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MEETING ABSTRACTS

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parameters were seen in two patients when measured post transfusion and the remaining 11 patients did not have routine monitoring of blood parameters post transfusion. Eight (62%) patients died, of which seven died in the emergency department.

Conclusions Major haemorrhage is associated with a very high mortality in severely injured children. We recommend rigorous monitoring of laboratory parameters to guide appropriate administration of blood products. There is a need for instituting a major haemorrhage policy in paediatric trauma and consideration of point-of-care testing of blood parameters.

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Cytokine levels evaluation during acute isovolemic anemia

M Kahvegian¹, DT Fantoni², DA Otsuki¹, CA Holms¹, CO Massoco³, JO Auler Jr¹
¹Faculdade de Medicina da Universidade de São Paulo, Brazil; ²School of Veterinary Medicine, Universidade de São Paulo, Brazil; ³Sales Gomes Consulting, São Paulo, Brazil

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Introduction To date there is poor evidence that documents the benefit of red blood cell transfusion on clinical outcome. Acceptance of a lower transfusion trigger in the perioperative period requires detailed information regarding the effects of volume replacement in different organs and systems. Since fluids can have a widely divergent impact on the immune response, this study was undertaken to determine the cytokine levels in a model of acute isovolemic anemia (AIA) with hydroxyethyl starch (HES) and gelatin (GEL).

Methods Twenty-one pigs were anesthetized, instrumented and randomized into three groups: Control, HES and GEL. Animals in the HES and GEL groups were submitted to acute isovolemic anemia to a target hematocrit of 15% with volume replacement performed with HES 130/0.4 and GEL at a 1:1 ratio. The withdrawn blood was returned to the animals 120 minutes after the end of AIA. TNF, IL-1, IL-6 and IL-10 measurements were performed with blood samples collected at the femoral vein at the following time points: Baseline, after instrumentation (INST), immediately after AIA (AIA), 60 minutes after AIA (60AIA), 120 minutes after AIA (120AIA), 60 minutes after blood infusion (60BI) and 120 minutes after blood infusion (120BI). The cytokines were measured in serum by a commercially available ELISA with specific monoclonal antibodies. Two-way analyses of variance (ANOVA) and a Tukey test were used to assess its significance ($P < 0.05$).

Results TNF varied significantly among the groups in different time points (AIA: Control, 91 ± 16 and GEL, 221 ± 61 ; $P < 0.05$; 60AIA: Control, 76 ± 15 ; HES, 172 ± 42 ; $P < 0.05$ and GEL, 323 ± 77 ; $P < 0.001$; 120AIA: Control, 98 ± 6 and GEL, 304 ± 66 ; $P < 0.01$; 120BI: Control, 71 ± 7 and GEL, 211 ± 71 ; $P < 0.05$). In relation to IL-1, only in the GEL group (224 ± 56) was verified a statistical significant at time point 60AIA when compared with Control (84 ± 17 ; $P < 0.05$). When IL-6 levels were studied, GEL presented

a statistically significant at 60AIA (GEL, 331 ± 65) when compared with Control (146 ± 19 ; $P < 0.05$). Serum IL-10 levels in GEL-treated animals were statistically significantly elevated at 60AIA (Control, 17 ± 3 and GEL, 46 ± 12 ; $P < 0.01$) and 120BI (Control, 21 ± 5 and GEL, 59 ± 11 ; $P < 0.05$).

Conclusions Fluid replacement influences the cytokine measurements during acute isovolemic anemia expressed by serum TNF, IL-1, IL-6 and IL-10 increases, especially in GEL group.

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Haemodynamic alterations in community-acquired sepsis at early stage

S Hettwer, J Wilhelm, M Schürmann, H Ebelt, K Werdan
Martin-Luther-University, Halle (Saale), Germany

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Introduction Community-acquired sepsis at an early stage is common, but haemodynamic alterations remain unclear. The aim of the study was to characterize cardiovascular alterations in patients of our ProFS (monocentric observational) study, which was to characterize patients with sepsis in the emergency department.

Methods Systemic vascular resistance (SVR) and cardiac output (CO) were measured non-invasively using a TaskForce monitor (CNSystems, Graz, Austria) after admission, 24 hours and 72 hours. Indexed values were calculated (SVRI (dyn-second/cm⁵/m²), CI (l/minute/m²)). Procalcitonin (PCT, ng/ml) was measured in serum.

