with TRAP (p<0.05) and uric acid levels (p<0.009).
Conclusions Precocious and persistent oxidative stress exists during septic shock, with damage on lipids and proteins and with antioxidant consumption, that is not reflected in vitamin E levels, probably because an adequate recycling from ascorbic acid, nor by the total antioxidant capacity at admission, probably because of the elevated uric acid levels secondary to xanthine oxidase activation. More severe sepsis is related with higher oxidative stress levels, which is better reflected by lipid peroxidation. This is the first study that validated methionine sulfoxide as a marker of protein oxidative damage

0605 DEATH, AND ITS GIFT TO LIFE. A PHENOMENOLOGICAL STUDY OF THE EXPERIENCES OF ORGAN DONORS' RELATIVES DURING THE ORGAN DONATION PROCESS

A Ørøy
Molde Univeristy College, Molde, Norway

Background:This study deals with brain dead and organ-donation, and the relatives' experiences with the organ-donation process.
The purpose of this study was to investigate what the relatives of the pronounced brain-dead patients' experiences during the anticipation, confrontation and post confrontation stages of the organ-donation process.
Method: The method used is qualitative and phenomenological. The data were obtained by in-depth interviews with eight relatives, from seven different situations. All of them had lost a loved one suddenly. Four of them consented to donation and three of them did not consent to donation. The relatives were interviewed in a period of about 8 month and 2 years after the death occured, and the interview took place in the family's home.
Data were analyzed by Giorgi's phenomenologically inspired four-step method. The purpose of the study was to discover the most important characteristics of the relatives experiences during the organ-donation process.
Result: Findings showed the following process:
• The beginning of the end, • The end, • The question, • Farewell, • The time afterwards, • Life goes on, • Death, -and it's gift to life
Conclusions: Findings showed that the question about using organs' from the brain-dead patient presented an additional problem for the relatives in an already vulnerable situation. The question of organ-donation can not be seen as an isolated phenomenon, but as an integrated part of the organ-donation process. My study further showed that the ability of the personnel to create calmness in a chaotic situation and the attitude of the personnel was of the greatest importance to the relatives.
The theoretical framework for the study is phenomenological philosophy and etich in relations.
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0606 TIME COURSE OF RESPIRATORY MECHANICS AND LUNG HISTOLOGY IN ACUTE LUNG INJURY INDUCED BY CECAL LIGATION AND PUNCTURE

MBG Oliveira[1], SC Abreu[1], CFN Cerqueira[1], RN Gomes[2], DO Nascimento[2], PT Bozza[2], WA Zin[1], PRM Rocco[1]
1 Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; 2 Oswaldo Cruz Foundation, Rio de Janeiro, Brazil

Background: Sepsis remains a major cause of morbidity and mortality and is the most frequent cause of acute lung injury (ALI). Sepsis-induced ALI often is associated with the multiple organ dysfunction syndromes and a high risk of death in critically ill patients. However, the pathophysiology of sepsis-induced ALI needs to be elucidated. In this context, it is fundamental to develop an animal model that precisely mimics human pathophysiology.
Objectives: The aim of this study is to characterize the model of acute lung injury induced by cecal ligation and puncture (CLP). For this purpose, we evaluated the time course of respiratory mechanics, lung histology (light microscopy) and total and differential cells in bronchoalveolar lavage and peritoneal fluid in this model of ALI.
Methods: Male Wistar rats were randomly assigned into two main groups. In CLP group, under sevoflurane anesthesia, ALI was induced through cecal ligation and perforation. Briefly, the bowel was exposed through a midline laparotomy and the cecum was isolated and exteriorized. The cecum was ligated with 5-0 silk distal to the ileocecal junction to preserve bowel continuity. The cecum was punctured twice with a sterile 18-gauge needle, and cecal contents were gently expressed. The cecum was replaced in the peritoneal cavity and the abdomen was closed with a 5–0 silk suture. Rats were allowed to recover in their cages with free access to food and water. In control group (C), abdominal incision was done, but no cecal ligation and perforation were performed. Twenty-four and 48 hours after the induction of lung injury, lung (l) and chest wall (w) resistive (ΔP1) and viscoelastic (ΔP2) pressures, and static elastance (Est) were computed by end-inflation occlusion method. Then, lungs were removed and prepared for histology. Total and differential cells were computed in the fluid of bronchoalveolar lavage and peritoneum.
Results: Twenty-four hours after the induction of lung injury, lung mechanical parameters were similar to the control group, and although the number of cells in the BALF was normal, there was an increase in neutrophils in lung tissue and peritoneal fluid. At 48 h, lung static elastance (53%), resistive (75%) and viscoelastic (35%) pressures were higher in CLP in comparison to the control group. Lung histology showed interstitial edema, alveolar collapse, and neutrophils were increased in the BALF.
Conclusion: The present study described a model of acute lung injury induced by cecal ligation and puncture (CLP). Although lung histology showed a slight modification early in the course of lung injury (24 h), acute lung injury was observed only at 48 h.
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0607 INTRABDOMINAL PRESSURE AND ITS INFLUENCE ON MORBIMORTALITY OF ABDOMINAL COMPARTMENT SYNDROME

M Ochoa Parra, H Clavijo, R Duque, R León, P Noboa, I Orellana, F Ortega, R Pineda
Hospital José Carrasco Arteaga

BACKGROUND
Intra-abdominal hypertension (IAH) and abdominal compartment syndrome (ACS) are well-know growing sicknesses in the intensive care units. Its diagnostic requires a high clinic suspicion about intra-abdominal hypertension findings and organic dysfunction.
OBJECTIVE
To relate between IAH degrees and many physiological variables to determine its association with the ACS apparition and mortality.
MATERIALS AND METHOD
Patients with emergency and trauma surgery admitted at Intensive Care Unit, Hospital "Jose Carrasco Arteaga" - IESS – Cuenca – Ecuador, were included in the period from June to December, 2004. We expected they present conditions associated with IAH and/or ACS.
IAH degrees were classified according to Burch and his co-workers. Information was processed with the help of a statistic package SPSS 12.0 version.
RESULTS
Twenty patients associated with 13 diagnostics were registered. Age average was 64.5 ± 21.1 years (25 – 93); 55% (n=11) were men and 45% (n=9) were women; 50% (n=10) entered after a surgery and 50% (n=10) without surgery. There was not a difference in the basal characteristics between the intervened group and the not intervened group. The 20% of the patients (n=4) had IAH with I degree, 50% (n=10) with II degree, and 30% (n=6) with III degree. 15% (n=3) of the 20 registered patients had ACS with a 33.33% in each degree.
General mortality with IAH was of 80% (n=16); 5% (n=1) with I degree; 45% (n=9) with II degree, and 30% (n=6) with III degree.
Variables associated with mortality and those which were registered at the moment of admission at Intensive Care Unit, between dead and alive people, were: Intra-abdominal pressure (IAP) in cm3 of water 21.1 ± 8.3 vs. 12.25 ± 3.8 (p=0.010). The age was 70.8 ± 16.7 years vs. 39.2 ± 18.8 years (p=0.044); weight in kg. was 63.4 ± 8.2 vs. 66.5 ± 5.7; Pa02 in mmHg was 67.9 ± 18.07 vs. 91 ± 13.7 (p=0.042); activated partial thromboplastin time was 26.3 ± 5.8 vs. 39.0 ± 7.07 (p=0.014).
CONCLUSIONS
IAP level to admission and its evolution during first days seem to influence over mortality, though Intra-abdominal hypertension degree does not do it.
Variables such as: age, height, weight, Pa02, partial thromboplastin time of seem to influence negatively in the morbid process too, although its definitive value is still uncertain.

0608 CARE TECHNIQUES DEVELOPED BY HEALTH PROFESSIONALS AT AN INTENSIVE THERAPY UNIT

LM Andrade[1], JA Caetano[2], EM Rocha[3], RM Pontes[4]
1 IJF/ UNIFOR; 2 UNIFOR; 3 IJF; 4 SANTA CASA SOBRAL

An Intensive Therapy Unit is considered nowadays a place where qualified and specialized assistance is delivered. This sector is composed of a range of functionally grouped elements destined to the assistance of risk patients who demand continuous nursing and medical care, apart from specialized equipment and human resources. This paper aims at understanding the humanized assistance to patients interned in an ITU from health professionals' point of view. This is qualitative character research carried out in the ITU sector of the Irmandade da Santa Casa de Misericórdia de Sobral hospital. The subjects of the study were health professionals who worked full-time at the sector in June 2004, of which eight were doctors, six were nurses, twelve were nursing technicians, three were nursing assistants, three were physiotherapist, making a total of 32 health professionals. Data were collected based on a key question: What is the meaning of humanization concerning medical assistance for you? The data collected were confirmed through systematic observation and the answers of the subjects, then constituting three theme categories: physical and emotional comfort and professional commitment. About the emotional comfort subject, speeches revealed that prescription and administration of medicines is indispensable to the treatment, but it is also necessary to take care of the patient with special attention, dedication, and respect him as a human being taking into account his beliefs, values, wishes, expectations concerning the treatment and evolution of his state of health. Those who were interviewed considered that the health team should seek for alternatives to improve the assistance, taking into consideration not only technical matters but also personal values as well as learning about the understanding of the real meaning of human care. About the physical comfort subject, the necessary steps quoted were: never leave the patient alone; always check the installation of the ventilating prosthesis; assess and control pain in the patient; pay attention to the position and functioning of cateter; aspire secretions whenever necessary; care about the frequent mobilization of the patient; check and register the characteristics of secretions; perform body hygiene. We noticed that the major focus of concern of health professionals who work at an ITU is caring with physical comfort. About the professional commitment subject it was outstanding the fact that professionals seek for the excellence of assistance and for this it is necessary to value people at work. Heath professionals who work at an ITU should consider in their everyday activities new perspectives about what to do for their profession implies a commitment to the patient to be present whenever possible assisting his questions and disturbances, which corresponds to continuous dedication to the never ending act of doing concerning the desire to overcome death by making use of solidarity and ethics.

0609 FAT EMBOLISM AFTER LIPOSUCTION IN A YOUNG WOMAN

E Fernandez Rangel, VM Sanchez Nava, JJ Gutierrez Marfileño, FJM Perez Rada, E Rivas Valenzuela
Instituto Tecnológico y de Estudios Superiores de Monterrey

Background. Fat embolism is a frequent complication of trauma surgery as well as hip or long bone fractures. It is, however, an infrequent complication of cosmetic plastic surgery. The fat embolism syndrome is a serious event which might affect the central nervous, pulmonary and cardiovascular systems.
Respiratory distress is caused by the occlusion of the pulmonary capillary vessels by the fat emboli. The severity of this occlusion is related to the magnitude of the embolism.
Methods. We report a case of fat embolism after a cosmetic liposuction procedure.
Results. A 19-year old female patient with no previous medical history underwent an elective liposuction in an ambulatory clinic. The patient underwent a general balanced anesthesia with propofol, fentanyl, atracurium and sevoflurane, with a surgical time of 4 hours with no complications. As the patient awoke from the anesthesia she was extubated but suddenly developed tachycardia (125/minute), tachypnea (35/minute), hypotension (90/50) and desaturation (90% with FiO_2 0.40). A chest X ray showed a bilateral alveolar infiltrate. The patient was admitted to our intensive care unit and was initially managed with oxygen, fluid bolus, methylprednisolone and antibiotics. The hemodynamic status improved, but her arterial blood gases (ABG) showed difussion abnormalities: pH 7.32, PaO_2: 82, $PaCO_2$: 34 SaO2: 96%. The patient slowly improved. A second ABG analysis taken a couple of hours after admission showed pH: 7.39, PaO_2: 236, $PaCO_2$: 34 SaO2: 100%. The urinary cytology showed fat vacuoles. Her blood count showed mild anemia with progressive thrombocytopenia. On the first day she developed low grade fever (37.5°C) which persisted for the following three days, but no infection could be proven. Her EKG on admission only showed non-specific changes. 24 hours after admission the patient developed petechiae in both arms and neck. The infiltrates seen in her chest X ray cleared, and her clinical condition improved over the following hours. 72 hours after her admission to the ICU she was discharged to a medical ward.
Discussion: Fat embolisms occur as an infrequent complication of liposuction. Their precise incidence and mortality are unknown. The diagnosis is clinical, and there is a triad consisting of dyspnea, petechiae and central nervous system alterations.
The injury caused by the fat embolism is explained by two theories, the first of which state that the main injury is mechanically caused, and the second one that it is chemically induced.
This case report could be classified according to the Sevitt´s criteria as a non-fulminant fat embolism syndrome. The management of these patients should be symptom-based. The usefulness of steroids in fat embolism is still under debate.
Conclusions: Fat embolism is still an unusual condition, and therefore it is not always diagnosed. The clinical triad of sudden dyspnea, petechiae and nervous system alterations suggest this diagnosis.

0611 NEWBORN THERMAL REGULATION: A NURSERY PROTOCOL

MF Diz[1], CL Camargo[2], MTA Calasans[2], TF Batista[1], NS Oliveira[1], TSM Barsosa[2], MS Araujo[1], T Oliveira[1], A Ribeiro[1], G Rego[1], NCC Melo[2], CML Valente[2]
1 Faculdade de Tecnologia e Ciências- Salvador-Bahia-Brasil; 2 Escola de Enfermagem da Universidade Federal da Bahia-Salvador-Bahia-Brasil

Background: Although newborns are homoeothermic, they have restricted thermal stabilization because of their large body surface area when compared to their mass, limited subcutaneous lipid deposition to provide isolation, motorvascular instability and decreased metabolic capacity. The heat loss, which begins at delivery through the mechanisms of evaporation, conduction, radiation and convection, may continue during the newborn internment if a neutral environment is not provided, contributing to hypothermia and consequently to a weight gain retard, metabolic alterations, and as severe cases as nervous system depression with damage, most of the time, irreversible.
Objectives: To elaborate a nursery care protocol to maintain a suitable thermal-regulation for the high risk of newborn babies.
Methods: A bibliographic study has been initiated about the topic and lately neonatal care nurses with intensive care experience have discussed in order to obtain theoretic and practical subsidies to elaborate the proposed protocol.
Results: A nursery care protocol to the newborn at risk to thermal instability has been elaborated considering gestational age, newborn weight, type of bed, seriousness, multiple procedure needs, clothing and temperature control frequency. The implementation process counted on workshops to guarantee the nursery staff to know the utilized thermal regulation methods.
Conclusions: After the nursery thermal regulation protocol activities were tested and observed in a nursery environment, the results indicated that newborns presented lower rate of hypothermia in comparison to care provided prior to the protocol implementation. Observed results confirm that thermal regulation management have contributed to treatment and development of the newborns.

0613 STUDY ON PNEUMONIA ASSOCIATED TO THE VENTILATOR AS PART OF THE INFECTIOUS VIGILANCE

M Gini, R García Turiella, D Rovira, G Arana, F Daminato, G Ceconi, E Barral
Hospital Italiano Garibaldi- Rosario- Argentina

OBJECTIVE: To evaluate the annual incidence of pneumonia associated to the ventilator (NAV) in an Intensive Care Unit from a private institution in a comparative way during three years and to evaluate preventative measures.
MATERIALS AND METHOD: In a surgical clinic in an Intensive Care Unit consisting of 16 beds, in the period from November 13th 2000 to November 13th 2003, a total of 225 patients ventilated over 48 hours were included in the study. The methodology employed to the NAV diagnosis was the Clinical Infectious Pulmonary Score (CIPS), which consists in the daily evaluation of: Temperature, White Corpuscles, Bronchial Secretion, Pa Fi O2 (SDRA by PW being excluded), Rx, Tx and Tracheal Aspirant Culture (quantitative). Infrasonic (Adult Star) and Tahema (Horus) ventilators were employed. Thermostatic water humidifiers were employed, and heat and moist exchangers (HME) hydrophobic exchanged every 72 hours were used (Kenneth and col. C.C.M 2000). Open system of secretion suction. The obtained culture (tracheal aspirant and hemocultures) was processed according to the institution's regulations and the antibiograms were carried out according to the NCCLS recommendations.
RESULTS: 225 patients were included in the study. They were distributed as follows: 106 patients in the first period, 89 in the second and 60 in the third, involving a total of 2158 days of ventilation with an average of 9 days. The APACHE was 21 for the first group, 20 for the second and 15.4 for the third. The observed mortality was 66% in the first period, 82% and 69.81 in the third. The average age was 71 in the first and 64 in the second and third periods. As regards to sex distribution, it was as follows: First male group 61% (n: 65), female 40% (n: 39); second male group 66% (n: 59), female 33% (n: 30) and the third male group 64% (n: 38) and female 36% (n: 36). 26 (twenty six) NAV cases were documented in the first period representing the 25% of the patients, 9 cases in the second period representing 10% and 9 cases in the third representing 15% of the patients involved.
CONCLUSION: A significant decrease in the incidence of NAV was observed in the second period compared to the first (25% vs. 10%). We ascribe it to a greater care in the airway, to a greater emphasis on preventive measures both in the nursing and medical staff. As regards the third period, it showed a light increment probably due to the differences among the studied population. A positive influence on the patients' mortality was not found. Therefore, drawing the conclusion that patients died with pneumonia and because of its base pathology and not because of the pneumonia associated to the ventilator.

0614 13CO2 RECOVERY FRACTION IN EXPIRED AIR OF SEPTIC PATIENTS UNDER MECHANICAL VENTILATION

MA Martins, MT Battiston, NMM Passos, JS Marchini, A Basile-Filho
Intensive Care Discipline, Ribeirão Preto Medical School – University of São Paulo

Background: Continuous intravenous administration of isotopic bicarbonate (NaH13CO2) permits the evaluation of the organic retention of the 13CO2 fraction or the 13CO2 recovered in expired air. This determination is important for the correction of the calculation of substrate oxidation, amino acids in particular, because of the interconnection between the bicarbonate pool and the cellular oxidative processes. Objectives: The aim of this study was to evaluate, in critically ill patients victims of sepsis syndrome under mechanical ventilation, the 13CO2 recovery fraction (RF) in the expired air. Methods: In this study we have included 10 patients (4 men and 6 women) victims of septic shock, in fed state. Mean age was 55,1 ± 19 years, the APACHE II prognostic index 25,9 ± 7,4 with death risk of 60 ± 20% and the sepsis score (SS) of 19,1 ± 4,2. This protocol extended for approximately six hours. After advanced life support was provided, including parenteral nutrition (25 kcal.kg-1.day1), with the patient being stable, a prime (3.8 µmol.kg-1) of NaH13CO2 (99%, Mass Tracer Technology) was administered followed by a 6-hour continuous infusion of 3.8 µmol.kg-1.h-1 (TO-T360 min). Six VCO2 measurements (30 min each) were made with a portable metabolic cart connected to a respirator. Hourly samples of expired air were obtained using 750 mL collecting bags (Quintron, USA) attached to the outlet of the respirator. 13CO2 enrichment in expired air was determined by mass spectrometer (Stable Isotope Analyser, Europa Scientific).
Results: The patients presented a mean value of carbonic gas production (VCO2) of 181±52 mL.min-1 during the steady-state phase (T120 to T360 min). The 13CO2 enrichment during the interval from T120 to T360 min was 4.01 (APE x 1000) and a RF of 0,68±0,06.Conclusions: The results presented here indicate that the septic patient on mechanical ventilation showed a lower 13CO2 RF in expired air compared to non-septic critically ill patients (Tissot et al., Am J Clin Nutr, 1993). Although the reasons for the organic retention of carbonic gas in this patients remain unclear, it seems that the retention of CO2 is due to a "channeling" to different metabolic pathways. This original findings might be helpful to assess the metabolic status of specific amino acids, such as leucine used to estimate the 24-h whole body protein turnover, specially in septic patients under mechanical ventilation.

0615 THE HANTAVIRUS PULMONARY AND CARDIOVASCULAR SYNDROME (HPCVS) – TWO CASES REPORT

CSAA Chaves, VNS Montenegro, MM Pereira, CGF Santos, I Sanders, OLR Almeida, SB Margalho, ECD Cardoso
Hospital De Base, Brasília, Df, Brasil

INTRODUCTION AND OBJECTIVE: The first case of HPCVS was related in USA, in 1993. In 2004, there was an outbreak of Hantaviruses in Brasilia – DF, when two specific cases of HPCVS were related.
The authors provide a revision and a comparison with the cases described in the literature.
REPORTS: First Case: On the sixth day of admission into Hospital, a twenty-seven-year-old female patient, rural area resident, started presenting headache, fever, myalgia, dyspnea and dry cough. After three days, cough and dyspnea worsened. At the ICU admission the physical examination showed: tachydyspnea, dehydration, tachycardia and rough vesicular murmur. The thorax X-ray, at admission, made evident diffuse alveolar infiltrates and laboratory findings showed leukocytosis and thrombocytopenia. She also showed unstable hemodynamic conditions with low cardiac index of 1,4L/min/m² and systemic vascular resistance level of 3605 dyn.sec.cm-5. Being on a mechanical ventilator and under dobutamine , she was discharged after seven days. 2nd Case: A twenty-four-year-old male patient, with history of fever for five days, chest pain (midsternal, odynophagia , dry cough, throw ups and diarrhea, admitted into a regional hospital with blood pressure: 130x80 mmHg, lungs with crepitations and rales in right lung and diffuse wheezes, evolved into shock. Laboratory findings: leukocytosis, high hematocrit, thrombocytopenia and serum transaminase elevated. Thorax X-ray showed diffuse interstitial infiltrates. When at the ICU he needed mechanical ventilation and inotropic drugs, evolving into death.
CONCLUSION: The Hantaviruses is a lethal respiratory infection, of urgent assistance, demanding precocious suspect for immediate ventilatory and hemodynamic support treatment.

