Table 1 (abstract P147)

NK cells and CD4-lymphocyte apoptosis

Median (%)	Acute pancreatitis	Healthy controls	*P* value
$CD(16 + 56)^+/CD3^-$	15.09	6.50	0.036
$ANNEXIN^+/CD4^+$	7.16	4.63	NS

Table 2 (abstract P147)

Alterations over follow-up

	Day 1	Day 4	*P* value
$CD(16 + 56)^+/CD3^-$	43.67	52.16	0.036
$ANNEXIN^+/CD14^+$	66.37	40.39	0.021

Conclusions Results indicate an early and significant response of NK cells and of CD4 apoptosis in the initial events of acute pancreatitis.

Reference

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Hungarian perioperative selenium survey in patients with oesophageal cancer

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Introduction Selenium is one of the most investigated trace elements and an important link in the antioxidant system [1]. It is known that selenium levels are lower than normal at the time of admittance to the ICU in critically ill patients [2]. Several cohort surveys highlight the role of selenium deficiency in the carcinogenesis of oesophageal cancer [3]. Mortality and morbidity data after oesophagectomy may vary, but remain considerably high [4].

Methods In three Hungarian university centres, 36 patients who were operated on with oesophageal cancer (OG-group) and admitted to the ICU, and 96 healthy volunteers (C-group) were recruited. In the OG-group, full blood selenium levels were measured preoperatively (t0) and on the first (t1) and second (t2) postoperative days. Selenium levels were measured by atomic absorption spectrometry in the laboratories of Byosin Arzneimittel GmbH (Fellbach, Germany), blinded to patient's condition or group assignment. All data are presented as the mean ± SD. To test the normal distribution the Kolgomorov–Smirnov test was used. For statistical analysis the independent-samples *t* test and ANOVA were used as appropriate. For statistical analysis the Statistical Program for Social Sciences (SPSS® version 15.0) software for Windows was used. Statistical significance was considered at $P < 0.05$.

Results There was a significant difference in the full blood selenium levels between the controls and preoperative samples (t0) of the OG-group (123.86 ± 19.14 μg/l vs. 98.36 ± 19.02 μg/l; $P < 0.001$). In the OG-group selenium levels decreased significantly during the study period; t0, 98.36 ± 19.02 μg/l; t1, 86.92 ± 17.04 μg/l; t2, 81.44 ± 18.31 μg/l; $P = 0.001$.

Conclusions This study has shown significantly lower selenium levels in OG-patients as compared with controls and a significant decrease in the postoperative period. Whether this has any influence on outcome requires further investigation.

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Selenium in critically ill children with cardiac dysfunction

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Introduction Selenium (Se) and selenocysteine residues are essential for the activity of glutathione peroxidase enzyme (GPX). GPX plays an important role in antioxidant defense. Se deficiency is reported in critically ill patients due to deficient dietetic intake, unsupplemented parenteral nutrition, catabolic state and increased losses. The objective of the study was to study the Se and GPX status in critically ill children with cardiac dysfunction and the effects of Se supplementation.

Methods Thirty-five critically ill cardiac children (mean age: 2.82 ± 3.41 years) with different cardiac disorders (15 with myocarditis, 15 with cardiomyopathy and five with rheumatic heart disease) were investigated for blood Se and GPX levels and echocardiographic parameters at admission and after 3 days of parenteral Se supplementation (initial dose of 2 μg/kg/day on the first day followed by 1 μg/kg/day). Fifteen healthy children were included as controls.

Results At admission, Se and GPX levels were significantly decreased in patients (6.61 ± 1.16 μg/l and 10.8 ± 1.14 U/l) compared with controls (16.06 ± 2.08 μg/l and 20.64 ± 2.13 U/l) ($P < 0.001$). Se levels did not differ between studied cardiac diseases ($P > 0.05$). Se levels correlated positively with corresponding ejection fraction values (EF) ($r = 0.57$ and $P < 0.05$) and fractional shortening values (FS) ($r = 0.45$ and $P < 0.05$), and negatively with left ventricular end-diastolic diameter ($r = -0.50$ and $P < 0.05$). After Se supplementation, Se and GPX were raised (16.53 ± 2.25 μg/l and 19.71 ± 2.63 U/l). Clinical examination revealed that orthopnea improved in 88.6% of cases and dysrhythmia disappeared in 65.7%. Echocardiography showed that EF and FS were also significantly improved (admission values for EF and FS were 34.6 ± 7.4 and 16.8 ± 4.1, compared with 52.6 ± 11.4 and 27.7 ± 6.8 after Se supplementation; $P < 0.05$).

Conclusions Se deficiency is one of the mechanisms of worsening cardiac dysfunction in critically ill patients regardless of the underlying cardiac etiology. Se supplementation can reverse such a mechanism and improve cardiac performance.