Results A sample of 208 included patients received haemodynamic examination. Mean age was 61.8 ± 18.0 years, 62.7% were male. Patients were divided by PCT < 2 and ≥ 2 . Age, gender and previous medical history were comparable in both groups. The heart rate was 99.8 ± 21.6 vs 104.6 ± 23.0 /minute ($P = NS$) and the mean artery pressure was 89.5 ± 15.6 vs 81.6 ± 21.5 mmHg ($P < 0.01$). Mean SVRI in patients with PCT < 2 was $2,934 \pm 1,045$ vs $2,376 \pm 842$, $P < 0.05$ at the time of admission. No difference was found after 24 hours ($2,959 \pm 1,002$ vs $2,924 \pm 1,324$, $P = NS$) and 72 hours ($3,123 \pm 931$ vs $3,556 \pm 1,524$, $P = NS$). On the contrary, for patients with PCT ≥ 2 the increase after 72 hours was significant ($P < 0.05$). Differences after admission could not be observed for CI between patients with PCT < 2 vs ≥ 2 . Mean values after admission were 2.7 ± 1.0 vs 2.8 ± 0.8 , after 24 hours 2.5 ± 0.8 vs 2.5 ± 0.5 , and after 72 hours 2.3 ± 0.7 vs 2.3 ± 0.6 (all: $P = NS$). See Figure 1

Conclusions Patients with community-acquired sepsis in the emergency department had an elevated SVRI. At the time of admission patients with high PCT had a significantly lower SVRI than patients with low PCT. Cardiac index at the time of admission was at a lower limit of normal range in all patients. These findings are in strong contrast to the classic pattern of sepsis on the ICU, where SVRI is keenly reduced and CI elevated. They implicate that patients with sepsis in the emergency department may benefit more from application of fluid and positive inotrope substances than from vasopressor.

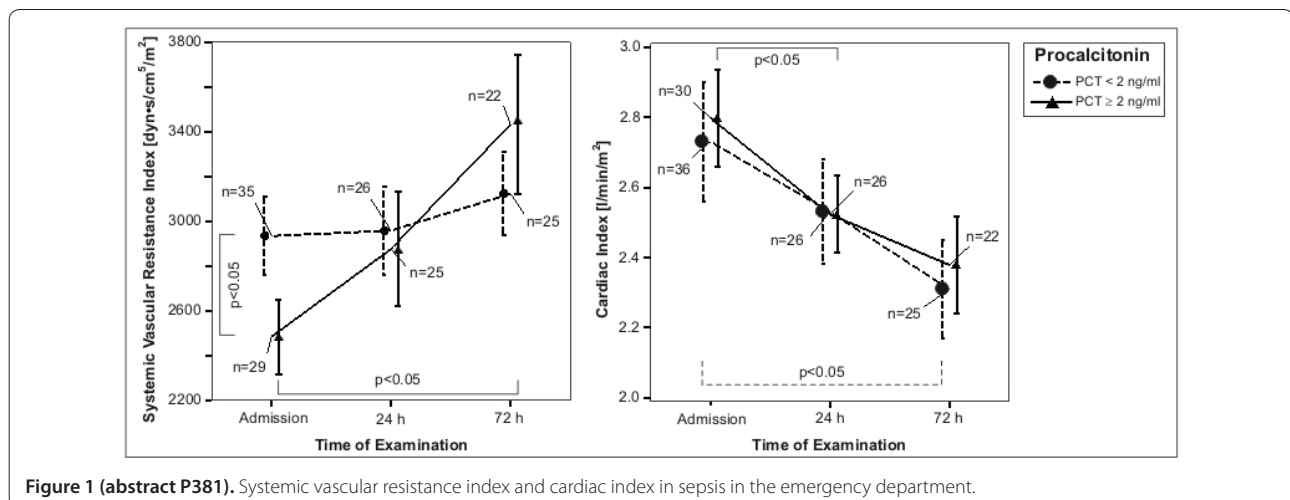


Figure 1 (abstract P381). Systemic vascular resistance index and cardiac index in sepsis in the emergency department.