0616 THE USE OF NPPV DURING WEANING DECREASES ICU MORTALITY AND TOTAL LENGTH OF VENTILATORY SUPPORT

P Nery, L Pastore, A Maida, L Dalfiori Jr, G Schettino
Hospital Sírio Libanês, São Paulo, SP, Brazil

Background: the length of mechanical ventilation and the need for reintubation are associated with increased mortality in mechanically ventilated patients. Weaning protocols are useful to reduce the length of invasive ventilation and noninvasive positive pressure ventilation (NPPV) has been recommended to shorten the length of intubation. However, the published data are conflicting when comparing the use of NPPV immediately after extubation, as a weaning strategy, with it uses to treat respiratory failure after extubation. Objective: to evaluate the use of NPPV immediately after extubation as part of a weaning protocol in patients at risk for developing post-extubation respiratory failure (mechanical ventilation ³ 5 days, former T trial failure, COPD and heart failure). Methods: the data of consecutive patients mechanically ventilated for ³ 3 days, and who have been extubated, were collected before (pre-protocol group) and after the implementation of a weaning protocol (post-protocol group) in a high complexity medical/surgical ICU. Also, the data of patients who used NPPV to treat respiratory failure after extubation in pre-protocol group were compared with the data of patients at risk for post-extubation respiratory failure who prophylactic used NPPV in post-protocol group. Results: a total of 183 cases, 91 pre-protocol and 92 post-protocol, with similar baseline characteristics (SAPS II, age, gender and reasons for intubation) have been enrolled. The days of invasive ventilation and total ventilatory support time (invasive plus noninvasive ventilation, hours) were lower in the post-protocol group when compared to the pre-protocol (7.02±0.49 vs. 8.77±0.65 days, p=0.02 and 158.83±10.61 vs. 199.97±15.77 hours, p=0.04). The ICU length of stay (22.02±1.82 vs. 20.30±1.46 days, p=0.77) was similar in both groups, but the ICU mortality was lower in post-protocol group compared to pre-protocol (7 vs 23%, p= 0.01). NPPV was used in 69% of patients in the post-protocol group versus 37% pre-protocol (p<0.001). The length of invasive ventilation before extubation was comparable (9.0±0.95 vs. 7.43±0.46 days respectively for pre and post-protocol groups, p=0.45) in patients who used NPPV after extubation, and the NPPV failure ratio (reintubation£ 48hs) was similar and low (5 % vs. 8%, p=0.71) in both groups. The ICU mortality for patients who used NPPV was significantly lower in post-protocol group (9.1%) compared to pre-protocol (34.3%) (p= 0.004). Conclusion: a weaning protocol, which includes NPPV immediately after extubation for patients at risk for post-extubation failure decreases the ICU mortality and reduces the length of invasive and total ventilation support time without increasing the risk of weaning failure.

0617 A PROPOSAL FOR INSERTION AND MAINTENANCE OF CENTRAL VEIN CATHETER OF PERIPHERAL INSERTION PROTOCOL

MF Diz[1], CL Camargo[2], TF Batista[1], NCC Melo[2], MTA Calasans[2], CML Valente[2], MS Araujo[1], NS Oliveira[1], TSM Barbosa[1], T Oliveira[1], G Rego[1], A Ribeiro[1]
1 Faculdade de Tecnologia e Ciências-Salvador-Bahia-Brasil; 2 Escola de Enfermagem da Universidade Federal da Bahia-Salvador-bahia-Brasil

Background: The central vein catheter of peripheral insertion (CCPI) is a display inserted peripherally mainly in veins that are centrally located. This display is indicated when patient need intravenous solution for long periods of time and/or medication infusions. Its use has been increased in neonatal intensive care units because of its extended permanence period since it allows intravenous infusion of hyperosmolar and irritating solutions without compromising newborns cutaneous integrity, it decreases the risk of infection and mechanical complications and avoids surgical procedures for the placement of other catheters. This is an invasive procedure that puts the patient into risk, but it can be decreased by infection control using maximum barrier techniques, continue education programs, quality control achieved by two trained and qualified nurses and/or doctors. The technical and legal responsibility of nurses insertion and manipulation in CCPI in Brazil is standardized by law 7498/86, decree 94406/87, under Nurse Federal Council number 240/2000 according to Health Ministry decree number 272 on April 8th 1998. Objective: The aim of this study was to standardize the nursery care at the CCPI insertion and maintenance in order to minimize complications, avoid excessive newborn manipulation, decrease the infection rate and guarantee safe venous fit. Methods: A bibliographic study has been initiated about the topic and lately neonatal care nurses with intensive care experience have discussed about it in order to elaborate the proposed protocol. Results: The nursery protocol to CCPI insertion and maintenance was elaborated considering the following aspects: use indication, inclusion and exclusion criterions, peripheral fit options to insert the catheter, time of permanence, complications signs, dressing standardization and catheter handling. Conclusions: With the implementation of the purposed protocol, the results indicated that complications rate related to the catheter utilization decreased and an increase of the catheter permanence period and reduction in venous dissection at the unit.

0618 EFFECT OF THE GLUTAMINE ON THE SYSTEMIC INFLAMMATORY RESPONSE SYNDROME IN THE HEART SURGERY

L Amendola, F Pérez, G D'Empaire, I Pazos
Hospital de Clínicas Caracas. Caracas. Venezuela

In numerous studies it has been demonstrated that the glutamine improves the defect of intestinal permeability, it diminishes the bacterial translocation and endotoxin liberation; it improves the nitrogen balance; it diminishes the infection incidence and it shortens the number of days of ventilate support and hospitalization.Objectives: To determine if the glutamine administration during the heart surgery, diminishes the incidence and severity of the manifestations clinical, patron hyperdinamic, inflammatory markers of the systemic inflammatory response syndrome (SIRS) in relation to the group control. Methods: I study clinical, controlled, randomized where they were included a total of 25 subjected patients to central heart surgery; divided statistically in 2 comparable groups as for factors of risk, surgery type and events intraoperatives. 10 patients received 0,5 gr/Kg / day of glutamine during the 24 hours pre and later 24 hours to the heart surgery and 15 patients received conventional nutrition. The hemodynamic variables were determined, levels of TNF-alpha, IL-6, nitric oxide, protein C reactivates, lactic acid, troponin I; all previous and later to the surgery. Results: In this study a bigger incidence was observed of patient with patron hyperdinamic in the group control (7/15) in relation to the group that received glutamine (2/10); the same as they presented hyperglycemia (15); troponin elevation (9), lactic acidosis (6) patient of the group control; although significant difference was not demonstrated with the group that received glutamine. The elevation of TNF and IL-6 after the surgery in the group with glutamine that showed patron hyperdinamic was not significant (p>0,05); contrary to the group control where a significant elevation of TNF was observed and IL-6 pre and post-surgery (p <0,05) in the patients with the patron hyperdinamic. Bigger number was obtained of patient with atelectasis (7), pericarditis (6) in the group control; although it didn't influence in the days of hospitalization. Conclusion: The glutamine administration in the group of studied patients diminished the incidence of the SIRS in relation to the group control in the subjected patients to heart surgery demonstrating the value of the glutamine like immunomodulator.

0619 "ON LINE" HIGH VOLUME HEMOFILTRATION IN THE TREATMENT OF ACUTE RENAL FAILURE

C Vela[1], G Abrile[2], S Canet[1], F Suru[1], P Cozette[1], G Huchard[1]
1 Hôpital Saint Jean_Perpignan –France; 2 Hospital San Antonio de Padua- Rio Cuarto-Argentine

Background
The treatment of the acute renal failure(ARF) by continues or intermittent hémofiltration (HF) allows diminishing the hemodynamic problems induced by hémodialysis (HD), to check in continuous hydric and Ionic balance, to correct the abnormalities of acid basic status. Its inconveniences are: the insufficient correction in the hypercatabolic states; the frequent interventions for the change of substitution fluids bags; the limitation for a more important volume of infussion. The on line production techniques of the substitution liquid are currently used principally in hémodiafiltration (HDF) for the treatment of chronic renal failure (CRF). No more data is avalaible in the litterature for this technique of HF (continues or intermittent) in the treatment of ARF and with the critic patients.
Objectives
The aim of this study was to establish the feasibility and safety of performing "On line" high volume hemofiltration in a nephrologic intensive care unit
Methods
Between January 2003 and January 2004 In our nephrologic intensive care unit 127 HF « one line » pre-dilution were performed in 17 patients with ARF or an acute complication associated with CRF: 17 patients, 11 men and 6 women. aged: 72 + 17 years old, IGS 35.2+2, Vascular acces: femoral catheters (12), jugular catheters(Canaud's technique) (3), AV fistule (2), 8 on 127 were performed in continous form. For the remainder the time was 5,7+2 hours. The membranes: Polysulfone 1.8m2 (22), Polysulfone 2.10m2 (15 folds), polyacrylonitrile 1.8 m2 (10 folds), polyacrylonitrile 2.10 m2 (80 folds).
Results
Systolic blood pressure before HF 116+23 mmHg, dyastolic blood pressure 61+14 mmHg. Time (hours) (intermittent) 5.69+2.09 (Volume infussion), (l/hours) 7.13+4.69 (4-20), Infussion dosis(ml/kg/hour), 120+88 (35,9-319), Urea before (mmol/l) 25.31+11, Urea after (mmol/l) 15.06+10, Creatinine before (µmol/l) 305.18+175 (150-734), Creatinine after (µmol/l) 213.15+141 (41-566), Proteins before(g/l) 52.98+10 (41-84), Proteins after (g/l) 54.76+11 (40-84), Hemoglobin before (g%), 9.43+1.81, Hemoglobin after (g%) 10.15+1.2.
Conclusions
Is an efficacious form of renal replacement, which can be safely with adequate double filtration water purification. The possibility of standard equipment utilisation and the saving of time for the care personnel (bags absence) are the advantages.
The complexity of the water treatment structure, the supervision of the water quality check are the factors seem to be a major obstacle in most of the Intensive care units.
In our opinion, « one line » HF is an alternative treatment for the High Volume HF in ARF and in critic patient.

0620 THE RELATIVES' PRESCRIPTION: AN INCLUSION STRATEGY

AL Ribeiro, M Knibel, A Mota, C Cordier, M Di Calafiori, R Hatum, C Roderjan
CardioTrauma Ipanema Hospital; Rio de Janeiro; RJ; Brazil

Introduction: In the hospitalar environment, there is a permanent exchange of knowledge. Doctors, nurses, physiotherapists, nutritionists, psychologists and social assistant meet in "rounds" to study the evolution, the limits and the therapeutic possibilities of each patient one. Starting from there, a series of cares, actions and recommendations are prescribed, with the objective of recover the patient's health. In this circuit of " knowledge ", a lot of times, the precious knowledge of the relatives is careless ignoring by the team. There is born of there a new challenge: to include the relative in the care team.
Patient: Participated of this study 100 relatives of the patients in the intensive care unit (with stay superior to three days).
Material and method: By a semi-structured interview, the relatives was taught about the dynamics of the hospital and of relative's concept as caretaker. Based on this beginning, the family is stimulated to prescribe for the professionals a series of recommendations and cares to the patient. Through self-administered research, the relatives' perception was evaluated and of the other caretakers on this new one to seem " technical ".
Results: All the researched relatives believes that the family possesses important informations for the care and the patient's aid. Stimulated to evaluate its participation in the process of the patient's recovery, comparing with the previous internments: 74% told larger comfort in the relationship with the professional team; 12% didn't notice acceptance of the professionals to the recommendations; and 14% preferred not to register any recommendation. Classifying the content of the family prescriptions, it can be verified that: 29% refer to lines of the patient's personality; 51% request attention and affection; 13% signal to the team possible situations uncomfortable for the patient; 4% refer of bad experiences in the previous internments; 3% refer others. In the perception of the team: 42% consider the family prescription of great importance; 21% consider of medium importance; 18% consider of relative importance; and 19% consider of low importance. Investigating the reasons that took the relatives to opt for not prescribing, we verified that 94% refer fear that the professionals feels insulted, and refer " fear " for the non acceptance of the team.
Conclusion: As all the new practice, the family prescription generated in the assistencial team an inquietude. In compensation, the repercussion in the relatives is 100% positive, even for those that opted for not registering its recommendations. Although the recommendations don't represent significant alteration in the assistance to the patients, this action is good to reinforce to the relatives the caretaker's concept, enlarging the relatives' co-participation in the care, in way to minimize the sensation of unproductiveness and impotence, frequently noticed in the critical patients' relatives.

0621 NUTRITIONAL STATUS AND ENERGY AND PROTEIN INTAKE ASSESSMENT IN CHILDREN WITH CONGENITAL HEART DISEASE AFTER SURGICAL REPAIR

MAC Teixeira-Cintra, M Tremeschin, PH Manso, WVA Vicente, JP Monteiro, APCP Carloti
Faculty of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil

Objective: The nutritional therapy is associated to a better clinical and nutritional outcome in hospitalized children. The purpose of this study was to evaluate the nutritional status and the energy and protein intake after surgical repair in children with congenital heart disease.
Methods: Weight (WT), triceps skinfold thickness (TST), mid arm circunference (MAC), energy and protein recorded intake were performed in two moments during hospitalization.
Results: The results were expressed as mean and standard error. Comparison of mean values of variables were made using Student´s t test. Continuous variables with normal distribuition were correlated by Pearson test. Sixteen patients (5 newborn and 11 infants; age 4.25 ± 1.15 months) were enrolled in the study during 8.81± 1.38 days, from the pediatric intensive care unit (PICU) in a teaching hospital in Ribeirão Preto, Brazil. The anthropometry was done the day prior the surgery and in the last day in the PICU. The recorded energy and protein intake was performed on postoperative days 2.93 ± 0.7 and 11.75± 1.6. Children lost weight and body fat during the hospitalization (delta weight: - 90.63 ± 96.47 kg: delta TST= -0.46 ± 0.27 mm). Energy and protein intake was statistically increased at the end of hospitalization (initial: 35 ± 6.5kcal, final: 92 ± 9 kcal; initial 0.9 ± 0.2 grams, final 2.2 ± 0.2 grams; respectively). There was a statistical negative correlation between delta MAC and energy intake (r = - 0.55; p = 0.02). Delta WT and protein intake were almost negative correlated (r = - 0.49; p = 0.05). The delta MAC and protein intake were correlated but without statistical significance (r = - 0.15; p = 0.6).
Conclusions: The increased energy and protein intake was inadequate to prevent weight and body fat lost during hospitalization in PICU. The results suggest that energy expenditure in the critically ill children should be increased and it must be monitored in an accurate manner.

0622 GOOD NIGHT KIT: A STRATEGY TO WORK WITH NOISE IN THE INTENSIVE CARE UNIT (ICU)

AL Ribeiro, M Knibel, A Mota, C Cordier, M Calafiori, R Hatum, C Roderjan
CardioTrauma Ipanema Hospital; Rio de Janeiro; RJ; Brazil

Introduction: The inhospitable environment like hospital provoke in the professionals, in the family and in the patients a serious of "mental straim factors" that promote the unhealthy. Among these factors we found the " noise ". During the day, alarms sounds, staff circulation and professionals conversation, after all is worktime. How interrupts all those noises independently to be day or night, is worktime, time of movement, of works with the unexpected, and the .....? Considering these variables we created a mechanism that facilitates to the patients that needs of the silence, reduction of the ICU noises.
Patient: We studied 200 lucid patients in the Intensive Care Unit, in the period of January at July of 2003.
Material and method: Was done comparative analysis in two samples. In the first sample, the patients didn't have any support to work with the noise. In the second sample they was supplied with the Good Night KIT, made up of a protection headphone and a mask to blindfold the eyes and to avoid the clarity.
Results: In the first group, 74% didn't get to sleep and aimed the noise as main guilt. In the second group, 7% didn't adapt to the protection headphone, 6% didn't get to sleep, in spite of the protector's use, also referring difficulty with the decubitus position; 87% didn't notice the noise as a factor that hindered the resting during the night.
Conclusion: Distant of the pretense of being the solution for the " noise ", the good-night kit provides to the patient the possibility to minimize your distress, without interfering in the professionals' dynamics. We verified that the fact of the professionals proves to the patient the concern with this aspect generates in them a larger understanding with this problematic.

0623 MICROBIAL RELATIVE FREQUENCY AND ANTIMICROBIAL SUSCEPTIBILITY PATTERNS STUDY IN INTENSIVE CARE UNITS IN A TERTIARY CARE HOSPITAL IN RIO DE JANEIRO, BRAZIL

PH Godoy, NG Barroso, GM Regis, RL Cavalcanti, AC Rodrigues
Venerável Ordem Terceira de São Franscisco da Penitência Hospital

Background: Increased survival of immunodeficient patients achieved through medical advances in recent years, together with broad-spectrum antimicrobial selective pressure on microorganisms, translates into a higher number of infections due to multi-drug resistant microrganisms in many settings.
Objectives: To evaluate microbial relative frequency and antimicrobial susceptibility patterns in intensive care units in our hospital.
Methods: This study was performed in a 535-bed terciary-care hospital in Rio de Janeiro, Brazil. Microbiological reports of all blood cultures taken in the intensive care units (ICU A= 13 beds, ICU B= 8 beds, ICU C= 8 beds, Total= 29 beds) were prospectively evaluated from November 2003 to October 2004 to determine microbial relative frequency and antimicrobial susceptibility patterns. Blood cultures were incubated in an automated equipment (Bactec® ; Becton Dickinson, EUA). Positive bottles contents were then plated in blood agar and chocolate agar. Isolates samples were identified through biochemical tests, and susceptibility patterns were evaluated using Kirby-Bauer disk-diffusion method.
Results: A total of 234 (29.9%) blood cultures were positive. Coagulase-negative staphylococci were the most common pathogens in the 3 units. Total distribution was: coagulase-negative staphylococci (41%), Klebsiella pneumoniae (13.7%), Pseudomonas aeruginosa (11.5%), Staphylococcus aureus (9.8%). Isolated coagulase-negative staphylococci and Staphylococcus aureus were 100% susceptible to vancomycin. Susceptibility to oxacilin ranged from 42.3% (ICU C) to 62,5% (ICU A) among isolated coagulase-negative staphylococci and from 41.65% (ICU C) to 75% (ICU A) among isolated Staphylococcus aureus. Isolated Klebsiella pneumoniae susceptibility to imipenem ranged from 87,8% (ICU C) to 95.7% (ICU B) and maximal susceptibility to cephalosporins, aminoglycosides, fluoroquinolones and anti-pseudomonal penicillins found among them was 61.2% (amikacin, ICU C). Among isolated Pseudomonas aeruginosa, the maximum susceptibility found was 65.7% (amikacin ICU B). Susceptibility to imipenem among those isolates samples ranged from 38,1% (ICU C) to 53.6% (ICU A).
Conclusions: Antimicrobial resistance, especially among gram-negative pathogens, is a growing problem in many hospitals in Brazil. Continuous follow-up of antimicrobial susceptibility patterns allows faster introduction of adequate therapy to critical care patients. Antimicrobial control may positively impact resistance patterns. Further studies are necessary to access that.

