

infections complications and ICU mortality. Energy balance was calculated as energy delivery minus target. Data in means \pm SD, logistic regressions between energy balance and outcome variables.

Results and Discussion: 432 patients aged 60.96 ± 16.20 years were investigated. APACHE II score was 17.07 ± 5.54 , mechanical ventilation lasted 2.17 ± 4.34 days, ICU stay was 9.34 ± 8.23 days, and ICU mortality was 28.7%. Time to feeding was 2.9 ± 3.6 days. Incidence of infectious complications was 33.1%. Cumulated energy balance was between $-10\,220 \pm 7070$ kcal and correlated with infectious complications: odds ratio (OR) 2.54; 95% confidence interval (CI): 1.98-3.26; $p = 0.0000$. The correlations were also strong with the length of mechanical ventilation ($F = 72.07$, $P < 0.001$), the length of ICU stay ($F = 580.09$, $P < 0.001$) and mortality (OR = 1.29; 95% CI: 1.05 - 1.58; $p = 0.01$). Multiple regression analysis adjusted for confounders identified cumulated energy deficits as being independently associated with infectious complications ($F = 85.59$, $P < 0.001$), mortality ($F = 6.14$, $P = 0.014$), ventilator stay ($F = 53.8$, $P < 0.001$) and ICU stay ($F = 334.5$, $P < 0.001$).

Conclusion(s): In this study was found a significant association between energy deficit and greater risk of ICU mortality, infectious complications, longer ventilator stay and ICU stay. Energy deficit may serve as an independent nutrition indicator to predict ICU mortality and clinical outcome in critically ill patients. Negative energy balances are very frequent during severe critical illness and suggest the need for implementation of quality improvement measures by the healthcare team to enhance the provision of nutrition support to the patients of the ICU.

12AP3-6

Malnutrition affects negatively the outcome of intensive care unit (ICU) patients

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Background and Goal of Study: The prevalence of malnutrition is a common problem in critically ill patients. Malnutrition has been identified as affecting patient outcome. The purpose of this study was to correlate the nutritional status of ICU patients with their morbidity, mortality, length of ventilator stay and length of ICU stay.

Materials and Methods: We prospectively studied 432 patients ≥ 18 years that stayed more than 4 days in the ICU of University Hospital Center of Tirana, between 2010 and 2012. The patients were characterized by scoring the components "undernutrition" and "severity of disease", using Nutritional Risk Screening-2002. The patient could have a score of 0-3 for each component (undernutrition and severity of disease), and any patient with a total score ≥ 3 was considered at nutritional risk, or with malnutrition. Undernutrition was evaluated by any of the 3 variables (BMI, recent weight loss, recent food intake).

Univariate and multivariate logistic regression analysis were used to identify the relation between malnutrition and outcome.

Results and Discussion: 432 patients aged 60.96 ± 16.20 years with 56.3% being male. The prevalence of malnutrition in ICU admission was 63.6%. The incidence of complications in the malnourished was 68.3% vs. 28.6% in the well nourished patients [Odds ratio (OR): 5.3, 95% confidence interval (CI): 3.501 - 8.261; $p = 0.0000$]. The incidence of infectious complications in the malnourished was 39.2% vs. 22.2% in the well nourished patients, OR = 2.2, 95% CI: 1.44 - 3.52; $p = 0.0003$.

Mortality in the malnourished patients was 33.0% vs. 21.0% in the well nourished (OR = 1.8, 95% CI: 1.17 - 2.94; $p = 0.008$). Malnourished patients stayed in the mechanical ventilation 2.49 ± 4.48 days vs. 1.6 ± 4.05 days in the well nourished patients. Malnourished patients stayed in the ICU for 10.55 ± 9.35 days vs. 7.31 ± 5.23 days in the well nourished.

Malnutrition, as analyzed by a multivariate logistic regression model, is an independent risk factor on higher complications: $F = 73.96$, $P < 0.001$, higher infectious complications: $F = 13.35$, $P < 0.001$, increased mortality: $F = 7.2$, $P = 0.008$, longer stay in the ventilator $F = 4.03$, $P = 0.04$ and longer ICU stay $F = 15.52$, $P < 0.001$.

Conclusion(s): Malnutrition affects negatively the outcome of ICU patients. Nutritional assessment is mandatory, in order to recognize malnutrition early and initiate timely nutritional therapy.

