SASPEN Abstracts: Oral presentations

PLASMA GLUTAMINE LEVELS IN RELATION TO ICU PATIENT OUTCOMES

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Low and high plasma glutamine levels are associated with increased mortality.

Aim: This study aimed to measure glutamine levels in ICU patients and identify proxy indicators of abnormal glutamine levels.

Methods: Patients admitted to 3 ICU's in South Africa were enrolled provided they did not receive prior glutamine supplementation. Clinical and biochemical data was collected.

Plasma glutamine categories: low (<420), normal (420-700), high (>700 µmol/L).

Results: 330 patients (age 47.42±16.56 years, 56.4% male) were enrolled (mean APACHE II score 18.57±8.55 and SOFA score 7.05±3.78). On admission, 58.5% had low (median

299.51 µmol/L) and 14.2% high (median 898.87 µmol/L) plasma glutamine levels. Low plasma glutamine was associated with higher APACHE scores (p=0.003), SOFA scores (p=0.003), CRP values (p<0.001), serum urea (p=0.008) and serum creatinine (p=0.023) and lower serum albumin (p<0.001). The best predictors of low plasma glutamine were admission APACHE score (odds ratio, [OR] 1.032, p=0.018), SOFA score (OR 1.077, p=0.016) and CRP (OR 1.006, p<0.001). ROC curve analysis revealed a CRP threshold value of 87.95mg/L to be indicative of low plasma glutamine levels (AUC 0.7,p<0.001).

Conclusion: 59% of ICU patients had low plasma glutamine on admission. Markers of infection and disease severity were significant indicators of low plasma glutamine.

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PLASMA GLUTAMINE AND CLINICAL OUTCOME AMONG CRITICALLY ILL CHILDREN

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Glutamine is considered essential during critical illness and supplementation is common. Recent safety concerns highlight the need for glutamine research in specific populations.

Aim: The aim was to explore associations between plasma glutamine levels and clinical outcome in critically ill children.

Method: In this cross-sectional study, plasma glutamine was measured on admission and day two (D2) of Paediatric Intensive Care Unit (PICU) stay. Clinical and outcome data were prospectively captured over one month. A normal plasma glutamine was considered between 420-930 µmol/L.

Results: Of the 76 patients, (median age 19 months, IQR 3.6-64.8 months, 71% male, median PIM3 -4.23, IQR -4.74--3.21), most had normal plasma glutamine on admission (77.6%; median 556.5 umol/l, IQR 459.5- 664.5 umol/l) and D2 (67.5%; median 529.0 umol/l, IQR 356.0-716.0 umol/l). Admission plasma glutamine varied significantly amongst diagnostic groups (p = 0.020), with trauma patients having the lowest values. Plasma glutamine was positively, but non-

significantly, associated with length of hospital stay(LOS) (r= 0.23, p = 0.067) and mortality risk (r= 0.22, p =0.052).

Conclusion: 78% of patients had a normal plasma glutamine at PICU admission. Although significant differences were identified amongst diagnostic groups, glutamine was not significantly related to LOS or mortality.

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ADEQUACY OF ORAL INTAKE IN A PRIVATE INTENSIVE CARE UNIT IN GAUTENG PROVINCE

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The prevalence of disease-related malnutrition in acute care facilities is a common phenomenon that negatively affects patient outcomes and treatment costs.

Objective: To assess the adequacy of energy and protein intakes of orally fed patients admitted to the intensive care unit (ICU).

Method: An observational cross-sectional study was conducted. Total energy and protein intakes of 26 participants were assessed and compared to requirements.

Results: Those not receiving oral nutritional supplements (ONS) met 98% of energy and 68% of protein requirements. The nutritionally vulnerable group that received ONS, met 57.2% of energy and 53.7% of protein requirements without ONS, and 76.4% of energy and 74.3% of protein requirements with ONS ($p<0.05$). When divided per body mass index (BMI), the subgroup BMI <30 kg/m^2(n=19) had inadequate median intake for energy and protein, with and without ONS. For the subgroup BMI ≥30 kg/m^2(n=7) energy intake exceeded requirements (125.6%) while protein intake was inadequate(64.1%).

Conclusion: Oral intakes were inadequate, in particularly protein. Specific consideration to optimise protein delivery, without exceeding energy requirements in the critically ill obese patient is necessary.

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SASPEN Abstracts: Poster presentation

THE ACCURACY OF PATIENTS' PERCEPTIONS OF BODY SIZE IN ESTIMATING BODY MASS INDEX IN NELSON MANDELA BAY PUBLIC HOSPITALS

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Many malnutrition screening tools require quantification of weight change to detect malnutrition risk.

Aim: To determine to what extent hospitalised patients can gauge their current and usual body size from validated figure rating scale comprising of images with known body mass indexes(BMI's).

Method: Adult patients (n=196) participated in a quantitative cross-sectional multi-centre study, in three Nelson Mandela Bay public hospitals.

Data was collected from medical files and patients, including anthropometric measurements. Validated figure rating scale (FRS) were used to determine patients' accuracy of actual and usual BMI. Data was analysed with Statistica® and Microsoft Excel 2016.

Results: Sixty-six percent (n=131) of participants were accurate in selecting an image representing their BMI, which was statistically significant (r^2= 0.80; P < 0.001). Female participants were more accurate in selecting the corresponding BMI image ($p<0.05$; r^2=0.77 for males and r^2=0.82 for females).

Sixty-one percent (n=79) of participants with a known previous weight, were accurate in selecting an image representing their usual BMI, which was also statistically significantly (r^2= 0.71; P < 0.001).

Conclusion: An existing FRS may be a useful adjunctive aid in clinical practice to estimate both actual and usual BMI where not otherwise available, which could improve malnutrition detection rates.

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