0625 EFFECTS OF EXPIRATORY POSITIVE AIRWAY PRESSURE (EPAP) ON PULMONARY EPITHELIAL PERMEABILITY WITH 99MTC-DTPA: A CASE REPORT

D Paiva[2], CB Panta[2], IM Albuquerque[2], RLP Mattos[1], P Masiero[1], S Fernandes[1], B Spiro[1], SS Menna Barreto[1]
1 Universidade Federal do Rio Grande do Sul - UFRGS; 2 Universidade de Santa Cruz do Sul - UNISC

The clearance rate of inhaled technetium-99m-labeled diethylenetiramine pentacetic acid (99mTc-DTPA) from the alveolar space to the blood provides an index of pulmonary epithelial permeability, witch has been used to detect early some diseases. The alveolar epithelium forms an extremely tight membrane that is less permeable than the capillary endothelium. Some authors have been demonstrated that positive pressure (PEEP or CPAP) has increased solute transport, including 99mTc-DTPA, through the blood-gas barrier, but further studies may be necessary to elucidate the mechanisms of this phenomenon. This work investigated the effects of applying 20 cmH2O of expiratory positive airway pressure (EPAP) in one health subject on rate clearance of 99mTc-DTPA.
A jet nebulizer (Aerogama® - BR) at a flow of 8 l/min generated the 99mTc-DTPA aerosol. A Caucasian woman of 23 years old, without smoking history was submitted to inhalation of aerosol for 3 minutes at her normal tidal volume while seated. Continuos count radioactivity was made over the chest for 30 minutes using a scintillation gamma camera (Anger - MB9200). Was determined the clearance rate of 99mTc-DTPA expressed as the half-time (T1/2). The chest scintigraphy was obtained in spontaneously respiration and under EPAP facial mask with 20 cmH2O (BiPAP®STD/30 Respironics®, EUA- Write Martins) in seated position. Spirometry (Collins Survey II Spirometer®, EUA), was made to confirm her normal pulmonary function (CVF= 3,63 L, VEF1= 3,39 L and VEF1 /CVF= 93,40 %). In spontaneously respiration in seated position, the mean T1/2 was 63,44 min and after 20 cmH2O EPAP decreased significantly to 24,20 min.
This study demonstrated that 20 cmH2O EPAP increases 99mTc-DTPA clearance rate. This relationship is most consistent with the hypothesis that alveolar epithelial permeability is increased by lung inflation. Further studies are necessary to determine the effects of positive pressure under pulmonary epithelial and its clinical applications.

0626 MASS FUME POISONING VICTIMS: LESSONS FROM THE TRAGEDY

L Capdeville, I Previgliano, D Ceraso, J Neira, V Wolanow, G Fernández, MC Montarulli, J Rubianes, S Ilutovich, S Blejman, M Deheza, JP Rossini, B Hunter, LM Cantalluppi, G Pina, L Menga, E Malvino
On behalf of the Rockmagnon Tragedy Study Group

Background: On December 30, 2005 a flare fired from the audience ignited the packed club in a rock recital where locked exit doors trapped near 3000 persons in smoke and flames. Almost 180 died in the scene and 700 were hospitalized. Of them 137 were placed in different intensive care units (ICU). The aim of this study is to show the mean features of these mass casualties.
Material and Method: Study design: Retrospective, observational. Setting: different private and public hospitals ICU´s from Buenos Aires city and suburbs. All the centers were invited to participate in the study, only three of them refuse to share the data and three didn't send data on time.
Data collected: age, sex, injuries, COHb initial levels, other toxics, initial and delayed airway lesions, ICU and total Length of Stay (LOS), mechanical ventilation (MV) days, ARDS incidence, organ dysfunction, infectious complications (early or delayed pneumonia, other infections), cultures, MRI findings, neurological status at discharge and outcome according Glasgow Outcome Scale (GOS).
Results: Among 137 patients hospitalized in different ICU 63 were referred to public hospitals and 70 to private ones. Data was obtained from 107 patients in 33 centers. Regarding sex there were 63 males (59%), mean age 23±7 yo. All of them presented altered mental status and respiratory failure, 14 presented different degrees of burns, 9 rahbdomiolisys and 6 blunt chest trauma. Mean COHb was 14±16%, other toxics were positive in 12 (cyanide was not routinely investigated) Airway burns were found in 52% of the victims. Airway lesions on discharge were found in 40% (63% of the burned ones). MV was indicated in 67% of patients and 3% in non invasive ventilation. Mean MV days were 8±6 days. ARDS was found in 43% of the victims, development was on day 6±5, although 40% showed it before day 4th. Single organ dysfunction was developed in 23% and multiple organ dysfunctions in 33%, respiratory (33%), hemodynamic (17%) and renal failure (7%) were the leading ones. Early pneumonia (before day 4) was developed in 52% and delayed in 21%; bacterial diagnosis was done by means of BAL in 36% and tracheal aspirate in 25%. At discharge neurological examination was abnormal in 27% but MRI was abnormal only in 3%. Mean ICU LOS were 10±8 days and total LOS were 14±9. GOS is outlined in table 1.
Conclusions
This tragedy offered us the opportunity of characterize the natural history of fume poisoning in a young healthy population. It main features are toxic COHb levels, airway burns due to high temperatures and solid fume products, a high organ dysfunction incidence (66%) with early ARDS development. Interestingly neurological examination was abnormal in spite of normal MRI findings in 50%. Mortality was lower than predicted (9%) probably due to their previous health status.

Table 1- Glasgow Outcome Scale

GOS 1	10 (9%)
GOS 2	2 (2%)
GOS 3	2 (2%)
GOS 4	5 (5%)
GOS 5	86 (80%)

0627 THROMBOPROPHYLAXIS BEFORE PULMONARY EMBOLISM

JE Ubaldini, AL Campos, S Bauque, O Grek, MA Veltri, P Young, M Melero, FJ Chertcoff, JA Mazzei
EMADEP

Background: it is well proved that adequate prophylaxis for deep venous thrombosis is useful and cost-effective in the prevention of pulmonary embolism. The aim of this study is to evaluate if the prevention methods were correctly indicated in a cohort of patients admitted to the Intensive Care Unit (ICU) because of pulmonary embolism (PE).
Methods: the population of this study is part of a multicentric registry of pulmonary embolism. From 277 patients warded in the ICU of 8 general hospitals with diagnosis of PE, 139 patients were extracted. All of them had risk factors for PE before the event. We analyze how many of them received prophylaxis previously to the acute event and if it was adequate or not.
Results:

	AGE		SEX	
OLDEST	94		MALES	53
YOUNGEST	19		FEMALES	86
MEAN	71		TOTAL	139

Conclusions: in this cohort of patients the mean age was 71 years old, range 19-94 and the male/female ratio was 38 % males vs. 62 % females.
Only 36 % of them received prophylaxis to prevent PE and it was not always adequate. The agent most commonly used was UFH. Because of different reasons 64 % of these patients did not received prophylaxis at all.
We conclude that it is necessary to implement in our country hospital policies that reinforce the utilization of adequate prophylaxis for deep venous thrombosis in all surgical and clinical patients at risk.

	Patients	Prophylaxis		LMWH		UNF		Mechan	
Surgical	**42**	**15**	36%	4	10%	9	21%	2	5%
AMI	**18**	**7**	39%	0	0%	5	28%	2	11%
Stroke	**7**	**5**	71%	3	43%	1	14%	1	14%
Trauma	**22**	**7**	32%	0	0%	7	32%	0	0%
Prolonged bed rest	**45**	**14**	31%	6	13%	7	16%	1	2%
Sepsis	**5**	**2**	40%	2	40%	0	0%	0	0%
TOTAL	**139**	**50**	36%	**15**	11%	**29**	21%	**6**	4%

AMI = acute myocardial infarction. LMWH = low molecular weight heparin. UNF = unfractioned heparin.

0628 INFLUENCE OF THE USE OF VASOACTIVE AMINES ON B-TYPE NATRIURETIC PEPTIDE LEVELS MEASURED IN PATIENTS UNDERGOING CARDIAC SURGERY

A Rouge[1], RV Gomes[1], PM Nogueira[1], FG Aranha[1], R Vegni[1], AB Melo[1], C Karam[1], DJ Filho[1], CM Rutherford[1], LA Campos[2]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil

Background: The prognostic and therapeutic use of B-type natriuretic peptide (BNP) levels in the postoperative (PO) management of cardiac surgery (CS) has been frequently assessed.
Objective: To correlate the BNP levels measured during the PO period of CS with the use of vasoactive amines (VA) in the first PO hour (PO1H).
Case series and Methods: Prospective study with a classic cohort of 77 patients (pts) undergoing CS and consecutively selected between August/2003 and January/2005. Their mean age was 66.9±9.89 years, 22 (28.5%) were females, and the mean Euroscore was 4.26. The BNP level was measured in the preoperative period (BNPPre), and in the first (BNP1) and sixth (BNP6) PO hours. Hemodynamic and laboratory variables were recorded. The BNP level was quantitatively measured by use of immunofluorescence (Biosite Triage BNP Test). Patients receiving VA [(dobutamine (DBT) and/or noradrenaline (NAD)] at any dosage in the first PO hour were assessed and the use of VA was correlated with the BNP1 and BNP6 levels. The results underwent statistical analysis by using the Mann-Whitney test.
Results: In our sample, 22 pts received VA in the PO1H as follows: 7 pts, NAD + DBT; 12 pts, NAD; and 3 pts, DBT. A significant correlation was observed between the use of DBT and the BNPPre (p = 0.004), BNP1 (0.024), and BNP6 (0.05) levels. In the population studied, the use of NAD did not correlate with the BNP levels. The DBT group had greater mean BNPPre, BNP1, and BNP6 levels than those in the NAD group (790x159, 1004x243, and 609x203pg/dL, respectively).
Conclusion: Patients using DBT had greater BNP levels than those receiving only NAD. This may correlate with a worse degree of ventricular dysfunction among those pts.

0629 SATISFACTION QUESTIONNAIRE IN RELATIVES OF PEDIATRIC PATIENTS IN AN INTENSIVE CARE UNIT

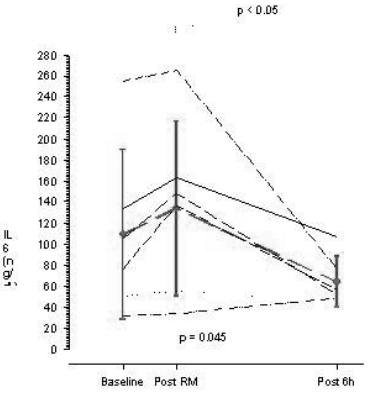
R Acquesta, M Garea, M Gutiérrez, S Coll, F Boccadoro, A Chattás, F Olazarri
Children´s Hospital Ricardo Gutiérrez, Buenos Aires, Argentina

Background: Traditionally Intensive Care Unit (ICU) quality of care has been evaluated according to medical criteria for procedures, results and outcomes. Nowadays the opinions of patients and relatives involved is regarded a highly useful resource to improve the overall quality of care. In the pediatric field patients and parents are very sensitive about information provided by the unit personnel in that should be delivered in a clear, comprehensible, truthful and sympathetic way. The satisfaction of patients and relatives has developed as a mayor quality of care criterion.
Objectives: To assess the satisfaction/dissatisfaction of the relatives of patients in a ICU from a Pediatric Hospital, to identify its different causes and try to draw relevant information to introduce changes in the delivered care.
Materials and Methods: One hundred and nine questionnaires were taken to relatives of the patients, each containing 14 structured questions admitting two positive and two negative possible answers with values 1 and 0 respectively. A double entrance matrix was then obtained to measure the satisfaction score (SS) of the polled population. Microsoft Office Access (V. 2000) was used as database and Excel (V.2000) to generate the corresponding tables. The average score was 0.65.
Results: Higher incidence in SS was brought in mainly by answers to questions Nº 2, 1, 4, 10 related to perception of good medical care. The lower SS were from questions 9 relative to explaining the use of the life supporting machines and 7 caring how they felt emotionally during their child hospitalization.
Conclusions: Quality of medical care was perceived a non-conflicting issue. Taking account and caring for the emotional needs of parents and relatives remains as a mayor task to be addressed at by the staff and personnel of the ICUs.

0630 THE SYSTEMIC INFLAMMATORY IMPACT OF A "MAXIMUM-RECRUITMENT" STRATEGY IN ALI/ARDS PATIENTS

J Pilau, V Okamoto, M Park, AS Hirota, MBP Amato, CRR Carvalho
Respiratory ICU - University of São Paulo, São Paulo, Brazil

Background: Protective mechanical ventilation has been the cornerstone of ALI/ARDS treatment. The maximum-recruitment strategy is a proposal for ventilating these patients with the maximum percentage of alveoli patent, aiming a homogeneous distribution of the inspired air, accompanied by efforts to avoid tidal overdistension. To accomplish this target, we propose an aggressive and stepwise recruitment maneuver (SRM), followed by high, sustained positive end-expiratory pressures (PEEP) titrated according to decremental steps. The aim of this study was to demonstrate the systemic inflammatory effects of such strategy, analyzing its consequences on the systemic levels of cytokines, especially (IL-6).
Methods: Prospectively, 6 consecutive and clinically stable ALI/ARDS patients under mechanical ventilation were submitted to a SRM. After a baseline period under "ARDSnet" like protocol (VT = 5 mL/kg, PEEP = 10 cmH2O), 2-minute steps of tidal ventilation with a fixed delta pressure = 15 cm H2O and progressive PEEP levels (25, 30, 35, 40 and 45 cm H2O) were applied until full recruitment (defined as PaO2+ PaCO2 > 400 mm Hg ± 5% at FiO2=1.0), occurrence of adverse effects or a plateau pressure = 60 cm H2O. PEEP was later titrated by applying 4 minutes volume control ventilation (4 ml/kg), during decremental PEEP steps (2 by 2 cmH2O), starting from an initial PEEP of 25 cm H2O. PEEP was considered ideal 2 cm H2O above the value where there was a fall of 5% in the PaO2+ PaCO2. Data are shown as mean ± SD, ANOVA to repeated measures was used with Tukey post hoc analysis. Significance considered was $p < 0.05$.
Results: The age was 43 ± 15 yo, APACHE II was 18 ± 2, mean PaO2/FiO2 ratio at the inclusion was 165 ± 77, time of mechanical ventilation before SRM was 2 ± 0.7 days and titrated PEEP was 21.5 ± 2.5 cm H2O. IL6 at the baseline was 108.6 ± 80.5 pg/dl, at the end of SRM with titrated PEEP was 133.6 ± 83 pg/dl and after 6 hours of titrated PEEP ventilation was 63.7 ± 24 pg/dl ($p = 0.045$, post hoc analysis $p < 0.05$ between titrated PEEP at the end of SRM and 6 hours of titrated PEEP ventilation).
Conclusions: A protective ventilatory strategy, based on a maximum-recruitment strategy in ALI/ARDS patients reduces the systemic IL-6 serum level. This finding is compatible with a hypothesis that the SRM followed by a high PEEP ventilation reduces the strecht and inflammatory reaction in lung parenchyma.



0631 CAN B-TYPE NATRIURETIC PEPTIDE LEVELS PREDICT ORGANIC DYSFUNCTION IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY?

A Rouge[1], FG Aranha[1], RV Gomes[1], PM Nogueira[1], MA Fernandes[1], R Vegni[1], J Sabino[1], C Karam[1], F Nogueira[1], LA Campos[1], HF Dohmann[2], HF Dohmann[2]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil

Background: The usefulness of measuring B-type natriuretic peptide (BNP) levels in the postoperative (PO) period of cardiac surgery (CS) has been frequently assessed; however, the prognostic and therapeutic follow-up value of BNP and its kinetics in the perioperative period of CS have not been well established.
Objective: To correlate the BNP levels measured in the first and sixth PO hours of CS with the outcome variable, Organic Dysfunction (OD), on the third PO day.
Case series and Methods: Prospective study with a classic cohort of 77 patients (pts) undergoing CS and consecutively selected between August/2003 and January/2005. Their mean age was 66.9±9.89 years, 22 (28.5%) were females, and the mean Euroscore was 4.26. The BNP level was measured in the preoperative period (BNPPre), and in the first (BNP1) and sixth (BNP6) PO hours. Hemodynamic and laboratory variables were recorded. The BNP level was quantitatively measured by use of immunofluorescence (Biosite Triage BNP Test). Organic dysfunction was established as MODS or SOFA ≥ 5 on the third PO day of CS. The results underwent statistical analysis by using the Mann-Whitney test.
Results: In the population studied, 9 pts had OD, which showed no significant correlation with BNP levels (BNPPre, BNP1 and BNP6). Therefore, in this population, BNP levels could not predict OD.
Conclusion: In the population studied, no correlation was observed between BNP levels and OD on the third PO day of CS.

0632 CLINICAL IMPACT OF THE VASOPLEGIA SYNDROME ON THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY

W Homena, D Moreira, A Carmo, B Santos, G Gama, R Vegni, F Oliveira, A Casarsa, A Pontes, J Brito, S Olival, R Gomes
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

BACKGROUND: Vasoplegia is a frequent complication in the postoperative period (POI) of cardiac surgery (CS) directly related to the inflammatory response following ECC. Factors related to its severity have not yet been established. The use of Methylene Blue (MB) is a therapeutic option.
OBJECTIVE: To assess the role of MB in the clinical impact of vasoplegia on the POI of CS.
METHODS: We retrospectively assessed 57 patients (pts) (18.2%) selected from a database from January 2004 to January 2005, who evolved with severe vasoplegia in the POI and received MB (group 1 – G1), and compared them with a historic control (group 2 - G2). Vasoplegia was defined as: SBP (sistemic blood pressure) 90 mm Hg; CVP (central venous pressure) 15 cmH2O; mixed/central venous SAT (saturation) 65%; CI (cardiac index) 2.2 and/or preserved biventricular function on echocardiography. In the preoperative period, the Euroscore was assessed, and, in the perioperative period, ECC and anoxia duration, and surgery type were assessed. The following were considered clinical outcomes of severity in the first 24 POI hours: levels of HCO3, CVP, HR, MBP, lactate, mixed/central venous SAT, TISS, SOFA, MODS, use of amines, and massive volume replacement (> 3 L/BS). Hospitalization length and death were also considered. The statistical analysis comprised the Student t, Mann-Whitney, chi-square, and Fisher exact tests.
RESULTS: G1 comprised 44 men (77.2%) and G2 comprised 150 men(58,8%). The median ages in G1 and G2 were 64 years (Q25 = 54, and Q75 = 75 years) and 58 years (Q25 = 25, and Q75 = 68 years), respectively, showing statistical significance ($p = 0.009$ and $p = 0.003$, respectively). The Euroscore, surgical variables, and clinical outcome variables did not differ (p = NS).
CONCLUSION: Despite the high incidence and severity of the vasoplegia syndrome, MB did not alter its morbidity and mortality. A more advanced age and male sex were associated with greater severity in the population studied.

0633 MULTIDIMENSIONAL STRUCTURE FOR CLASSIFICATION OF ACUTE RENAL FAILURE - VALIDATION STUDY

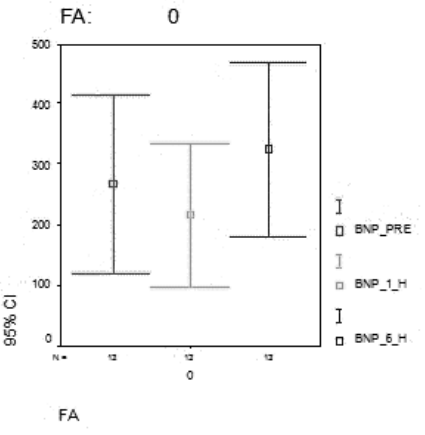
FC Barcellos[2], DSL Nunes[1], RH Gomes[1], DB Rodrigues[1], LM Rota[1], G Jaeger[1], TP Brunet[1], T Tubone[3], CGB Silva[1], M Bohlke[1]
1 Universidade Católica de Pelotas; 2 Hospital Universitário São Francisco de Paula; 3 Santa Casa de Pelotas

Background: One of the impediments to progress in handling of acute renal failure (ARF) in critically ill patients is the lack of a specific classification system.
Objectives: To test in our environment a specific index recently proposed for classification of ARF.
Methods: prospective study carried on two brazilian Intensive Care Units (ICU). Patients with diagnosis of ARF were evaluated through application of APACHE II generic index of severity and severity index specific for ARF proposed by Mehta. The predictive capacity of the indices was evaluated through confection of receiver operating characteristic (ROC) curves for main outcomes, death and dialysis.
Results: 100 patients were evaluated, average age 62,4 (±15,3) years, mean APACHE score 22,5 (±8,7) and Mehta score 8,7 (±2,3). Fifteen patients needed dialysis, with 53 deaths. The APACHE scores of surviving and no-surviving patients were 18,6 (±7,9) and 26,1 (±7,9) (p≤0,001), with Mehta scores of 7,6 (±1,9) and 9,4 (±2,4) (p<0,001), respectively. The APACHE scores of patients submitted to dialysis and conservative treatment were 24,5 (±7,9) and 22,2 (±8,8) (p=0,3), with Mehta scores 10,1 (±2) and 8,3 (±2,3) (p=0,007), respectively. The area under ROC curve was similar for the two indices on outcome death (APACHE 0,75; Mehta 0,72) and a larger area under ROC curve was obtained with Mehta on outcome dialyis (APACHE 0,58; Mehta 0,74).
Conclusions: Mehta and APACHE indices showed similar performances in prediction of mortality, while Mehta was a better predictor of need of dialysis in ARF patients. Therefore, the specific index Mehta was adequate for prognostic evaluation and classification of ARF in the studied ICUs.

0634 CAN B-TYPE NATRIURETIC PEPTIDE LEVELS PREDICT THE OCCURRENCE OF ATRIAL FIBRILLATION IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY?