12AP3-9

Delirium in the ICU setting - a subjective and theoretical survey before the implementation of the Confusion Assessment Method for the ICU in an unit

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Background and Goal of Study: The current definition of *delirium* comprises acute change or fluctuation in mental status and inattention, accompanied by either altered level of consciousness or disorganized thinking. It is a frequent condition in the ICU and it is associated with longer hospital stay, increase in mortality at 6 months and long-term cognitive impairment, but remains under diagnosed. The Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) has been validated and implemented in many ICUs and its use is recommended by the Society of Critical Care Medicine. It is our purpose to evaluate the individual perspective and the objective knowledge of our staff about *delirium* before the implementation of the CAM-ICU.

Materials and Methods: Anonymous survey to our ICU clinical staff which contained subjective and 'true or false' questions. Data was analysed with the software SPSS version 17.0. The Wilcoxon test was used to compare auto-perception of knowledge about *delirium* and the content of answers regarding its definition.

Results: Forty two questionnaires were returned (participation rate of 73%), 11 from physicians and 31 from nurses. Overall, 61.9% of inquiries think they can give a definition for *delirium* in the ICU and 50% claim to be able to evaluate *delirium*. 28.6% of the respondents - 63.6% of the physicians and 16.1% of the nurses - know the CAM-ICU. From these only a quarter has received education on this method, 75% think it's easy to apply and 66% don't see its use as an increase in the daily workload. We found a high rate of wrong and 'I don't know' answers to questions about operationalization, diagnosis and outcome. The subjects' auto-perception on their knowledge about *delirium* [Likert scale] was compared to their ability to answer questions related to its definition - 'attention deficit is essential for diagnosis' [true], Wilcoxon test $Z = -4.699$ ($p < 0.001$); 'disorganized thinking is essential for diagnosis' [false], Wilcoxon test $Z = -4.437$ ($p < 0.001$).

Conclusions: The respondents' auto perception of knowledge about *delirium* doesn't translate in the ability of giving an appropriate definition and making an adequate evaluation. Most of the inquiries don't know the CAM-ICU, but those who do believe it's easy to apply and its use won't increase the workload. We performed educational sessions about *delirium* and the CAM-ICU in our unit to encourage our clinical staff to deal properly with this hazardous condition.

12AP3-10

Efficacy of dexmedetomidine and propofol on shivering during mild hypothermia after cardiovascular surgery

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Background and Goal of Study: Hypothermia may be beneficial in stroke victims, even though under operative and postoperative periods. However, it provokes vigorous shivering which is potentially harmful in fragile patients. Dexmedetomidine, a centrally acting alpha (2)-adrenergic agonist, has been used as a sedative agent and is known to reduce the shivering threshold. Therefore, the aim of this study was to evaluate the efficacy of dexmedetomidine in preventing shivering during therapeutic mild hypothermia after cardiovascular surgery.

Materials and Methods: Twenty-four patients (36 to 83 years), suffering from hemodynamic collapse during surgery, were induced mild hypothermia after cardiovascular surgery, such as thoracic aortic surgery ($n = 22$), and coronary artery bypass grafting ($n = 2$). On arrival in the ICU, patients received 0.2-0.7 mg/kg/hr of dexmedetomidine (Dex group; $n = 14$), or 1-3 mg/kg/hr of propofol (Prop group, $n = 10$), intravenously. Mean arterial pressure, cardiac output, mixed venous oxygen saturation (SVO₂), central blood temperature (Temp-C), and peripheral skin temperature (Temp-P) were measured. During therapeutic mild hypothermia, the incidence of shivering was recorded. All results are expressed as mean \pm SD, with statistical evaluation by an unpaired-t test and Fisher's exact probability test. A P value less than 0.05 was considered statistically significant.

Results and Discussion: No differences were found in SvO₂ (Dex: $71.3 \pm 8.1\%$, Prop: $73.9 \pm 4.4\%$, $P = 0.118$) and Temp-C (Dex: $35.3 \pm 0.7^\circ\text{C}$, Prop: $35.1 \pm 0.6^\circ\text{C}$, $P = 0.515$) during therapeutic hypothermia among the two groups. However, Temp-P in Dex group ($33.5 \pm 1.7^\circ\text{C}$) was significantly higher