A Rouge[1], RV Gomes[1], MA Fernandes[1], PM Nogueira[1], AB Melo[1], CM Rutherford[1], B Barros[1], FA Tuche[1], LA Campos[1], HF Dohmann[2]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil

Background: The usefulness of measuring B-type natriuretic peptide (BNP) levels in the postoperative (PO) period of cardiac surgery (CS) has been frequently assessed.
Objective: To correlate BNP levels and occurrence of Atrial Fibrillation (AF) in the PO period of CS.
Case series and Methods: Prospective study with a classic cohort of 77 patients (pts) undergoing CS and consecutively selected between August/2003 and January/2005. Their mean age was 66.9±9.89 years, 22 (28.5%) were females, and the mean Euroscore was 4.26. The BNP level was measured in the preoperative period (BNPPre), and in the first (BNP1) and sixth (BNP6) PO hours. The BNP level was quantitatively measured by use of immunofluorescence (Biosite Triage BNP Test). The occurrence of AF in the PO period was correlated with the following variables: Euroscore; age; sex; preoperative creatinine level and ventricular function; duration of ECC; SOFA on the first PO day; and BNP (Pre, 1, and 6) levels. The statistical analysis comprised the following tests: Student t; Chi-Square; Mann-Whitney followed by ROC curve construction; and principal component analysis.
Results: In the sample studied, 13 pts (16.8%) had AF in the PO period. A significant correlation was observed between the BNP levels [BNPPre (0.01), BNP1 (0.011), and BNP6 (0.03)] and the occurrence of AF. None of the other variables tested correlated with the occurrence of AF. After the principal component analysis, the 3 BNP levels maintained the correlation with the occurrence of AF. BNPPre had a better AUC (ROC) (0.727), in which values greater than 100 pg/dL correlated with the occurrence of AF (figure). Conclusion: In the population studied, the occurrence of AF showed a correlation with the 3 BNP levels measured, and all of them were independently associated with the outcome. A BNPPre level greater than 100 pg/dL correlated with the occurrence of AF in the PO period of CS.



0636 RELATIONSHIP BETWEEN CRITICAL PATIENT'S RELATIVES; RELATIONSHIP ICU NURSE – RELATIVES AND ITS INFLUENCE IN THE ABOVE MENTIONED RELATION

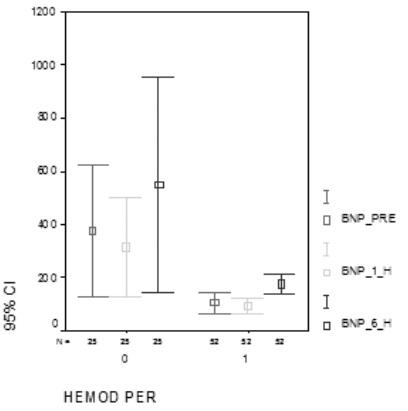
N Gómez, O Ortega
Intensive Care Unit of the University Insular Hospital of Gran Canaria (Canarias-España)

Background/Objectives: In spite of the development and the technological innovation that allows to offer a better welfare quality, the hospital admission of patients generate an uproot from their home and an emotional impact in their relatives, that begins just in the moment in which the patient is admitted in the hospital and is further accentuated as they enter into the Intensive Care Unit (ICU). Family members who suffer for a critically ill relative are usually immersed in atmosphere of insecurity, need and crisis and it is likely that they will need to be understood, before being helped. To become closer to the person in crisis, it is necessary to focus the attention in the art of communication, being able to speak and to be listened to achieve emotional discharge. Objectives:
1. To identify and to analyze the relationship among relatives before entering the ICU.
2. To define the influence that the nurse - relative relationship has in the above mentioned relation.
3. To analyze the nurse – relative relationship.
Methods: Extracted from a study pilot made in the ICU of the University Insular Hospital of Gran Canaria (3rd Level), a transverse descriptive-observational study was designed. The extraction of information was made using two questionnaires of our own elaboration (one for nurses and another one for relatives), during three months. For statistical analisys, a Statistical Package for the Social Sciences (v12.0) was used. P <0.010 was considered statistical significant
Results: The relatives who met each other before the patient entered the ICU, felt helped, understood, and the above mentioned relationship helped them to understand the disease of the relative. Regarding the kind of help that the relatives offered to each other, "it helped them better to carry through the pathological process of the relative" and "created friendship" correspond to the major percentages of answer. The fact that nurses had a relationship with relatives of less than 10 minutes is associated to the relationship established between the relatives before entering in the ICU, they felt helped, understood, and the above mentioned relationship helped them to understand the disease of the relative, this was a fact that did not happen when the nurses spoke more than 10 minutes with relatives.
Conclusions: 1. When the relatives had a relationship among them before entering in the ICU, they felt helped, understood, and the above mentioned relationship helped them to understand the disease of the relative. 2. From the above mentioned interrelationship sprouted a support that help them to carry through the best possible way in order to face the pathological process of the patient and friendship to be born. 3. The interrelationship among critically ill patient's relatives was due to the fact that nurses were related to them for less than 10 minutes. 4. Both the nurses and the relatives lacked of time for building a relationship.

0638 CAN HEMOTRANSFUSION AND B-TYPE NATRIURETIC PEPTIDE LEVELS BE CORRELATED IN HIGH-RISK PATIENTS UNDERGOING CARDIAC SURGERY?

A Rouge[1], RV Gomes[1], PM Nogueira[1], MA Fernandes[1], DJ Filho[1], B Barros[1], FG Aranha[1], R Vegni[1], C Karam[1], LA Campos[1], HF Dohmann[1]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil

Background: The usefulness of measuring B-type natriuretic peptide (BNP) levels in the postoperative (PO) period of cardiac surgery (CS) has been frequently assessed; however, the prognostic and therapeutic follow-up value of BNP and its kinetics in the perioperative period (Periop) of CS have not been well established.
Objective: To correlate BNP levels and hemotransfusion in the Periop.
Case series and Methods: Prospective study with a classic cohort of 77 patients (pts) undergoing CS and consecutively selected between August/2003 and January/2005. Their mean age was 66.9±9.89 years, 22 (28.5%) were females, and the mean Euroscore was 4.26. The BNP level was measured in the preoperative period (BNPPre), and in the first (BNP1) and sixth (BNP6) PO hours. The BNP level was quantitatively measured by use of immunofluorescence (Biosite Triage BNP Test). Patients undergoing hemotransfusion in the Periop were selected, and their BNP levels in the PO period were correlated. The results were submitted to statistical analysis by using the Kruskal-Wallis test.
Results: Of the 77 pts studied, 25 underwent Periop hemotransfusion. The BNPPre (0.030), BNP1 (0.053), and BNP6 (0.010) levels showed a significant correlation with hemotransfusion. The BNP levels found in the pts undergoing hemotransfusion had greater means and SD: BNPPre (103.4±133.3), BNP1 (93.7±100.9), and BNP6 (176.8±135.2).
Conclusion: The pts undergoing hemotransfusion had greater BNP levels and also a greater variation between those levels, evidencing their more critical condition. The correlation found also shows that hemotransfusion influences BNP levels.



0639 INFLUENCE OF GLYCEMIC LEVEL IN THE MORBIMORTALITY AFTER CARDIAC SURGERY IN CHILDREN

MY Chigutti, MC Negrelli, UA Croti, RDR Liberatore Jr, MCR Ferreira
São José do Rio Preto Medical School

Previous accounts correlate the existence of alterations in blood glucose level with worsening prognostic after cardiac surgeries in adults. Few are the references regarding the same correlation in cardiac surgery in infants.
Objective: Evaluate the relation between alterations of glucose level and morbimortality of paediatric patients after cardiac surgery.
Methods: retrospective analyses of patients interned in the paediatric intensive care unit between February 2003 and January 2004. Medical records from all patients that had cardiac surgery between this period were reviewed. 170 medical charts were checked in regards to sex, age, weight, blood glucose level before and after surgery, period of hospitalisation and mortality. Statistical analyses were performed with determination of media and mean, standard deviation, student t test between means, person linear correlation test and binary logistic regression by SAS software.
Results: from the 170 patients 86 were female and 84 male (1:1,02). The age varied from 0 to 180 months with mean of 45,05 (SD 47,1 months). Blood glucose level varied from 21 to 282 mg/dl with mean of 92,2 (SD 34,21 mg/dl) before surgery and varied from 63 to 396 mg/dl with mean of 135,18 (SD 47,62 mg/dl) after surgery. The number of episodes in witch the glucose level was more than 110 mg/dl was recorded. After Person test we were not able to find relation between glucose level and mortality, but when the glucose results were divided in two different groups, under and over 110 mg/dl, we found that odds-ratio was 1,01 to each 1 mg/dl over 110. After Kruskal-Wallis test, we found that 11% of survivors have had a glucose over 110. In contrast 87% of dead patient have had one or more result over 110. The time of ICU varied from 1 to 66 days, with 6 deaths.
Clinical data from 170 medical records
Mean SD
AGE 0-180 months 45,05
GLUCOSE before 21-282 mg/dl 92,2
GLUCOSE after 63-396 mg/dl 135,18
ICU 1-66 days
Deads 6/170
Conclusion: Intensive insulin therapy has been shown to decrease morbidity and mortality in the critically ill patient. Hyperglycemia adversely affects fluid balance, predisposes to infection, morbbidity following acute cardiovascular events and increase the risk for renal failure. Glucose level over 110 mg/dl had power to predict dead in our studied population. These data are in accordance with adult data showing that glucose level around cardiac surgery must be controlled and be maintained under normal values. The best approach may be the use of IV continuous regular insulin or even the use of insulin analogues by SC.

0640 TAMPONADE IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY: CAN RISK BE PREDICTED?

W Homena, D Moreira, D Kasal, B Abufaiad, A Squadri, B Santos, L Alves, S Olival, R Vegni, A Pontes, J Brito, A Casarsa, F Oliveira, R Gomes
Instituto Nacional De Cardiologia De Laranjeiras, Rio De Janeiro, RJ, Brazil

BACKGROUND: Although the incidence of cardiac tamponade (CT) in the postoperative period (POI) of cardiac surgery (CS) is low (3-6%), it results in high morbidity and mortality. Mechanical surgical factors and dyscrasia are risk factors. Data on the importance of other variables in cardiac tamponade are lacking.
OBJECTIVE: To assess the clinical impact of CT on patients (pts) undergoing CS, and to correlate it with risk variables.
METHODS: Retrospective study of a cohort of 43 pts who evolved with CT selected from a database (6.4%). The sample was divided into G1 (death) and G2 (no death). In the preoperative period (Pre), the following parameters were assessed: body surface, CRF (serum Cr > 1.7 mg/dL), underlying pathology, EF (%), CS type, anticoagulant/antiaggregating (AC/AA) therapy and its suspension. In the perioperative period, the following parameters were assessed: CS type, ECC/anoxia duration, and polytransfusion (≥ 4 EC). Drainage (mL), hemotransfusion, AC/AA therapy, interval between CS and CT, and interval between the diagnosis and intervention were assessed in the POI. The statistical analysis comprised the Student t, Mann-Whitney, chi-square, and Fisher tests.
RESULTS: G1 comprised 6 pts (13.9%) with a median (med) age of 71 years (Q25 = 63/Q75 = 75), and 66% were men. The median age in G2 was 54 years (Q25 = 38/Q75 = 67) (p = 0.006), and 62% were men. In the Pre, AC use was significant (G1 = 2, and G2 = 1; p = 0.04). In the periop, combined surgery (G1= 4, and G2 = 3; p = 0.003) and aprotinin use (G1= 3.5 and G2 = 21.5; p = 0.03) were significant. In the POI, drainage in the first hour was as follows: G1 med = 0 mL (Q25 = 0/Q75 = 0), and G2 med = 50 mL (Q25 = 0/Q75 = 99) (p = 0.009). The intervals for CT were as follows: G1 med = 28 h (Q25 = 24/Q75 = 72), and G2 med = 167 h (Q25 = 72/Q75 = 264) (p = 0.003). The intervals for the intervention were as follows: G1 med = 24h (Q25 = 4/Q75 = 34), and G2 med = 192 h (Q25 = 120/Q75 = 264) (p = 0.001). No difference was observed in regard to the other variables (p = NS).
CONCLUSION: Surgical factors, such as combined surgery, aprotinin use, and lack of drainage in the first hour, and early CT drew attention to a severe surgical outcome.

0641 CAN B-TYPE NATRIURETIC PEPTIDE LEVELS PREDICT SURGICAL ICU LENGTH OF STAY FOR PATIENTS UNDERGOING CARDIAC SURGERY?

RV Gomes[1], A Rouge[1], PM Nogueira[1], MA Fernandes[1], J Sabino[1], FG Aranha[1], DJ Filho[1], B Barros[1], LA Campos[1], HF Dohmann[1]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil

Background: The usefulness of measuring B-type natriuretic peptide (BNP) levels in the postoperative (PO) period of cardiac surgery (CS) has been frequently assessed; however, the prognostic and therapeutic follow-up value of BNP and its kinetics in the perioperative period of CS have not been well established.
Objective: To correlate the BNP levels measured in the PO period of CS with the surgical ICU length of stay (SICULOS).
Case series and Methods: Prospective study with a classic cohort of 77 patients (pts) undergoing CS and consecutively selected between August/2003 and January/2005. Their mean age was 66.9±9.89 years, 22 (28.5%) were females, and the mean Euroscore was 4.26. The BNP level was measured in the preoperative period (BNPPre), and in the first (BNP1) and sixth (BNP6) PO hours. Hemodynamic and laboratory variables were recorded. The BNP level was quantitatively measured by use of immunofluorescence (Biosite Triage BNP Test). Patients were divided into the following 3 groups according to the SICULOS: GI, < 3 days; GII, from 3 to 7 days; and GIII, > 7 days. The results underwent statistical analysis by using the Mann-Whitney and Wilcoxon tests.
Results: The number of pts in the groups was as follows: GI, 51; GII, 20; and GIII, 6. A significant correlation was observed between BNP levels and SICULOS: BNPPre (0.002), BNP1 (0.000), and BNP6 (0.000). The mean levels of BNPPre, BNP1, and BNP6 in the groups were, respectively: GI (115, 115, and 191 pg/dL); GII (318, 229, and 497 pg/dL); and GIII (424, 369, and 527 pg/dL). A BNP level greater than 300 pg/dL correlated with a longer SICULOS for pts undergoing CS.
Conclusion: BNP levels correlated with SICULOS. Patients with BNP levels greater than 300 pg/dL had a longer SICULOS, probably due not only to a worse ventricular dysfunction, but also to a greater hemodynamic instability and a more critical condition in the PO period of CS. In this study, the BNP level was an important marker of longer SICULOS.

0642 ANALYSIS OF BEHAVIORAL CHANGES, RESPIRATORY AND HEMODYNAMIC EFFECTS FOLLOWING NASOTRACHEAL SUCTIONING IN CHILDREN FOLLOWING CONGENITAL HEART SURGERY

K Abud, P Sales, E Nozawa, MIZ Feltrim
Heart Institute (InCor), University of Sao Paulo School, Sao Paulo Brazil

Background: Retention of pulmonary secretions is a recurrent complication after congenital heart surgery. Nasotracheal suctioning is an invasive procedure used to remove secretions when cough is not efficient. Nevertheless respiratory and hemodynamic changes may occur during suction. The catheter introduction may cause pain that contributes to clinical alterations. Because or pain and respiratory failure are not objective parameter to study in children, available scales can be useful in some situations.
Objectives: Analyze parameters respiratory, hemodymamic and behavioral changes following nasotracheal suctioning in children after congenital heart surgery.
Methods: Prospective study in 26 children (mean 5 moths age) who had undergone cardiac surgery were studied. Conventional chest physiotherapy was applied and following one minute resting, than the tracheal suction introducing a catheter while offering supplemental oxygen 5 l/min. After nasotracheal suctioning data recorded were heart rate, pulse oxymetry, respiratory rate, and non-invasive arterial blood pressure. The pain was recorded using behavioral analysis of the Neonatal Infant Pain Scale (NIPS) and respiratory failure was recorded using Silverman-Andersen Score (SAS). The data were recorded immediately, three minutes and five minutes after suctioning. For statistical analysis the One Way Analysis of Variance was performed considering significant values when $p<0.05$, all parwise multiple comparision procedures was performed using Tukey test (respiratory rate and arterial blood pressure, heart rate) and Dunn's method (SAS and NIPS).
Results: Respiratory ($p=0.001$) and heart rate were higher than the normal values ($p<0.05$) and returned to initials values in three minutes. Oxygen saturation was not different ($p=0.284$) either immediately after aspiration or after five minutes that may occur because of supplemental oxygen during suctioning. Arterial blood pressure was statistically significant higher between immediately and five minutes after suctioning ($p=0.004$) and returned to normal values. However these changes do not induce bleeding. NIPS demonstrated pain only immediately after nasotracheal suction ($p< 0.05$) and analgesic drugs was not used. SAS recorded to respiratory failure was significant higher ($p<0.05$) only in the first minute and none children has score six that means indication for intubation.
Conclusion: Nasotracheal suctioning cause changes in the behavior of children after cardiac surgery because of pain. However the pain discontinue when the procedure ends. The effects following nasotracheal suctioning do not continue more than five minutes, and are not sufficient to promote respiratory failure or severe hemodynamic changes.

0643 BEHAVIOR OF CENTRAL VENOUS CATHETERIZATION IN THE INTENSIVE CARE UNIT

F Zanon[1], LA Palma[2], B Zanon[1], E Rosso[1], D Marcolin[1], E Goellner[1]
1 Hospital São Vicente de Paulo - Rio Grande do Sul - Brasil; 2 Hospital da Cidade de Passo Fundo - Rio Grande do Sul - Brasil

Background: The catheterization of the veins of big caliber is one of the most used procedures in the intensive care units. The complication rate ranges from 0,4% to 22% in these procedures. Althoug central venous catheterization is essential in the clinical practice of intensive care units, the local and systematical infectious complications have great potential magnitude in the morbidity and mortality of the patients acutely ill.
Objetives: To observe the indications, the ways of access and to analyze the main complications of central venous catheters.
Methods: This is an observational prospective study, in which the venous deep catheters made in the period of July to November 2004 were analyzed in two units of intensive care unit. In the analysis the indications, main ways of access, the realization of radiological control and the presence or not of complications were considered. The patients were included in the work at the moment of the venous punch and were accompanied until the moment they left hospital.
Results: There were 147 central venous catheterizations during the period of study. The average age of the patients was 55 years old and the time of permanence of the catheters was in average 10 days. The main indication for the procedure was the hemodynamic observation with central venous pressure occuring in 53% of the punches. The way of access most frequently used was the right infraclavicular subclavian in 72% of the cases. Radiological control was made in 97% of the punches, being less than six hours in 90% of the cases. The correct positioning of the catheter happened in 91% of the cases. The complication rate was around 8,5% being the catheter infection responsable for 4,5% of those, pneumothorax occurrred in 1,7% of the patients, arterial punch in 1,7% of the cases and hydrothorax in 0,9%. The hospital death rate in the group of punched patients was 48,8%.
Conclusions: This study illustrates the central venous catheters behavior in the intensive care unit in two hospitals in the south of Brazil, showing results according to the observed statistics in international literature.

0644 DIAGNOSIS OF BACTERIAL MENINGITIS IN CHILDREN USING CSF FERRITIN LEVEL

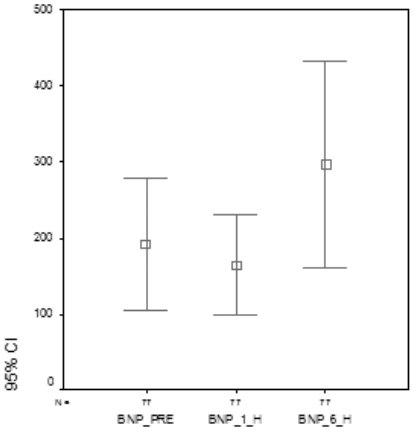
RG Branco, PC Garcia, CG Pretto, JP Piva, PR Einloft, F Bruno, A Sfoggia, CH Casartelli, JC Santana, DJ Kipper
Pediatric Intensive Care Unit, Department of Pediatrics, Hospital São Lucas and Medical School, Pontificia Universidade Catolica do Rio Grande do Sul (PUCRS), Porto Alegre, Brazil

Background/Objective: Bacterial meningitis is a severe infection associated with morbidity and mortality. Early institution of treatment reduces significantly mortality.
However, laboratorial diagnosis involves multiple analyses of liquor, demanding time and some times can be inaccurate. Ferritin is a protein normally found in the serum that under normal situations do not cross the hemato-encephalic barrier. In addition to its usual property of iron carriage, ferritin is also an acute phase protein that increases in inflammatory states, in particular in bacterial infection. The presence of inflammation in the central nervous system activates, and increases production of this protein in the liquor. We evaluated the ability of CSF ferritin, as a single test, to diagnose bacterial meningitis.
Methods: We studied, prospectively, children from 2 months to 12 years of age, submitted to a diagnostic lumbar punction at the Pediatric Emergency department at Hospital in southern Brazil. Patients were divided in group according to their clinical and laboratorial presentation: Group I – children with clinical presentation and laboratorial results suggestive of bacterial meningitis. Group II - children with clinical presentation and laboratorial results suggestive of viral meningitis. Group III - children with clinical presentation suggestive of meningitis, but laboratorial results and clinical evolution excluding meningitis.
Results: 35 children met criteria for inclusion in the study groups, with age of 31.6 + 46.8 months (mean + SD), and been 15 (43%) males. CSF analysis was abnormal in 15 children (13 bacterial and 2 viral). 20 children had normal CSF analysis and presented clinical evolution not compatible with meningitis (and did not received treatment for it). CSF ferritin in groups I, II and III were, respectively, 120.71 + 149, 7.36 + 0.424, and 2.64 + 2.7. Children with bacterial meningitis had higher CSF ferritin than children with viral meningitis or children without bacterial meningitis ($p<0.01$ for both). Children with viral meningitis had higher CSF ferritin than children with normal liquor ($p<0.05$). The area under the receiver operator curve for CSF ferritin as a marker o bacterial infection was 955.
Conclusion: CSF ferritin is a good diagnostic marker for meningites, with the advantage of been a single test that could be quickly for a early diagnosis of bacterial meningitis.

0645 WHAT IS THE KINETICS OF B-TYPE NATRIURETIC PEPTIDE IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY?

A Rouge[1], RV Gomes[1], MA Fernandes[1], PM Nogueira[1], LP Carvalho[1], AB Melo[1], CM Rutherford[1], C Karam[1], FG Aranha[1], R Vegni[1], LA Campos[1], HF Dohmann[1]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil

Background: The usefulness of measuring B-type natriuretic peptide (BNP) levels in the postoperative (PO) period of cardiac surgery (CS) has been frequently assessed; however, the prognostic and therapeutic follow-up value of BNP and its kinetics in the perioperative period of CS have not been well established.
Objective: To establish the kinetics of BNP levels measured in the PO period of CS, and to compare them with those in the preoperative period.
Case series and Methods: Prospective study with a classic cohort of 77 patients (pts) undergoing CS and consecutively selected between August/2003 and January/2005. Their mean age was 66.9±9.89 years, 22 (28.5%) were females, and the mean Euroscore was 4.26. The BNP level was measured in the preoperative period (BNPPre), and in the first (BNP1) and sixth (BNP6) PO hours. Hemodynamic and laboratory variables were recorded. The BNP level was quantitatively measured by use of immunofluorescence (Biosite Triage BNP Test). The results underwent statistical analysis by using the Wilcoxon Matched Pairs Test.
Results: The mean BNP levels found were as follows: BNPPre = 159.4 pg/mL ± 217.9 (MED = 79.4); BNP1 = 150.2 ± 203.3 (MED = 77.1); and BNP6 = 243.0 ± 237.0 (MED = 168.5). After analysis, no statistically significant difference was observed between BNPPre and BNP1 ($p = 0.84$); however, between BNPPre and BNP6, the difference was statistically significant ($p = 0.0004$).
Conclusion: Although the difference observed between BNPPre and BNP1 was not significant, that between BNPPre and BNP6 was. Therefore, a curve of the BNP kinetics in the PO period of CS has been established.



0646 FACTORS ASSOCIATED WITH DEATH IN PATIENTS WITH ACUTE RENAL FAILURE THAT REQUIRED RENAL REPLACEMENT THERAPY

M Espinoza, J Graf, V Tomicic
Clinica Alemana de Santiago, Santiago, Chile

Background/Objectives: Acute renal failure (ARF) is a serious complication of critical care patients, and is associated with increased mortality, especially in its more severe form that require renal replacement therapy. The aim of our study was to recognize the risk factors for death in the patients with ARF that required dialysis in our Unit.
Methods: We recorded all patients dialyzed for ARF between October 1994 and October 2004. For intermittent hemodialysis (IHD) we use a Fresenius 4008E machine. For continuous therapies (CRRT) we first used a DM 08 Fresenius machine, and since 2001, a Diapact-CRRT Braun machine with polysulfone hemofilters. Univariate and multivariate analysis was used to detect which risk factors correlate with mortality. $p<0.05$ was considered significant.
Results: A total of 179 patients were treated, 64% males, mean age 60.4 ± 20.4 years (range 15-92, median 65), APACHE II score at admission was 21.6 ± 5.4 points. Overall mortality rate was 45.2%. In a univariate analysis, factors significantly associated with increased risk of mortality were age 70 years or older (OR 1.63, 95% confidence interval 1.24 - 2.02), the need for mechanical ventilation (OR 2.62, 95% CI 1.71 - 3.53), and the treatment with CRRT (OR 1.40, 95% CI 1.03 - 1.83). There was not significant association with gender, APACHE II score at admission, surgery as a primary diagnosis of admission, presence of sepsis, use of contrast or nephrotoxins, use of vasoactive drugs and presence of oliguria. Multivariate forward stepwise analysis (model acceptance criterion, $p < 0.05$) showed that only age 70 years or older independently correlated with mortality. Over time, the outcome of patients submitted to CRRT has improved. Before the year 2001, 70.5% of patients treated with CRRT died (OR 1.60 compared with IHD). In contrast, since 2001, patients treated with CRRT had 45.7 % mortality rate (OR 1.28 compared with IHD).
Conclusions: In the patients we dialyze for ARF, the risk of death is higher in those who are older than 70 years and mechanically ventilated. The better results obtained with CRRT over time may be related to improved technology, better understanding and expanded use of this treatment.

0647 PREDICTIVE FACTORS FOR THE INCIDENCE OF PNEUMONIA AFTER CARDIAC SURGERY – CLASSIFICATION AND REGRESSION TREE

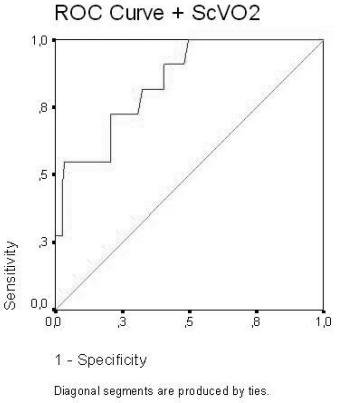
M Santos1, RV Gomes1, PM Nogueira1, MA Fernandes1, K Senna1, G Werneck3, A Rouge1, R Vegni1, LA Campos1, HF Dohmann2
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil; 3 UERJ - Brazil

Background: Nosocomial pneumonia is one of the most serious and frequent complications of the heart surgeries, being directly responsible for about 1/4 of the obits after surgeries. Objective: The objective of this study is to develop a predictive system for the occurrence of nosocomial pneumonias in patients submitted to heart surgeries. Casuistic and Methods: 1158 patients were included in this study. They were submitted to complex heart surgeries in the period between June of 2000 and August of 2002, at the Pró-Cardíaco Hospital and the Laranjeiras National Cardiology Institute, located in Rio de Janeiro. Results: The predictive models were built based in logistic regression and classification and regression tree, presenting area under the ROC curve of 72% and 76% respectively. The predictive factors included in logistic regression model were age, hospital (HPC or INCL), COPD, BMI and emergency surgery. The classification and regression tree selected included emergency surgery, weight, sex, lengh of preoperative stay, creatinine, age, ventricular function and BMI. The factor with larger hierarchical discriminating power was emergency surgery. The factors emergency surgery and age, identified in both models confirmed previous findings.The identification of high risk groups for pneumonia after heart surgeries can be useful for the definition and implementation of optimized strategies for hospital pneumonia prevention.

0649 IMPROVEMENT OF SOFA'S PREDICTIVE POWER FOR DEATH WHEN ASSOCIATED WITH CENTRAL VENOUS OXYGEN SATURATION INTERMITTENTLY OBTAINED AT THE FIRST 24 HOURS OF CARDIAC SURGERY POSTOPERATORY

RV Gomes[1], PM Nogueira[1], MA Fernandes[1], A Rouge[1], J Sabino[1], R Vegni[1], DJ Filho[1], F Nogueira[1], LA Campos[1], HF Dohmann[2], JR Rocco[3]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil; 3 UFRJ - Brazil

Background: Central venous oxygen saturation (ScVO2) as well as SOFA, has been considered important parameters for follow-up, prognostic estimate, and therapeutic target in the management of critically ill patients (pts). The association between clinical indexes and prognostic scores creating new models with a better predictive capacity would be useful in intensive care units.
Objective: To analyze the impact of ScVO2 on the postoperative (PO) period of cardiac surgery, for the in-hospital mortality predictive power of SOFA.
Case series and Methods: A classic cohort of 132 consecutive pts selected from January 2004 to August 2004 and divided into the following 2 groups: GI, death (n=11, 8.3%); and GII, survivors. Blood samples were collected through a central venous catheter properly positioned in the right atrium according to a previously validated method. The ScVO2 measurements were taken in the postoperative period as follows: immediately (SV0), after 6 hours (SV1), and after 24 hours (SV2). A mean of the 3 measurements was calculated (mSV) and identified the lower ScVO2 in each pt at the first 24 hours of PO (SVL). SOFA score was also registered at the first day of PO. In-hospital mortality was considered when death occurred at any time during hospitalization. The Student t test was used for statistical analysis, followed by logistic regression (LR), classification table and a ROC curve.
Results: Considering the total of the sample amount (132 pts), the mean SOFA score was 4,03±2,35 considering a GI value of 5,72±3 and a GII value of 3,8± 2,2 (p=0,012). ScVO2 mean values and its the Student t test results of GI compared with those of GII were as follows, respectively: SV0 54,8% ±12,6 X 65,4%±8,9 (p<0,0001), SV1 56,6%±7,3 X 68,5%±5,9 (p<0,001), SV2 61,1%±7 X 69,3%±5,3 (p<0,001), SVm 57,3%±7,8 X 67,7%±4,9 (p<0,001) e SVL 50±10% X 62,7±7,6% (p<0,001). The distribution of variation of ScVO2 was normal. After the LR and the classification table have predicted a 50% mortality, the isolated SOFA score obtained a 91,7% accuracy (AUCROC 0,683, p=0,045, CI 0,499-0,867). From all the tested variables in LR with SOFA score, the one which obtained a greater accuracy was SV2 (93,9%). A ROC curve was made using the created model (SOFA + SV2) with an AUCROC 0,846 (p<0,001, IC 0,737 – 0,954). Considering the best curve value, the model shows a sensibility of 73% and specificity of 79%, with a likelihood ratio (+) 3,52 and (-) 0,34.
Conclusions: The association between SOFA and ScVO2 collected at the 24th hour of PO creates a prognostic model with better accuracy for predicting death at the 1st day of cardiac surgery PO.



0650 REGIONAL BLOCK AND INTENSIVE CARE. FUTURE OR FLASHBACK

AVS Moll, ELA Mattos, JR Moll, FAL Lopes
Hospital Geral de Bonsucesso, Rio de Janeiro, Brazil

Background: The pain is a daily problem to be cared in intensive care units (ICU), and as strong, worst are their consequences.
Objectives: The purpose of this paper is to highlight the possibility of having the pain controlled, teaching the UCI personal to practice regional analgesia techniques.
Methods: A 34 year old man related a fall from a 30 meters platform. He developed bone fractures at the right clavicle, 4th, 5th, 6th and 7th right costal arcs, developing a severe right pulmonary injury. Conducted to the operating room (OR), was submitted to a right inferior lobectomy and had part of the 7th costal arch removed. Retuning to UCI had systemic fentanil as analgesic and couldn't be removed from the mechanical ventilator according to the frame thorax developed. On the third pos-operative day, had the thoracic wall open trough which an hematona could be seen. Returning to the OR had the 6th and 7th costal arcs stabilized with an orthopedic malleable protesis. Admitted again in the UCI, we decided to install a continuous interescalenic catheter and another one in the interpleural space. To prove the proper placement of them 20 ml of 1% lidocaine was injected in each catheter. After that every 12 hours, 20 ml of 0.25 bupivacaine, was injected alternated either in the interescalenic or interpleural catheter.
Results: The systemic analgesic drugs were cancelled and two days latter the patient had the orotraqueal tube removed, and the analgesia by the catheters was maintained three more days when it was substituted by oral drugs.
Conclusions: The regional blocks proved their efficacy in the pain control and reduced the ICU staying, suggesting the including of regional analgesia techniques in continuous educational programs design for the UCI personal.

0652 IN-HOSPITAL EVOLUTION OF PATIENTS WITH AN SCVO2 GREATER THAN OR EQUAL TO 70% IN THE POSTOPERATIVE PERIOD OF CARDIAC SURGERY

PM Nogueira[1], RV Gomes[1], MA Fernandes[1], A Rouge[1], J Sabino[1], FG Aranha[1], LP Carvalho[1], R Vegni[1], C Karam[1], LA Campos[1], HF Dohmann[2], JR Rocco[3]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil; 3 UFRJ - Brazil

Background: Central venous oxygen saturation (ScVO2) has been considered an important parameter for follow-up, prognostic estimate, and therapeutic target in the management of critically ill patients (pts).
Objective: To assess the evolution of pts with an ScVO2 ≥ 70% in the postoperative (PO) period of cardiac surgery, and to correlate that finding with in-hospital mortality.
Case series and Methods: A classic cohort of 128 consecutive pts was selected from January 2004 to August 2004. Blood samples were collected through a central venous catheter properly positioned in the right atrium according to a previously validated method. The ScVO2 measurements were taken in the postoperative period as follows: immediately (SV0), after 6 hours (SV1), and after 24 hours (SV2). The pts were divided into 4 groups as follows: GI (60 pts), none of the 3 measurements was ≥ 70%; GII (33 pts), at least one of the 3 measurements was ≥ 70%; GIII (22 pts), 2 of the 3 measurements were ≥ 70%; and GIV (13 pts), all measurements were ≥ 70%. The chi-square test was used for statistical analysis. In-hospital mortality was defined as the occurrence of death during hospitalization.
Results: In-hospital mortality in our sample was 8.6% and, in the groups, it was as follows: GI, 16.7%; GII, 3.0%; and GIII and GIV, 0%, as shown in the annexed table. After applying the chi-square test, the differences in mortality rate were significant (P = 0.023).
Conclusions: In the population studied, at least one ScVO2 ≥ 70% in the first 24 PO hours of cardiac surgery seems to have an impact on in-hospital mortality.

Groups	Alive	Death
I	83,3%	16,7%
II	97%	3%
III	100%	0%
IV	100%	0%
Total	91,4%	8,6%

0653 EPIDEMIOLOGIC SURVEILLANCE USING THE NATIONAL NOSOCOMIAL INFECTION SURVEILLANCE SYSTEM (NNISS) IN A PEDIATRIC INTENSIVE CARE UNIT OF A UNIVERSITY HOSPITAL

I Fernandes, C Travassos, J Fernandes, V Chiaratto, A Ventura, A Bousso, S Shin
Pediatric Intensive Care Unit - University Hospital - University of São Paulo

Objective: Describe the application of NNISS as the infection surveillance program of a pediatric intensive care unit
Methods: We applied the NNISS from Jan/1998 to May/2004 (6 years and 4 months). We obtained daily data related to the number of patients, vascular catheters, bladder catheters, and invasive mechanical ventilation. Cases of nosocomial infection were classified according to the definitions of the NNISS. Infections included ventilator associated pneumonia (VAP); blood stream infections; catheter related infection and urinary tract infection associated with the use of a bladder catheter.
Results: During the study period we evaluated 16326 patient days and we identified 475 nosocomial infections (29 infections / 1000 patient days). Mechanical ventilation was employed from 14 to 81% and the incidence of VAP varied from 0 to 50/1000 ventilator days. In the last 24 months the VAP rate was always less than 7.3/1000 ventilator days. The use of vascular catheters varied from 10 to 84% and the catheter related infection rate varied from 0 to 43.4/1000 catheter days. In the last 24 months catheter related infection were always bellow 10.2/1000 catheter days. The use of bladder catheters varied from 1 to 56% and the urinary tract infection rate varied from 0 to 83/1000 bladder catheter days. In the last 24 months we observed a maximum of 33.3/1000 bladder catheter days.
Conclusions: The observed rates for VAP and catheter related infections were comparable to those observed by other authors, including the NNISS report. Urinary tract infections related to a bladder catheter, however, were above those reported by others and are probably associated the higher utilization rate of bladder catheter in our ICU. A new policy for utilization of bladder catheter has now been implemented.

0654 INCIDENCE OF PRESSURE ULCERS IN NEUROINTENSIVE CARE UNIT

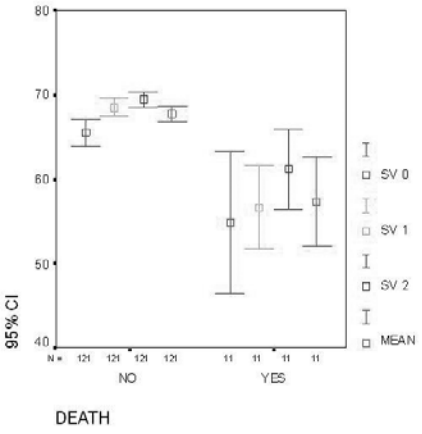
S Diccini, C Camaduro, ARC Bettencourt
Federal University of São Paulo

Background: Patients with spinal cord injuries, neurologic impairment, or advanced age are at high risk for pressure ulcers. Objective: The aim of the study was to determine the incidence of pressure ulcers in neurosurgical patients during the postoperative period in the neurointensive care unit (NICU). Methods: A prospective follow-up study was conducted in a neurointensive care unit of a university hospital located in the city of São Paulo, Brazil, in the period of November, 2002 to May, 2003. Patients with preoperative pressure ulcers were excluded from the study. The skin of patients was observed daily during the postoperative period upon discharge. The Braden Scale was used to assess risk and the pressure ulcers were classified into four stages (Stage I, II, III and IV). Results: Thirty-eight patients were enrolled, 24 (63.2%) females and 14 (36.8%) males, and the mean age was 49 years (range 20 to 78). The reason for the operation was brain tumor (26 patients), cerebral aneurysms (6 patients), arteriovenous malformations (4 patients), spinal cord tumor (1 patient) and spinal cord injury (1 patient). On admisson in the NICU, thirty-four (89.5%) patients had Braden scores ranging from 8 to 16. Six (15.8%) patients of the 38 subjects developed pressure ulcers during the study, 4 (66.7%) females and 2 (33.3%) males. Of these, 3 (50 %) patients developed a Stage I ulcers, 2 (33.3%) developed a Stage II ulcers, and 1 (16.7%) developed a Stage IV ulcer. No one developed a Stage III ulcers. Pressure ulcers developed primarily on the malleolus (33.3%), heels (33.3%), ischium (16.7%) and back of the head (16.7%). The Braden Scale had scores ranging from 8 to 14, when the patients developed pressure ulcers. The pressure ulcers developed between 11 and 55 days of NICU admission. Conclusions: The incidence of pressure ulcers in NICU was 15.8% and these results increase the challenge to nurse staff in the preventive care on the neurosurgical patients.

0655 CAN CENTRAL VENOUS OXYGEN SATURATION INTERMITTENTLY MEASURED WITHIN THE FIRST 24 POSTOPERATIVE HOURS OF CARDIAC SURGERY PREDICT DEATH?

PM Nogueira[1], RV Gomes[1], MA Fernandes[1], A Rouge[1], FG Aranha[1], R Vegni[1], C Karam[1], B Barros[1], LA Campos[1], HF Dohmann[2], JR Rocco[3]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil; 3 UFRJ - Brazil

Background: Central venous oxygen saturation (ScVO2) has been considered an important parameter for follow-up, prognostic estimate, and therapeutic target in the management of critically ill patients (pts). Objective: To analyze the impact of ScVO2 on the postoperative (PO) period of cardiac surgery, and to correlate it with in-hospital death. Three ScVO2 measurements were taken within the first 24 postoperative hours, and the overall mean was calculated. Case series and Methods: A classic cohort of 132 consecutive pts selected from January 2004 to August 2004 and divided into the following 2 groups: GI, death (n=11, 8.3%); and GII, survivors. Blood samples were collected through a central venous catheter properly positioned in the right atrium according to a previously validated method. The ScVO2 measurements were taken in the postoperative period as follows: immediately (SV0), after 6 hours (SV1), and after 24 hours (SV2). A mean of the 3 measurements was calculated (mSV). In-hospital mortality was the occurrence of death during hospitalization. The Student t test was used for statistical analysis. Results: The mean ScVO2 values of GI compared with those of GII were as follows, respectively: SV0, 54.8% ± 12.6 X 65.4% ± 8.9 (P < 0.0001); SV1, 56.6% ± 7.3 X 68.5% ± 5.9 (P < 0.001); SV2, 61.1% ± 7 X 69.3% ± 5.3 (P < 0.001); and mSV, 57.3% ± 7.8 X 67.7% ± 4.9 (P < 0.001). The distribution of variation of ScVO2 was normal. The EuroScore was as follows: in the total sample, 5.3 ± 3.6; in GI, 8.7 ± 6.1; and in GII, 5 ± 3.1 (P = 0.001). The predicted mortality was around 11%, and the in-hospital mortality was 8.3%. Conclusions: In the population studied, a lowest ScVO2 measured within the first 24 PO hours and the EuroScore were related to in-hospital death.



0657 IMPACT OF EMPIRICAL ANTIBIOTIC THERAPY AND MORTALITY IN ELDERLY WITH SEPTIC SHOCK

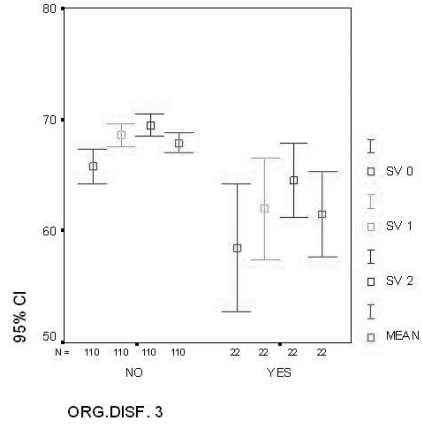
PH Godoy[1], GM Oliveira[2], MR Pantoja[1], RR Luiz[1], CE Figueiredo[2], L Solha[2], ML Brandão[2]
1 Federal University of Rio de Janeiro; 2 Prontocor Hospital

Background: There are still questions on early implementation of correct empirical antibiotictherapy and its association with the mortality reduction on septic shock.
Objective: To evaluate the impact of the use of empirical antibiotic with large spectrum on elderly mortality with septic shock in the ICU.
Methods: Prospective cohort of 67 patients over 65 years-old followed up during 32 months and pulmonary artery monitoring due to septic shock. Cultures were achieved in the first 24 hours in all patients. Besides ventilator and hemodynamic support, volume resuscitation and empiric antibiotic support with large spectrum were also employed. The choice of the antibiotics was based upon a probable community-acquired or hospital infection. The choice was considered adequate when at least one effective drug had been included in the process. Previous diseases, organic failures (Le Gall and cols criteria) and APACHE II were also evaluated. As for the statistic analysis, the t test, the chi-square and Kaplan-Meier survival curve analyses were applied considering 5% as the significance level.
Results: The average ranges were: for age (80 ± 7), for APACHE (19 ± 5), for ICU stay (18 ± 9 days), where 51% are women. Among the previous diseases one can point out systemic arterial hypertension in 40%, ischemic heart disease in 31%, stroke in 21% and the COPD in 30% of the cases. Only pulmonary septic shock happened in 70% of the cases, and in association with the urinary in 27% and only the urinary in 3%. The blood cultures were positive in 10% of the samples. The gram-negative pathogens were responsible for 79% of the infections, where 36% due to Pseudomonas.
The multi-drug resistant microrganisms represented 8% of the cultures. 39 deaths occurred during internation at ICU. The antibiotics used in the empiric form were correct in 87% of the patients and they were modified in around 72 hours when clinical worsening or inadequate antimicrobial susceptibility patterns result took place. There was no association with both age (p=0.22) and adequate empiric antibiotictherapy with mortality, but the mortality was associated with APACHE (p<0.001) and the organic failures (p=0.006). The ICU permanence time was not correlated with the use of adequate empiric antibiotics (p=0.66).
Conclusion: The adequate and early empiric antibiotictherapy was not associated with hospital mortality or with the ICU stay of elderly with septic shock. Possibly, the high level of right choices of the antibiotic scheme and its modification due to clinical failure and inadequate antimicrobial susceptibility patterns have contributed to the results.

0658 CAN CENTRAL VENOUS OXYGEN SATURATION INTERMITTENTLY MEASURED WITHIN THE FIRST 24 POSTOPERATIVE HOURS OF CARDIAC SURGERY PREDICT MULTISYSTEM ORGAN FAILURE?

PM Nogueira[1], RV Gomes[1], MA Fernandes[1], A Rouge[1], J Sabino[1], C Karam[1], B Barros[1], FG Aranha[1], LA Campos[1], HF Dohmann[2], JR Rocco[3]
1 Pró-Cardíaco Hospital - RJ - Brazil; 2 PROCEP - RJ - Brazil; 3 UFRJ - Brazil

Background: Central venous oxygen saturation (ScVO2) has been considered an important parameter for follow-up, prognostic estimate, and therapeutic target in the management of critically ill patients (pts).
Objective: To analyze the impact of ScVO2 on the postoperative (PO) period of cardiac surgery, and to correlate it with the presence of multisystem organ failure (MSOF) on the third postoperative day. Three ScVO2 measurements were taken within the first 24 postoperative hours, and the overall mean was calculated.
Case series and Methods: A classic cohort of 132 consecutive pts selected from January 2004 to August 2004 and divided into the following 2 groups: GI, with MSOF (n = 22, 16.7%); and GII, without MSOF (n = 110). Blood samples were collected through a central venous catheter properly positioned in the right atrium according to a previously validated method. The ScVO2 measurements were taken in the postoperative period as follows: immediately (SV0), after 6 hours (SV1), and after 24 hours (SV2). A mean of the 3 measurements was calculated (mSV). Multisystem organ failure on the third postoperative day was characterized by a MODS and SOFA ≥ 5. The paired t test was used for statistical analysis.
Results: The mean ScVO2 values of GI compared with those of GII were as follows, respectively: SV0: 58.4% ± 12.9 X 65.7% ± 8.40 (P = 0.001); SV1: 62.0% ± 10.2 X 68.6% ± 5.3 (P < 0.001); SV2: 64.5% ± 7.5 X 69.4% ± 5.2 (P < 0.001); and mSV: 61.5% ± 8.6 X 67.9% ± 4.6 (P < 0.001). The distribution of variation of ScVO2 was normal. In a population with an EuroScore of 5.3 ± 3.6 and predicted mortality of 11%, the in-hospital mortality was 8.3%.
Conclusions: In the population studied, ScVO2 measured within the first 24 PO hours was a marker of MSOF on the third PO day of cardiac surgery.



0659 THE ROLE OF INITIAL CARBOXIHEMOGLOBIN LEVELS IN FUME POISONING

I Previgliano, D Ceraso, E San Román, J Neira, G Fernandez, P Rossini, D Prieto, S De Francesca, P Matzkin, P Pardo, A Marino, M Rivet, G Sheean, F Villarejo, R Castagna, V Lacaze, C Grasso Fontan, C Ubaldini, C Viveros, M Rolando, V Wolanow, E Berreta
The Rockmagnon Tragedy Study Group - Buenos Aires - Argentina

Background
Carboxihemoglobin (COHb) is a good marker of CO poisoning with a cutoff point of 10% as severity inidicator. The aim of this study is to validate it in a large serie of fume poisoning.
Material and Method
Study design: Retrospective, observational. Setting: different private and public hospitals ICU´s from Buenos Aires city and suburbs. All the centers were invited to participate in the study, only three of them refuse to share the data and three didn't send data on time.
Data collected: age, sex, injuries, COHb initial levels, other toxics, initial and delayed airway lesions, ICU and total Length of Stay (LOS), mechanical ventilation (MV) days, ARDS incidence, organ dysfunction, infectious complications (early or delayed pneumonia, other infections), cultures, MRI findings, neurological status at discharge and outcome according Glasgow Outcome Scale (GOS). The relationship between COHb levels below and above 10% with ARDS, organ dysfunction, mechanical ventilation´s indication, neurological abnormalities, LOS, pneumonia and mortality was established. Statistical analysis: Student T test and Chi squared test, a $p< 0.05$ was considerer significative.
Results
Among 137 patients hospitalized in different ICU 63 were referred to public hospitals and 70 to private ones. Data was obtained from 107 patients in 33 centers. Regarding sex there were 63 males (59%), mean age 23±7 yo. COHb levels were mesured in 83 patients. Of them 44 were below 10% and 36 above. In table 1 analyis is sumarized.
Statistical significance was found for COHB and mortality (p 0.02), mechanical ventilation indication ($p < 0.01$), organ dysfunction ($p < 0.01$), ARDS ($p < 0.01$) and airway burn ($p < 0.01$). We didn´t found any relation between COHb and neurological damage, ICU LOS, pneumonia, delayed airway lesions and pneumonia.
For mortality a Likelihood Ratio + of 7.33 was calculated.
Conclusions
Although all these patients had fume poisoning due to smoke and particles, with high suspiction of cyanide exposition, COHb seems to be a good marker of poison´s severity. It was found a very important relationship between levels above 10% and the need of mechanical ventilation, developement of organ dysfunction, ARDS, airway burning and mortality. Analyzed as a diagnosis test LR+ was 7.33, highly especific.

Table 1- Main results

	COHb < 10%	COHb > 10%	p value
Mortality	1	6	0.02
Mechanical Ventilation	24	33	0.0002
ARDS	16	27	0.0006
MOF	15	25	0.001
Airway burn	20	27	0.007
LOS	11	13	0.3
Delayed airway lesions	14	16	p 0.11
Neurological damage	14	13	0.6
Pneumonia	31	22	0.3

0660 MEASURING NURSING WORKLOAD TO VERIFY NURSE: PATIENT RATIO IN A CARDIAC SURGERY INTENSIVE CARE UNIT

AJ Ducci[1], IY Whitaker[2]
1 Hospital São Paulo, São Paulo, Brazil; 2 Universidade Federal De São Paulo - São Paulo- Brazil

Background: The instruments used for measuring nursing workload in the intensive care unit (ICU) has helped nurses to manage the nurse:patient ratio, in order to reach high quality of nursing care.
Objectives: The aims of this study were to measure nursing workload in a cardiac surgery ICU using NAS (Nursing Activities Score), TISS-28 (Therapeutic Intervention Scoring System-28) and NEMS (Nine Equivalents and nursing Manpower and use Score) and, to verify nursing staff:patient ratio determined by nursing workload index and daily schedule of nursing staff in ICU.
Methods: This descriptive study was conducted in a cardiac surgery ICU of the University Hospital in São Paulo, Brazil. The data related to adult patients underwent cardiac surgery, who stayed in ICU at least 24 hours, from October to November 2004, were gathered prospectively. The scores TISS-28, NEMS and NAS were collect every day, from admission to discharge of the ICU. The number of nursing staff in each shift was obtained from the nursing schedule planning.
Results: Among the fifty five patients included in this study, 52% were male and the mean age was 62,7years (19-85; SD 12,9). The lenght of stay average was four days (1-69; SD 9,6) and the mortality rate was 7,3%. Admissions from operation room were predominant (61,82%). Two hundred and eighty three measures of TISS-28, NEMS and NAS were collected and the average scores were, respectively, 25,4 points, 24,3 points and 66,4%. Daily analysis of three instruments showed the NEMS average score was lower than TISS-28 on both months, but it was not statistically different. In a shift of six hours, the workload of staff nursing used almost four hours to take care of only one patient or 67% of total period of work. The average score of NAS was 66,4% and the need of take care of patient used from 53,7% to 72, 8% of time in six hours shift. In the morning shift was observed higher staff nursing: patient ratio and in the afternoon shift the lowest ratio. The staff nursing/patient ratio decreased on weekend and holiday. According to the index it was necessary to improve nursing staff of afternoon and night shift. Conclusions: The instruments applied in this study showed that the average time to take care one patient indicates a nursing staff :patient ratio of 1:1. In addition, this study showed that the three instruments were useful to describe real nursing workload in cardiac surgery ICU.

0662 HAS THE PATIENT'S LIFE QUALITY BEFORE ADMISSION INFLUENCE ON THE SEVERITY OF ILLNESS AND MORTALITY IN THE INTENSIVE CARE UNIT?

SSV Zanei, NP Tereran
Universidade Federal de São Paulo

Background: In recent years, growing interest in the study of quality of life (QOL) among survivors of critical illness and the QOL has been recognized as an important aspect of outcome in intensive care. However, the main focus is on the QOL after discharge from ICU. Reports on previous QOL are still rare. Little information is available related to QOL previous to the admission and its influence in the critical care as well.
Objectives: To correlate the QOL before the admission with the severity of illness, length of stay and discharge or mortality in the ICU or hospital.
Design: Prospective study.
Setting: Adult surgical-medical ICUs, Coronary Care Unit and Respiratory Care Unit in a tertiary care university hospital in São Paulo, Brazil.
Patients and Methods: The protocol for the study was approved by institutional ethics committee and informed consent was obtained from all conscious and communicative patients. From September to November 2004, 91 adult patients (> 18 years) were interviewed within the first 72 hrs of ICU admission. Patients were excluded if they were unable to communicate (comatoses, confuses or with sedation and intubated) or refusal. Demographic and clinical data and the severity of illness by Acute Physiology, Age and Chronic Health Evaluation (APACHE II) were recorded on admission. The quality of life before admission was assessed by using the Medical Outcomes Study 36 item Short Form General Health Survey (SF-36) questionnaire which measures the health-related quality of life. The SF-36 includes eight multi-item dimensions related to both physical and mental health. A score ranging from zero to 100 is calculated for the eight scales. Higher scores indicate better health-related quality of life. After patients interview a follow-up was performed to know about their evolution (discharge or dead in the ICU or hospital ward).
Results: During the study period, there were 91 eligible admissions: 54.9% men, mean age 55.8 (SD 16), 59.3% medical and 40.7% surgical patients, most of them had cardiovascular, respiratory or gastrointestinal problems. The mean length of stay (ICU) was 4.3 (SD 6.6) days and the APACHE II was 10.2 (SD 4.2). The general mortality rate was 3.3% (2 patients died in ICU). The mean SF-36 dimensions scores for medical and surgical patients were Physical Functioning (57.8 SD 31.6), Role Physical (32.4 SD 40.1), Bodily Health Pain (53.0 SD 33.3), General Health (63.2 SD 26.2), Vitality (59.6 SD 24.1), Social Functioning (56.2 SD 30.6), Role Emotional (54.6 SD 46.5), and Mental Health (60.3 SD 26.1). Considering the severity of illness, length of stay in ICU and in hospital, there was no association between the variables and scores of QOL dimension, applying Pearson linear correlation coefficient.
Conclusions: The results did not permit to confirm the association between QOL and discharge conditions from ICU or from hospital in the sample of this research. It is important to consider that the limitation of this study refers to short period of data collection and the clinical conditions of patients.

0663 MORTALITY DUE TO TRAUMATIC BRAIN INJURY IN AN INTENSIVE CARE UNIT OF A TRAUMA CENTER

H Gomez Fernandez, H Bianco, S Orue, R Simon, F Alderete, O Guanes, C Diaz, O Paredes
Centro de Emergencias Medicas - Asuncion - Paraguay

Objectives: Identify mortality risks factors in an adult population with TBI in an Intensive Care Unit (ICU).
Methods: It is a retrospective and descriptive study, analyzing mortality risk factors in 410 reviewed charts, from September 1999 to May 2003. Data were analyzed in EpiInfo 2002, and results were expressed in percentage and mean values. Mortality risks factors were consider significative with a p< 0,05, expressing also the OR and ranges, and utilizing an interval confidence of 95%.
Results: The mean age was 32,4 years old ± 15,8 (15-96).44,4% of which were between 15 and 24 years old. Males were affected in 84,1%. 26,9% arrived at the hospital within the first hour of trauma, transported by Public Health ambulances in 72,3%. Blunt was the mechanism of trauma in 84,6%, involved in motor vehicle accident in 66,4%. Initially Glasgow Coma Scale was <8 in 64,4%, and haemodynamically stability in 64%. CT Scan images were: diffuse edema in 52%, diffuse axonal injury in 51,8% and hemorrhagic contusion in 29,3%. 38,6% underwent craniotomy. Patients were connected to a ventilator for a mean day of 7,9 ± 8 (1-60); 25% received inotropic, for a mean day of 3,3 ± 6 (1-45). The ICU length of stay was a mean of 9,2 days ± 9,8 (1-78), with a complication rate of 38,7%, being pneumonia 43%. The mortality rate was 48,3% (198 patients). Mortality risks factors were detected utilizing univariate analysis: GCS <8; firearms; >44 years old; haemodinamically compromise on admission; use of inotropic; epidural hematoma; cerebral edema; hemorrhagic contusion; ICU complication; pneumonia and sepsis. Utilizing multivariate analysis, there where two predictive factors for prognosis: inotropic needs; p=0,001, OR=13,6 (5-33) and GCS<8: p=0,001, OR=3.
Conclusion: It was found an elevated frequency of TBI in young male adult, involved in motor vehicle crashes, with a relatively prolong prehospital time and high mortality. Ten significative mortality risks factors were identified, two of them, identified by multivariate analysis.

0665 NOREPINEPHRINE INFLUENCE ON MORTALITY IN ELDERLY WITH SEPTIC SHOCK

PH Godoy[1], GM Oliveira[2], MR Pantoja[1], RR Luiz[1], R Machado[2], A Farias[2], W Teixeira[2]
1 Federal University of Rio de Janeiro; 2 Prontocor Hospital

Background: It is still controversial the norepinephrine use on septic shock treatment due to excessive vase constriction followed by tissue low perfusion.
Objective: To analyze if the use of norepinephrine is associated with the higher mortality in elderly with septic shock in the ICU.
Methods: Prospective and observational study. Cohort with 67 patients with septic shock aged over 65 and monitored with catheter in the pulmonary artery and in peripheral vases (radial and femoral) within 32 months. All patients used ventilator support, large spectrum antibiotic empiric support and volume resuscitation. If the systolic pressure was held ≤70mmHg, then 5µ/Kg/min of dopamine would be applied with a rate of 20 µ/Kg/min followed by 0,1 µ/kg/min of norepinephrine that was progressively increased up to 10 µ/kg/min. Dobutamine was included whenever a cardiac failure happened. The following parameters were evaluated: APACHE II, the presence of organic failures (Le Gall and cols- Crit Care Med 1982; 10: 575-7), troponin I blood levels, ICU stay, primary site of infection, the use of dopamine, NA and dobutamine. In the statistic analyses, T test, ANOVA and Kaplan-Meier survival curve analysis with a 5% significance level were employed.
Results: The average age was 80 (66-96), 51% of whom were women. The APACHE II average was 19 ± 5 and the average ICU stay was 18 ± 9 days. 39 (58%) deaths occurred in the ICU. The pulmonary sepsis was frequent in 70% of the patients. The pulmonary and cardiac failures occurred in 69% and 46% of the patients, respectively. The troponin I was positive in 33% of the cases. All patients were treated with norepinephrine and dopamine (dobutamine + norepinephrine in 12%). The APACHE II (p=0,001), the number of organic failures (p=0,005), the dose ≥0,5µ/Kg/min of norepinephrine (p= 0,0001), and the ICU stay (p=0,001) were associated with mortality. The amine use (norepinephrine -p=0,179; dobutamine - p=0,72; dopamine - p=0,08), the infection site (p= 0,093), and the age (p=0,221) did not present correlation with death. There was no correlation with the cardiac failure (p=0,541), but with the organic failure number and the use of norepinephrine
(p< 0,001).
Conclusion: The use of norepinephrine did not have association with mortality, except for doses equal to or higher than 0,5µ/Kg/min and in the cases with the presence of two or more organic failures in elderly with septic shock.

0666 HEMODYNAMIC ASSESSMENT BY TRANSPULMONARY THERMODILUTION DURING SUSTAINED HIGH AIRWAY PRESSURE IN PIGS

V Tomicic, J Graf, E Rodriguez, M Espinoza, JM Montes, J Abarca, C Canals
Clínica Alemana de Santiago-Universidad del Desarrollo.Santiago de Chile.Chile

Introduction: High level of PEEP has been used to recruit collapsed alveoli, however, such ventilatory therapy may decrease cardiac output by reducing venous return and ventricular filling, resulting in significant hemodynamic compromise. Filling pressure variables are traditionally used to estimate cardiac preload, but it has become increasingly clear that they can be poor predictors of preload status during positive pressure ventilation. Transpulmonary thermodilution (PiCCO System, Pulsion Medical System, Munich, Germany) gives a volumetric approximation of cardiac preload by the intrathoracic blood volume (ITBV) and an estimate of extravascular lung water content (EVLW). These variables have not been studied under sustained lung inflation with high airway pressures. Our aim was to describe the effect of sustained high airway pressures on ITBV and EVLW as compared with traditional hemodynamic variables.
Methods: Healthy, anesthetized, paralyzed and mechanically ventilated pigs (n=4) mean weight 42.5 ± 8.1 Kg were studied. A central venous catheter was inserted via the jugular vein and an arterial catheter for transpulmonary thermodilution into the femoral artery (Pulsiocath PV2015L13; Pulsion Medical System, Munich, Germany). In basal conditions pigs were ventilated for 30 min. in control volume mode with tidal volume 10 mL/Kg, respiratory rate 20 bpm, inspiratory time 33%, ZEEP and FiO2 100%. The ventilator was then switched to CPAP mode at 30 and 40 cm H2O for 1 min. Between both levels of pressure we returned to the basal ventilation setting for 15 min. Measurements of HR, MAP, CVP, CO, ITBV and EVLW were obtained at each step (basal, CPAP 30, CPAP 40). Cardiac output, ITBV and EVLW were indexed by body weight. Hemodynamic parameters, ITBVI and EVLWI in each step were compared by ANOVA for repeated measures and the Bonferroni test for multiple comparisons. ITBVI, CVP and cardiac index (CI) was correlated by linear regression analysis. Data are presented as the mean ± SD. P <0.01 was considered significant. Results: Compared with basal, both CI and ITBVI decreased during CPAP 30 and 40 cm H2O, CI: 8.6±1.0, 4.0±0.2, 3.3±0.9 mL/min/Kg and ITBVI: 15.8±1.1, 11.3±0.6, 9.5±2.1 mL/Kg (p<0.01). Compared with basal, CVP increased during CPAP 30 and 40 cm H2O, 2.8±1.3, 7.7±1.6, 10.7±0.7 mm Hg (p<0.01). There was no difference between both levels of CPAP. Heart rate and EVLWI did not change along the study. Mean arterial pressure had an important but not significant decrease, 97±17.6, 54.3±8.3, 49.7±20.9 mm Hg (p= 0.057). A good positive correlation between ITBV and CI was found (n=12; R=0.87; p<0.01). A good negative correlation between CVP and CI was found (n=12; R= - 0.86; p<0.01). Conclusions: The application of sustained high airway pressure has an important impact on hemodynamics. Since ITBVI and CI decreased in the same extent, ITBVI may be considered a better estimator of preload than CVP in this setting. Despite ITBVI and CI decreased, EVLWI did not change suggesting that this is an independent variable.

0667 SEVERE TRAUMA PATIENTS ADMITTED IN AN INTENSIVE CARE UNIT

H Gomez Fernandez, H Bianco, S Orue, G Benitez, M Mendoza, C Diaz, O Paredes, O Paredes
Centro de Emergencias Medicas - Asuncion - Paraguay

Objectives: Determine epidemiologic, demographic and clinical aspects of multi-traumatized patients admitted to an ICU.
Methods: It is a retrospective, observational and analytic study, based on 388 charts reviewed, from January 2000 to June 2003. Data were expressed in percentage and mean values. Mortality risk factors were consider significative with a p< 0,05.
Results: The mean age was 33,5 years old ± 14,8 (15-96), 84% of which were males. 53,7 % came from urban areas. Timing between trauma and emergency room were within 1 to 6 hours in 33% of the cases, and within 6 to 12 hours in 34%. Timing between emergency room and ICU were within 1 to 6 hours in 37% of the cases, and within 6 to 12 hours in 18%. Blunt was the most frequent mechanism of trauma (68%), 51,5% caused by motor vehicle accidents, 18,6% by firearms, and 12% by stab wounds. Mean Revised Trauma Score was 10,2 ± 1,96 (1-12), and mean Glasgow Coma Scale was 10, ± 4,1. Anatomic locations of trauma were 67,5% craneoencefalic, 25,5% thoracic, 21,1% abdominal and 17,8% limbs. Most of the patients (69,2%) underwent surgery: 28% craniotomy, 17% laparotomy and 12,9% thoracotomy. Ancillary studies were done in: 90,2% X-rays, 50,3% Ultrasounds and 70,4% CT Scan. Inotropics were use in 45,4%, blood transfusion in 60,5% and ventilator in 91%; for 8,1 mean days ± 7,7 (1-58). Morbidity affected 131 patients (54,1%) 25,5% infectious related (pneumonia and peritonitis) and 10,8% not related to infections. 13,7% of the patients required re-operation. Mortality was 40,3% in ICU and 11,5% more on discharged. Significative mortality risk factors after ICU discharged, evaluated by univariate analysis, were: use of ventilator, ICU complications, inotropics, re-operations. None of them were confirm by multivariate analysis. Mortality risk factors after hospital discharged were: use of ventilator and inotropics; these were not significative by multivariate analysis.
Conclusion: This study revealed a young male adult population, victims of motor vehicle crashes and firearms or stab wounds injuries, with a high mortality. Craneoencefalic and torso trauma were the most, 69,2% of which underwent surgery. There were four prognostic factors in ICU. None of them were confirm by multivariate analysis.

0668 ENTERAL NUTRITION IN SEPTIC SHOCK IN THE ELDERLY: DO THE TIME ELAPSED UP TO THE START AND THE ACHIEVED BASAL ENERGY EXPENDITURE INTERFERE IN MORTALITY ?

PH Godoy[1], GM Oliveira[2], E Lameu[2], RR Luiz[1], R Machado[2], BT Mattos[2], M Brandão[2]
1 Federal University of Rio de Janeiro; 2 Prontocor Hospital

Background: The earliest start point of the enteral nutrition (EN), as well as the basal energy expenditure (BEE) achieved in a time space as short as possible seem to benefit a good amount of critical patients.
Objectives: To analyze the time to start the EN and the BEE achieved in the elderly interned with a septic shock diagnose and to verify the association with mortality in these patients.
Methodology: Prospective cohort hold within 32 months and with 67 patients over 65 years-old in ICU with septic shock where 59 of those had EN. The APACHE II score was carried out in every patient. The following variables were analyzed in this group: the time taken to start the NE, the BEE (achieved or not), the time to reach the BEE in those who got it. These variables were correlated with death and it was still observed if there was correlation between the start time point of EN and the achieved BEE. The statistics tests used were: T test and chi-square, considering 5% as the significance level.
Results: The average age was 80 + 7 (min.= 66, max.= 96), the APACHE II average was 18 + 5 (min.= 8, max.= 28), and the time average to start EN was 80 ± 53 h (min. de 12 h e max. de 240 h). The achieved BEE occurred in 69,5% (n= 41) of the patients and the time average to reach it was 115 ± 56 h (min. de 72 h e max. de 360 h). Death was associated with time to start EN (p= 0,001) and with the non-achieved BEE (p< 0,001). However, there was no correlation with time to reach BEE (p= 0,22). The time to start EN did not show association with the achieved BEE (p= 0,08).
Conclusions: The EN initiated as soon as possible and the BEE when achieved in this group of patients showed some benefit. The time to achieve the BEE seems not to have correlation with mortality in these patients. The time to start NE did not have association with the BEE achieved in this sample.

0670 RESPIRATORY SYNCYTIAL VIRUS (RSV) MORBIDITY AND CLINICAL CHARACTERISTICS OF CHILDREN ADMITTED TO PICU IN SOUTHEAST BRAZIL

OAL Cintra, MACT Cintra, APP Carlotti, MAI Feitosa, KZ Silva, FE Paula, AE Santos, ML Silva, CA Sobrinho, E Arruda
University of São Paulo School of medicine at Ribeirão Preto – São Paulo State - Brazil

Background: RSV is the single most important agent of lower respiratory tract infections (LRTI) in children less than 1 year old. Recently a prophylaxis with monoclonal antibodies is available for high-risk children such as pre-term babies. Our goal was to describe the overall morbidity associated with RSV infections and describe clinical aspects of children admitted to PICU in a developing country. Methods: RSV was detected in nasal aspirates by immunofluorescence, in children with acute lower respiratory tract infections hospitalized in a university hospital during the 2004 RSV season. Clinical and laboratory data in children with RSV infections were reviewed emphasizing patients admitted to PICU. Results: Of 309 collected samples, 91 (29.4%) were RSV positive, with monthly variation ranging from 20 up to 50% for RSV detection and peak in April. Overall positive cases 64.8% (59/91) were male and 80.2% (73/91) with age less than 9 months old. At least one risk factor was detected in 31.9% (29/91) and prematurity was the most frequent (17.6% = 16/91). Bonchiolitis (59.3% = 54/91), hospitalization for 6 to 10 days (48.3% = 44/91), supplemental oxygen (68,1% = 62/91) for 3 to 10 days (75,8% = 47/62) were the most important clinical aspects. Six children (6.5% = 6/91) were admitted to PICU. Of these children male gender was more frequent (4: 2 = boys:girls) and all have less than 6 months old (age range 2 – 5 months, average 3m) Four patients have risk factors and of these 2 were pre-term. Length of PICU stay was 2 to 28 days (average 10.5 days). Three patients required mechanical ventilation and 2 CPAP. All children received bronchodilators, corticosteroids and antibiotics at any point of during hospital stay. The average length of hospitalization was 25.8 days (range 7 to 65 days). Conclusions: RSV morbidity is high and represents one-third to half cases of LRTI admitted to hospital. High-risk children were more frequently admited to PICU, and prematurity is the most frequent risk factor. In developing nations the requirement of mechanical ventilation or CPAP are the reasons for PICU admissions. Based on this small series the evaluation of RSV prophylaxis and treatment should be consider in high-risk children evolving multicenter studies in developing nations.

0671 OXYGEN CONCENTRATORS VERSUS BULKED CRYOGENIC OXYGEN

AVS Moll, JR Moll, LEP Silva
Hospital Geral de Bonsucesso

Introduction: Transportation difficulties be it due to climatic conditions or bad highways, as well as the absence of cryogenic plants in some countries, levered the use of oxygen concentrates in Canada and in various regions of Africa and Asia. Having in the past years also finding their way in the battle fields. The Royal Navy Hospital ships were equipped with it, was also used in the Gulf war and in the Bosnian conflict. Humanitarian missions used it in the project for lip cracks and palate in Uganda; it was donated by the Red Cross to the Palestine population and used in Iraq. The large margin of gain of the distributors of oxygen in developing countries motivated the installations of oxygen concentrated mills, in the centralized hospital distribution systems, as a primary source of supply.
The objective of this paper is to compare the cost of the cryogenic oxygen used in a large hospital with the oxygen (O2 93) produced by oxygen concentrates (PSA)
Methodology: Having received approval by the Internal Review Board, the authors, raised through invoices, the cost paid and the volume of cryogenic oxygen supplied (O2) during the year prior to the installation of the PSA in the hospital. Considering that the composition of the monthly cost of the O2 93 is obtained by the sum of the costs of the maintenance contracts of the PSA, back up costs of O2, and electricity used, also from the invoices were registered, the costs and volume of gas produced, month by month, during the 10 years after the installation of the PSA in the hospital. Monthly and yearly average expenses were obtained and compared, as well as the average price per cubic meter of the O2 and the O2 93, were evaluated, having been considered a significant statistical difference p <0,05.
Results: 1) The average monthly cost of the O2 was of US 98,104.83 (SD - 52,287.42) the yearly cost of US 1,177,257.96 and the average cost of the cubic meter US 10.26 (SD – 2.65). 2) The average monthly cost of the O2 93 was of US 22,432.61 (SD 6,782.57) the average yearly cost of US 269,191.34 and the average cost of the cubic meter US 1.52 (SD 0.48). 3) The analysis showed a significant statistical difference between the values, being inferior all related to the O2 93. 4) The accumulated economy in the period taking into consideration the average values paid by O2 93 and the O2 used before was of US 19,538,457.94.
Conclusion: The cost paid for the O2 93 is inferior to that of the O2, generating a great economy for the hospital.

0672 NONINVASIVE POSITIVE-PRESSURE VENTILATION IN PATIENTS WITH RESPIRATORY FAILURE AFTER EXTUBATION

V Tomicic, J Molina, JM Montes, M Espinoza, J Graf, JE Keymer, P Antequera, J Mora, J Abarca, C Canals
Clinica Alemana de Santiago and Facultad de Medicina, Universidad del Desarrollo, Santiago, Chile

Introduction: Reintubation of patients who develop respiratory failure after extubation (RFAE) is associated with high mortality. Nowadays there is evidence that non-invasive positive-pressure ventilation (NPPV) is unable to avoid reintubation in these patients. However, this technique requires highly dedicated team and it depends on the equipment capabilities. Our aim was to evaluate the efficacy of the NPPV to prevent reintubation in patients who develop RFAE.
Methods: We included all patients with acute non-obstructive respiratory failure who underwent mechanical ventilation for more than 48 hours that were admitted to our unit between June 2003 and January 2005. All of them underwent a spontaneous breathing trial (SBT) for up to two hours (PS= 10 cm H2O and PEEP= 5 cm H2O). Patients who successfully tolerated SBT were extubated and followed up for 24 hours. RFAE was defined as the occurrence of at least two of the following criteria: respiratory rate > 35 bpm, use of accessory muscle, saturation < 90% with FiO2 >50%. Patients with RFAE were placed on NPPV (Bi-PAP Vision™ with full facial mask). During NPPV we evaluated every two hours the clinical condition (respiratory rate, use of accessory muscles, mental status, and saturation) and arterial blood gases when available. The patients were reintubated if the clinical condition became impaired, or there was no improvement of pH, or PaO2 was < 60 mmHg with high FiO2.
Results: Seventy two patients, mean age 56.8 ± 20.3 years, mean APACHE II on admission 16.3 ± 5.9 were extubated successfully. Sixteen of them developed RFAE and were placed on NPPV (22.2%). The mean time from extubation to NPPV connection was 2.64 ± 1.49 hours. Thirteen patients (81.2%) with RFAE were successfully supported with NPPV for 4.07 ± 3.75 days and were not reintubated. Three patients were reintubated after being on NPPV for 9.6 ± 4.1 hours.
Conclusions: Our data suggest that NPPV, when managed by a high trained team and appropriate equipment, is able to rescue the patients who develop RFAE avoiding the reintubation.

0673 INCIDENCE AND EVOLUTION OF AGING PATIENTS IN A INTENSIVE CARE UNIT

AG Albuquerque, AL Gouvea, OC Neto, H Falcão
Surgical Intensive Care Unit – Quinta D'or Hospital – Rio de Janeiro – RJ / Brasil

BACKGROUND: In the last decades, the life expectancy of the brazillian population has improved, being today, around seventy six years old. In the same way, the quality of life, the productivity and the ability to perform daily activities of these geriatric people are getting better than a few years ago. Therefore, it means a higher incidence of degenerative disease, heart and cerebro-vascular diseases and neoplasms, involving a greater percentage of hospitalization of patients older than 65 years old and surgical procedures done in these patients. Mackenzie et al (J Trauma 1990;30:1046) showed that older patients – with represent less than 1/8 of U.S. population – consume 1/4 of trauma and critical care resources, due to longer hospitalization, more comorbidity and more nosocomial infections. In contrast, Chelluri L et al (Arch Int Med 1995; 155:1013–1022) indicated that advanced age alone do not predict a bad evolution in ICU
OBJECTIVE: in this paper, we describe the demographics dadas of 846 inpatients of a surgical ICU between july/2003 and december/2004, taking into account gender, age, length of stay, death inside ICU, APACHE, type of surgery for all adults (18-64 years old) and for elderly people (>64 years old).
METHODS: direct consult to the inpatient charts. The statistical analysis used was Q square test to contrast both groups.
RESULTS

	Total	Age	GENDER (male/female)	APACHE	Length of stay	Mortality
ADULTS	435 (51%)	18-64 (47)	192/243	0-25 (7)	1-180 (4,2)	5 (1,15%)
AGED	411 (49%)	65-97 (75)	198/213	4-33 (11)	1-75 (4,5)	8 (1,94)
P	NS	<0,05	NS	<0,05	NS	NS

The types of surgery, respectively, among adults and aged: abdominal (158 x 119); neurosurgery (69 x 38); ortophedic (68 x 78); vascular (48 x 104); thorax (37 x 16); urologic (23 x 33); head and neck (14 x 12); gynecologic (12 x 2) and others (5 x 2).
CONCLUSIONS: The median APACHE of older patients was statisticaly higher than the adults, however this did not result on a longer stay neither on a heigher mortality while in our surgical ICU.

0674 SIMPLE MODEL FOR PREDICTION OF MORTALITY IN ELDERLY PATIENTS WITH SEPTIC SHOCK

PH Godoy[1], GM Oliveira[2], MR Pantoja[1], RR Luiz[1], R Machado[2], J Regalla[2]
1 Federal University of Rio de Janeiro; 2 Prontocor Hospital

Background: The number of elderly patients with septic shock has increased in the last years making it important to investigate the existence of prognostic factors in this population.
Objective: This study aimed to develop a simple prognostic model of mortality in elderly patients with septic shock hospitalized at a Medical Intensive Care Unit (ICU).
Methods: Prospective cohort of 67 elderly consecutive patients (age over 65 years), within a 32-month period having their pulmonary artery monitored due to septic shock. The logistic regression model employed death as dependent variable and as independent variables those with p-values highly significant in the univaried analysis: APACHE II, the presence of previous cardiovascular diseases (systemic arterial hypertension, diabetes mellitus, stroke and chronic coronary insufficiency), positive troponin I, the need of noradrenalin in doses from 0,5µ/Kg/min over and the number of organic failures according to Le Gall's criteria. Variables were dichotomized and added one by one to the model. Only APACHE II and previous cardiovascular diseases remained in the end. The statistical package SPSS 10 was employed having 5% as significance level.
Results: The patients presenting previous cardiovascular disease and APACHE II from 20 over had 85% of probability of death and those presenting previous cardiovascular disease and APACHE II below 20 had 74% of probability of death during the hospitalization at ICU. Those with APACHE II below 20 and with no previous cardiovascular disease had only 5% of death.
Conclusion: The presence of previous cardiovascular disease should be included in the models to predict the probability of death in elderly patients with septic shock. This simple model shall be expanded and applied to a similar cohort for validation thereof.

0675 EFFICACY AND SAFETY OF LEVOSIMENDAN USE IN ELDERLY PATIENTS WITH CONGESTIVE HEART FAILURE

F Braga, C Musa, S Sá Jr, J Kezen, F Alvim, I Gottilieb, L Danc, PP Sampaio, M Villa-Forte, B Bibas, J Mansur
Hospital Samaritano, Rio de Janeiro, RJ, Brasil

Background: Congestive heart failure (CHF) is a leading cause of hospital admissions, and is highly prevalent in the elderly population. In this group of patients, CHF is associated with greater than 50% in-hospital mortality, which is partly due to under-utilization of modern pharmacological therapies. Levosimendan (LE) is a new inodilatory, calcium-sensitizer drug that has favorable cardiovascular properties and appears to be devoid of the detrimental effects of conventional inotropes. However, only scarce data are available as to its utilization in elderly patients.
Objectives: To evaluate the safety and efficacy of LE use in patients 75 years admitted to a Coronary Intensive Care Unit (CICU) in Brazil.
Methods and Results: Out of 48 LE-treated CHF patients, 29.1% (14/48) were 75 years (mean 80.64±7.82 years). The etiology of CHF was ischemic in 11/14 (78.5%), and CHF was acute in 2/14 (16.6%). The mean time of LE infusion was 43.8±30.05 hours. Only 2/11 patients (16.6%) received an initial bolus dose of LE (6 g/Kg within 10min). The mean maintenance dose of LE was 0.08±0.04 g/Kg/min. During infusion, 7/14 patients (50%) developed arterial hypotension, which resolved after temporary cessation of the infusion. However, out of 613 systolic blood pressure (SBP) measurements in all 14 patients, only 2.61% (16/631) were <90mmHg and occurred in a patient who was receiving concomitant norepinephrine infusion. Urinary output increased by 70.26% (from 90ml/h to 153.3ml/h within the first 12 hours of LE therapy [p<0,001]) despite similar doses of diuretics. Serum-natriuretic peptide levels were reduced by 79.7% (1,405pg/dL before, 284pg/dL after LE use, p=0.01l). One patient (8.3%) died during the hospital stay. Ten patients (71,4%) were discharged home.
Conclusion: In this retrospective study, Levosimendan use appeared to be safe and effective in the challenging population of hospitalized elderly patients with CHF.

0677 CORRELATION BETWEEN THE BRAIN NATRIURETIC PEPTIDE AND CARDIAC BIOMARKERS

J Bono, L Martinez Riera, O Kiener, R D'elias
Allende Hospital

Background: Cardiac biomarkers play an important role in the risk stratification and choice of treatment in patients with acute coronary syndromes (ACS). Objective: To asses the correlation between cardiac biomarkers of injury and inflammation with Brain natriuretic peptide (BNP). Methods: We study consecutive and prospective
103 patients(p) who were admitted in the coronary care unit of Allende Hospital with an ACS. The were 60 men (66%) of 63±12,6 years old. There were assessed whit T Troponine (TnT), Total CK and MB isoform, fibrinogen, C reactive protein and BNP. According with EKG the p. were divided in ACS ST segment elevation (31 p.) and without ST elevation(72p), of them, 40 p. had TnT >0,1 ng/ml. 32 p had unstable angina and 8 had Tnt levels <0,1 ng/ml. We used Test of correlation of Pearson, Chi square with correction continuity of Yates and exact test of Fisher. Results: We verify a direct, lineal and significative correlation between BNP values and TnT>0,01 ng/ml at 24 hours of admition (r=0,387)(p>0,001). With values of TnT<0,1 the correlation were weaker (r=0,216)(p=0,066). We also observed that 54,9% of p. with TnT>0,1 ng/ml and only 6,3% with TnT<0,1 had values of BNP>526 ng/ml (2,5 times the value expected for the age). (ROC curve 0,759 IC 95%, 0,66-0,86; p<0,001). We didn't observe correlation with total CK, but we did with MB isoform (r=0,209)(p=0,041). We verify a direct, lineal and significative correlation between BNP values and CRP (r=0,378)(p<0,001) with fibrinogen (r=0,321)(p=0,006) and white cells (r=0,378)(p<0,001). Conclusions: There is a correlation between BNP and injury and inflammations markers in p. with ACS.

0679 APICAL BALLOONING IN CRITICAL CARE

JE Ubaldini, GN Medina, JA Alvarez, G Leiva, MH Perez, MA Veltri, O Manuale, G Ferrari, FJ Chertcoff
Hospital Britanico de Buenos Aires

Background: the syndrome of apical ballooning (Tako-tsubo, stress induced myocardiopathy) or transient ventricular dysfunction has been described initially in Japan, but few cases have been reported in Western countries.
Patients and methods: from January 2003 to December 2004 six patients were admitted to our ICU with clinical suspicion of acute myocardial infarction (AMI). All of them had ST elevation in anterior leads and positive serologic markers for AMI. Myocardial echocardiography during the acute phase demonstrated apical ballooning and basal hyperkinesis.
Results: the six patients were females with an age range from 56 to 81 years old. Emotional and physical stress were observed in all.
No significant stenosis in epicardial coronary arteries was observed. The Recurrence Index was greater than 16 % in only one patient and left ventriculography showed very extensive apical akinesia in all.
Ejection Fraction was: 15% in 2 patients, 25% in 2, 30% in1 and 40% in the other.
Three patients were admitted with acute pulmonary edema, and one of them died in cardiogenic shock. Five patients survived and in them the ECG and the echocardiogram normalized in three weeks.
Conclusions: severe emotional and physical stress can precipitate severe, but frequently reversible acute myocardial dysfunction in patients without coronary disease. Occasionally one of them dies because of irreversible myocardial failure.
The etiology of this syndrome is suspected to be exaggerated sympathetic stimulation.

0680 FORGOING LIFE SUPPORT TREATMENT IN THREE PICU IN SOUTHERN BRAZIL IN A PERIOD OF 14 YEARS

PM Lago[1], JP Piva[2], PC Garcia[2], DJ Kipper[2]
1 Pediatric intensive Care Unit- Hospital de Clinicas de Porto Alegre - Brazil; 2 Pediatric intensive Care Unit- Hospital São Lucas da PUCRS - Brazil

Background: During last years the process of dying in Pediatric Intenisve Care Unit has being matter of discussion. In consequence of this fact, the rate of Life Support Limitation has being increasing in several countries. Few data are reported related to this subject in Latina America.
Objectives: To describe the evolution of modes of death and factors involved in the decision-making process related to life support limitation in three universities-affiliated pediatric Intensive care units (PICU) in Southern Brazil, during 14 years (1988, 1998 and 2002)
Methods: We performed a cross-sectional study based on a retrospective chart review of all deaths occurred in 1988, 1998 and 2002 in three distinct PICU in Porto Alegre (Brazil), conducted by three previously trained investigators from each unit (Kappa 90%). General characteristics, modes of death (failed cardiopulmonary resuscitation, brain death, do-not-resuscitate orders, withholding or withdrawing life-sustaining treatment, with the last three modes classified as the life support forgoing group); length of hospital stay, end-of-life plans, as well as family and Ethics committee participation were studied. The Student t test, Mann Whitney, Chi square, Odds ratio and multivariate analysis were used for comparisons.
Results: The medical charts of five-hundred and one death were reviewed (129/1988, 222/1998, 150/2002). The mortality rate was similar among the three PICUs (9,5%). There was a significant increment ($p < 0,05$) in the rates of life support limitation (LSL) over the time (6% in 1988, 15.8% in 1998 and 36% in 2002). The most frequent practice for LSL was do-not-resuscitate orders (70%). In 2002 approximately to 53% of deaths in PICU still received full cardiopulmonary resuscitation. The involvement of the family and the Ethics Committee in end-of-life plans was observed in less than 20% of cases in 1988, 1998 and 2002 (without statistical significance).
Conclusions: We observed that the modes of deaths in southern Brazillian PICUs changed over the 14 years studied, with an important increment in LSL. However Cardiopulmonary resuscitation is still offered more frequently than observed in Northern hemisphere countries. Moreover life support limitation is preferably offered through "do not resuscitate" orders. These findings, along with the low participation of families in the decision-making process reflect the difficulties relative to end-of-life decisions encountered by the intensive care professionals in Southern Brazil.

0681 LUNG MECHANICS AND PULMONARY FUNCTION AFTER POLYETHYLENEGLYCOL ADDITION TO THE EXOGENOUS SURFACTANT IN AN EXPERIMENTAL MODEL OF ARDS

NA Freddi[1], LB Haddad[1], RM Manzano[1], AR Fernandes[1], T Mauad[2], FS Rossi[1], FAC Vaz[1], CM Rebello[1]
1 Pediatrics Department, University of Sao Paulo, Brazil; 2 Pathology Department, University of Sao Paulo, Brazil

Background: Although ARDS have been associated with qualitative and quantitative pulmonary surfactant dysfunction, the replacement have not been associated with sustained improvement in lung function or reduction in mortality rates. Polymers like polyethyleneglycol (PEG) are known to reduce surfactant inactivation.
Objective: To evaluate the improvement in lung mechanics and pulmonary function with the addition of PEG to a surfactant used to treat ARDS.
Design/Methods: After obtaining an experimental model of ARDS submitting New-Zealand-White rabbits to lung lavages, animals were randomized to two study groups, according to the type of surfactant used for
treatment: Curosurf (100 mg/kg Curosurf -Farmalab Chiesi Pharmaceuticals) or PEG (Curosurf, 100 mg/kg additioned with 5%PEG - mass/vol). Dynamic compliance (DC), ventilatory pressure, blood gas analysis, and hemodynamic data were obtained during 4 h ventilation with FiO_2, 1.0; respiratory rate, 50, PEEP, 8 cmH_2O, and inspiratory pressure necessary to obtain a target tidal volume (Tv) = 10 ml/kg. After sacrifice, a quasi-static PV curve was performed (pressure at 30 cmH_2O = V30), the lungs were removed from thorax and fixed with formalin through pulmonary artery perfusion at 10 cmH_2O pressure. Lung slices from right upper lobe were stained (HE) and examined for mean alveolar intercept (Lm) and distortion index, in order to evaluate alveoli size and asymmetry. Statistical analysis was by Student-t test or chi-square test, as indicated. Significance level was set at $p = 0.05$.
Results: The results are shown in the table below (meanSD). Data of lung mechanics and blood gas analysis were obtained after 4 hour ventilation.

Curosurf	n	Tv (ml/kg)	DC (ml/kg-1xcmH2O-1)	Ventilatory pressure (cmH2O)	Oxygenation index	PaO2/FiO2	PaCO2 (mmHg)	V30 (ml/kg)	Lm	Distortion index
PEG	10	10.00.3	0.4920.056*	12.52.3*	4.01.8	373105	60.49.6	39.312.6	59.210.3	8.72.1
	12	10.00.4	0.4370.015	15.10.8	4.52.3	377128	60.817.5	36.06.2	64.411.5	9.23.3

Conclusions: The addition of PEG did not improve lung mechanics, function, or alveoli size and asymmetry, compared to the original commercial surfactant in this experimental model of ARDS.

0682 EARLY COLLOID REPLACEMENT THERAPY IN A NEAR-FATAL MODEL OF HEMORRHAGIC SHOCK

ELA Ferreira, RGG Terzi, MM Moreira, W Silva, AC Moraes
Núcleo de Medicina e Cirurgia Experimental, FCM, UNICAMP, Campinas, SP, Brasil

Introduciton: For more than forty years, researchers all over the world have been trying to find a more appropriate and advantageous solution to rapidly restore hemodynamic stability in a patient in hemorrhagic shock. In the present study, we tried to establish an experimental model of hemorrhagic shock that would be sufficiently uniform and reproducible to be used as a protocol for fluid resuscitation in order to compare the response to different types of solutions.
Objective: The objective of this study was to evaluate the hemodynamic and metabolic response to early fluid resuscitation either with colloid or crystalloid in animals submitted to a fatal model of hemorrhagic shock.
Material and Methods: Large-White piglets (n=30, ±20Kg), were anesthetized and maintained by endotracheal tube using nebulized Halothane and always breathing room air spontaneosly. Bleeding reduced mean arterial pressure (MAP) to 30mmHg. Successive Accusport® readings permitted to detected lactate levels greater than 10mM/L, the end-point established to initiate fluid resuscitation. Three groups of animals were studied: the sham group (Group I – sham, n=10), not bled was simply maintained under superficial anesthesia (Halothane 0.5%); the HES group (Group II - HES, n=10) that received 7ml/Kg of hydroxyethyl starch 130/0.4 at 6% (HES 130/0,4) followed by 33 ml/kg of lactated Ringer's solution (LR); and the LR group (Group III - LR, n=10) that received 40ml/kg of lactated Ringer's solution. Hemodynamic (Mean Arterial Pressure – MAP, cardiac output – CO and Systemic vascular resistance – SVR) and metabolic variables (Lactate, base deficit – BD, venous-arterial PCO2 gradient – Delta-PCO2, arterial-venous pH gradient – Delta-pH and oxygenation of mixed venous blood – PVO2) for the sham group were collected after stabilization (Baseline) and 30´, 60´and 120´ after baseline. For the volume replacement groups these variables were recorded after stabilization (Baseline), after reaching the proposed end-point of shock (Shock – 30'), after fluid replacement (Resusc. – 60') and, finally, after transfusion (Post-transf. – 120').
Results:(Table 1)
Conclusion: It has been observed that in severe hemorrhagic shock, the early infusion of a small quantity of colloid results in improved hemodynamic and metabolic variables.

Table 1

Group I: – *sham*

TIME	PAM	CO	Lactate	BE	Delta-pH	Delta-PCO_2	PvO_2
T_0	96,7±21,3	4,14±1,1	2,24±0,7	4,3±3,9	0,05±0,01	8,0±2,0	47,13±11,0
T_1	95,4±23,5	4,34±1,2	2,15±0,7	3,9±2,7	0,04±0,02	7,7±2,9	45,46±7,4
T_2	100,4±17,8	4,02±08	2,03±0,7	3,8±2,8	0,06±0,03	8,8±3,7	45,29±5,2
T_3	101,0±21,1	4,25±0,8	1,89±0,6	4,2±2,3	0,05±0,02	8,1±4,5	45,07±5,1

Group II: HES

TIME	PAM	CO	Lactate	BE	Delta-pH	Delta-PCO_2	PvO_2
T_0	81,2±3,0	4,70±0,6	1,66±0,5	7,48±2,3	0,04±0,02	8,4±2,0	48,4±2,5
T_1	28,3±2,5	0,72±0,2	10,48±0,7	-8,62±2,4	0,25±0,04	38,9±5,7	25,0±5,1
T_2	67,0±7,7	4,59±0,7	11,83±3,1	-6,07±3,1	0,06±0,02	10,1±2,3	43,5±3,2
T_3	82,7±7,0	4,62±0,8	5,0±1,9	2,36±3,4	0,03±0,02	7,9±3,8	45,4±3,7

Group: LR

TIME	PAM	CO	Lactate	BE	Delta-pH	Delta-PCO_2	PvO_2
T_0	94,8±13,5	4,66±1,4	1,48±0,4	4,57±3,2	0,04±0,03	8,9±1,9	42,36±9,5
T_1	28,6±5,3	1,13±0,4	14,20±1,1	-14,27±5,0	0,21±0,12	30,7±17,7	20,88±2,8
T_2	40,7±14,8	2,40±1,0	18,14±4,4	-18,73±6,7	0,16±0,10	16,5±6,9	21,48±8,4
T_3	52,4±34,1	3,67±1,1	7,64±3,2	-4,93±9,4	0,08±0,07	6,9±0,9	41,57±9,3

0683 OUTCOME PREDICTION MODELS ON ADMISSION IN A CARDIAC INTENSIVE CARE UNIT: DO THEY PREDICT INDIVIDUAL OUTCOME?

CB Terzi, D Dragosavac, SG Lage, RGG Terzi
UTI - InCor – FMUSP, São Paulo, SP and UTI – HC - FCM/UNICAMP, Campinas, SP, Brasil

Background: Systems to evaluate risk of death in severe heart failure (SHF) are important tools for implementation of public health policies. However, relevance of individual scores for clinical practice is still largely questionable.
Objective: Evaluate the reliability of different Prognostic Outcome Scores to a set of critical patients with SHF.
Method: Acute physiology variables (worst in the first 24 hours after admission to the ICU), chronic health evaluation and age were collected from 90 patients (12 f/78m), age 56±17. The patients were in NYHA class IV, or in cardiogenic shock resulting from dilated cardiomyopathies. Acute cardiac diseases were excluded. Data was used to calculate scores and risk of death and Standardized Mortality Ratio (SMR) employing three different outcome-scoring systems (APACHE II, SAPS II and UNICAMP II). Further analysis was done using goodness of fit statistics of Hosmer and Lemeshow as well as a Receiving Operating Curve (ROC) for all three systems. UNICAMP II equation was based on the worst Acute Physiology Score (APS) within 24h after admission to ICU as well as the use of mechanical ventilation (MV), the presence of Acute Renal Insufficiency (ARI) and the type of admission to the ICU. Calculated Risk of Death = 1/1[1+ EXP(-Y)], where Y = - 3,7594 + 0,1162 X APS + 0,7178 if MV + 0,7318 if ARI + 0,8367 if emergency admission.
Results: Mortality was high in this selected group of patients: 57 of 90 patients died in the ICU (63,3%).
Higher mortality was observed in patients with age over 70 or below 30. Statistical analysis showed low calibration, high Standardized Mortality Ratio (SMR) and low area under the curve (AUC) of the Receiving Operating Curve (ROC) for all three Outcome Scores Systems. Mortality was underestimated in this selected group of severely ill cardiac patients. The interpretation for these discrepancies is that data to calculate risk of death is collected within the first 24 hours after admission and death occurs several days later. Furthermore, 12 out of 57 deaths (21,05% of all deaths) proved to have pulmonary embolism (PTE), confirmed by at least an image test or by autopsy.

MODEL	Hg	Cg	SMR	AUC (ROC)
APACHE II	143.6	143.9	3.33	0.637±0.061
SAPS II	287.5	424.8	4.08	0.571±0.061
UNICAMP II	39.89	41.76	1.617	0.600±0.061

Conclusion: All outcome system were found to be inadequate for estimating risk of death of patients admitted to the ICU with severe heart failure or cardiogenic shock. Pulmonary embolism was important as factor inducing hemodynamic instability and mortality in SHF patients. In our opinion severity systems for cardiac patients with refractory heart failure should thus be developed and the discussion of anticoagulation must be made.

0684 END-TIDAL CARBON DIOXIDE (PETCO2) AS A NONINVASIVE PERFUSION INDICATOR IN HEMORRHAGIC SHOCK

ELA Ferreira, RGG Terzi, MM Moreira, W Silva, AC Moraes
Núcleo de Medicina e Cirurgia Experimental, FCM, UNICAMP, Campinas, SP, Brasil

Introduction: PetCO2 monitoring is a useful and simple method of tracking cardiac output during cardiopulmonary resuscitation and can be used as a prognostic tool in cardiac arrest. PetCO2 was highly correlated with cardiac index under conditions during haemorrhagic shock. To evaluate this relationship, we recorded PetCO2 and cardiac output (CO), mean arterial pressure (MAP), base deficit (BE), lactate (Lac) and central venous oxygen saturation (SvO2) during fluid replacement haemorrhagic shock.
Objectives: Evaluate the relationship between PetCO2 and perfusion markers in fluid replacement of hemorrhagic shock.
Material and Methods: Large-White piglets (n=7), weighing between 20 and 25 kilograms were used in this study. The animals were pre-medicated with 10mg/kg IM ketamine and 0.5mg IM atropine. They were anesthetized, first by face mask and afterwards by endotracheal tube using nebulized Halothane always breathing room air spontaneosly. Blood was removed from the animals and MAP was to 30mmHg. Successive blood lactate readings at short intervals permitted detect levels greater than 10mM/L, the established end-point to initiate fluid resuscitation (colloid/crystalloid infusion and re-transfusion). PetCO2 was continuosly measured with a previously calibrated capnograph (CO2SMO PLUS). Variables recorded were invasive mean arterial pressure (MAP), cardiac output by thermodilution (CO), blood lactate (Lac), base deficit (BD), and central venous oxygen saturation (SvO2). The variables were obteined in four distinct times: T0 (Baseline), T1 (Shock), T2 (post colloid/crystaloid infusion) and T3 (post re-transfusion).
Results:

	PetCO2	Lactate	BD	PVO2	CO	Delta-pH	Delta-PCO2
T0	37.4±3.9	1,59±0,56	8.91±1.79	48.8±2.8	4.72±0.57	0.04±0.01	7.9±1.3
T1	14.3±3.3	10.31±0.45	-5.18±2.08	21.0±5.5	0.62±0.16	0.27±0.03	40.1±3.4
T2	39.2±4.7	11.81±1.46	-5.24±2.15	42.6±3.25	4.77±0.66	0.06±0.02	10.6±2.6
T3	40.8±4.3	4.91±1.54	4.03±2.36	45.28±4.23	4.56±0.80	0.03±0.03	7.54±4.6

The significant fall in PetCO2 observed in T1 is also observed in all other variables. However, after volume replacement PetCO2 recovers as fast as CO, delta-pH and delta-PCO2. SvO2 recovery in T2 is partial and no restoration of baseline values occurs in blood lactate and base deficit with initial volume resuscitation. At the end of transfusion (T3) all variables return to their baseline values with the exception of blood lactate.
Conclusion: PetCO2 is an excellent noninvasive indicator of tissue perfusion during volume resuscitation in hemorrhagic shock. It is superior to blood lactate, because after volume resuscitation, blood lactate did not express the observed hemodynamic and tissue perfusion recovery. In experimental hemorrhagic shock in animals without pulmonary impairment, PetCO2 is a simple, non invasive variable that expresses tissue perfusion in real time.

0685 RESPIRATORY PHYSIOLOGIC VARIABLES IN EXPERIMENTAL PULMONARY EMBOLISM AND EXPERIMENTAL HEMORRHAGIC SHOCK

MM Moreira, RGG Terzi, K Metze, ELA Ferreira, AC Moraes, WA Silva
Núcleo de Medicina e Cirurgia Experimental, FCM, UNICAMP, Campinas, SP, Brasil

Introduction: Increase of alveolar dead space has been observed in pulmonary embolism (PE) and hemorrhagic shock (HS). Although end-tidal expiratory carbon dioxide partial pressure (PetCO2) is low in both experimental models, differences in other respiratory variables have not been studied in animals breathing spontaneously.
Objective: To identify physiologic variables, able to differentiate PE from HS in animals breathing spontaneously.
Method: Six young pigs with weight of 24.0±0.6 kg, were submitted to injection of autologous blood clots. Another group, of six pigs, weighing 23.33±0.82 kg, was submitted to controlled hemorrhage. End-point for both was a fall of PetCO2 to 50% of the baseline value. All animals were intubated on spontaneous ventilation with nebulized halothane on room air. Hemodynamic and respiratory monitoring and blood gases were collected before and after intervention in each group after reaching the established end point (around 40 min after embolization or after bleeding).
Results: Calculation of the alveolar dead space [VD alv min (L)], alveolar dead space fraction end-tidal [(AVDSf = P(a-et)CO2/PaCO2)] and the arterial to alveolar CO2 gradient [P(a-et)CO2], as well as data of PetCO2 are presented on Table 1. At Baseline, variables from both groups did not differ. After intervention, PetCO2 was very low in both groups and did not differ statistically when compared. After intervention, the remaining evaluated variables (VD alv min, P(a-et)CO2 and AVDSf) exhibited significant statistical difference between PE and HS.
Conclusion: PetCO2 does not differentiate PE from HS. Although VD alv min, P(a-et)CO2 and AVDSf are significantly different, P(a-et)CO2 and AVDSf are more easily calculated than alveolar dead space and may become reliable screening diagnostic tools at the bedside.

TABLE 1

EMBOLISM				
VARIABLE	Baseline	Post-intervention	**p**	**SIGN**
$PetCO_2$	36.68±1.54	12.77±2.06	9.67E-7	*
$P(a\text{-}et)CO_2$	8.24±3.57	35.45±5.23	1.6E-4	*
V_D alv min (L)	0.94±0.25	8.68±1.78	0.00204	*
AVDSf	0.18±0.06	0.74±0.04	3.09E-5	*
HEMORRHAGIC SHOCK				
VARIABLE	Baseline	Post-intervention	**p**	**SIGN**
$PetCO_2$	35.35±2.25	13.81±3.01	1.94E-5	*
$P(a\text{-}et)CO_2$	9.08±2.90	5.14±1.35	0.0326	*NS*
V_D alv min (L)	1.09±0.40	2.09±0.87	0.0288	*NS*
AVDSf	0.20±0.06	0.27±0.06	0.097	*NS*