for 12 hours. Incidence of hypotension (defined as a 30% reduction in Systolic BP from SBP thirty min after SA) was recorded and treated with 250 ml Ring-
er’s lactate solution and bolus of ephedrine. We also assessed postoperative blood loss at H1, H3, H6 and H12. Continuous data were compared using Mann Whitney test and parametric data were analysed using Fisher exact test. Results and Discussion: Patient characteristics, heart rate, SBP were similar among groups. There were no significant differences in mean SBP values be-
tween the two groups immediately after tourniquet release. Mean SBP were significantly lower in group G only at H6, H7, H8 and H9. The incidence of hypotension was significantly higher in group G (82% vs 47%; p = 0.03). But the difference between the two groups for blood loss and allogeneic blood transfusion was not statistically significant.

Conclusion(s): The primarily results of our study suggest that preloading with Voluven® (Hydroxyethyl Starch 130/0.4) before tourniquet release in patient undergoing TKA was associated with better hemodynamic stability than Plas-
mion® (4% Gelatin). The study is going one to confirm such results.

4AP1-6
Cerebral repercussions of general anesthesia and severe hypotension: A study in pigs measuring EEG parameters and cerebral oxygenation during acute bleeding and fluid resuscitation
Universidade de Trás-os-Montes e Alto Douro, Departamento de Ciências Veterinárias, Vila Real, Portugal

Background and Goal of Study: Bis and other EEG derived parameters may be indicators of cerebral hypoperfusion caused by systemic hypotension1. Our goal was to investigate EEG-derived indexes and cerebral oxygenation during acute hemorrhage and fluid resuscitation.

Materials and Methods: Twelve male pigs, 27±3 kg, were anesthetized with constant rates of propofol (15 mg/kg/h) and remifentanil (0.3 µg/kg/min) and submitted to acute hemorrhage and 4 resuscitation protocols: Ringer Lactate starting right after bleeding or 20 minutes later; Hydroxyethyl Starch right after bleeding or 20 minutes later. Mean arterial pressure (MAP) and global cerebral oxygenation (SVJO2/Opticath) were measured continuously. Bis-XP was used to monitor bispectral index (BIS), suppression ratio (SR) and total power (TP) and to collect EEG to calculate permutation entropy, approximate entropy and spectral edge frequency. Statistics used two-way repeated mea-
surements ANOVA to compare between groups and Spearman rank correla-
tion analysis to examine EEG-derived parameters and MAP.

Results and Discussion: Bis and other EEG derived parameters may be indicators of cerebral hypoperfusion caused by systemic hypotension1. There were no significant changes in HR in both groups. No significant differences were observed between the 4 groups. Conclusions: For a constant infusion of propofol and remifentanil likely to steady state anesthesia, several EEG derived parameters changed sig-
ificantly suggesting that hypotension produced by bleeding caused a de-
crease in EEG activity. Cerebral oxygen desaturation occurred only in two cases and briefly, suggesting that cerebral hypoperfusion was not the cause of EEG changes. It is possible that the likely decrease in cardiac output could have resulted in a relative increase in plasma concentrations of anesthetics and depressed cerebral metabolism. Resuscitation with crystalloid or colloid did not seem to make a difference.

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4AP1-7
Volume replacement with hydroxyethyl starch (HES) 130/0.4 and ringer lactate solution in pigs after severe haemorrhage: A small bowel mucosa preliminary study
Instituto Politécnico de Viseu, Escola Superior Agrária de Viseu, Viseu, Portugal

Background and Goal of Study: Peroperative and intraoperative hypo-
lema may cause intestinal hypoperfusion and postoperative complications1. The objective of this study is to analyse the effect on the small bowel mucosa of HES 130/0.4 and Ringer solutions used for volume replacement after se-
vere haemorrhage in pigs.

Materials and Methods: Six Large White pigs under TIVA with propofol 15 mg/kg/h and remifentanil 0.3 µg/kg/h; 25 ml/kg of arterial blood was removed during 20 minutes from each pig. Blood volume was replaced at 999 ml/h, 20 ml/kg after the end of the operation. After: Gr1- three pigs, volume was replaced with 25 ml/kg Ringer; Gr2- three pigs, the volume was replaced with 20 ml/kg HES 130/0.4. Pigs were maintained under the same TIVA for an ad-
nitional one hour before euthanasia with 40 ml of KCl. Small bowel samples were collected and a) semiquantitative parameters oedema, congestion, hy-
peraemia, haemorrhage, inflammatory infiltration, cellular degeneration and necrosis, and b) the epithelial detachment were evaluated and classified in a
specific scale from 0 to 3, and to 0 to 5+, respectively. The quantitative morpho-
logical assessment to mucosal loss (ML) percentage and crypt:interstium ratio (C/I) was also analysed. Mean arterial pressure (MAP) and heart rate (HR) were analysed.

Results and Discussion: Gr1- MAP decreased 60% from baseline (69.3±3.8 mmHg to 27.7±4.2 mmHg); ML percentage was 2.18±0.46% (duodenum), 0.62±1.07% (jejenum) and 0.45±0.77% (ileum); the C/I was 0.5±0.06% (duodenum), 0.49±0.02% (jejenum) and 0.46±0.09% (ileum); Gr2- MAP decreased 71% from baseline (78.7±18.9 mmHg to 22.7±0.1 mmHg); ML percentage was 7.5±1.3% (duodenum), 0.0±0.0% (jejenum) and 0.0±0.0% (ileum); the C/I was 0.73±0.28% (duodenum), 0.48±0.11% (jejenum) and 0.43±0.12% (ileum). C/I ratio did not presented relevant differences among the Groups. There were no significant changes in HR in both groups.

Conclusions: Volume replacement with HES 130/0.4 may reduce the ML in the small bowel after severe haemorrhage, when compared to using Ringer Lactate. Duodenum mucosa seems to be more sensitive to hypoperfusion than jejenum and ileum mucosa.

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4AP2-1
Comparison of sevoflurane and propofol anesthesia during off-
pump coronary artery bypass grafting: A randomized study
Kirov M.Y., Eremeev A., Smetakin A., Slastilin V.
Northern State Medical University, Department of Anaesthesiology and Intensive Care, Arkhangelsk, Russian Federation

Background and Goal of Study: Off-pump coronary artery bypass grafting (OPCAB) can be accompanied by hemodynamic changes, cardiac dysfunc-
tion, tissue hypoperfusion and pain. The aim of our study was to compare the effects of sevoflurane and propofol anesthesia during OPCAB and postopera-
tive period.

Materials and Methods: We enrolled 24 patients who underwent elective OP-
CAB using combined general (sevoflurane/fentanyl or propofol/fentanyl) and epidural (at Tih level) anesthesia. The patients were randomized into two
groups: sevoflurane group (SG) (n=12) and propofol group (PG) (n=12). In both groups, anesthesia was induced with intravenous midazolam 0.07 mg/ kg, propofol 1 mg/kg, fentanyl 3.5 µg/kg and pipercuronium 0.1 mg/kg. In the PG, anesthesia was maintained with propofol 3.5 mg/kg/h, whereas the SG group received sevoflurane 0.5-3 vol%. Both groups received intravenous fentanyl 2-3 mcg/kg/h and epidural anesthesia with ropivacaine 0.75% 1 mg/ kg and fentanyl 1 µg/kg during OPCAB, as well as continuous epidural infu-
sion and patient-controlled administration of ropivacaine 0.2% and fentanyl 2 mcg/ml postoperatively. In all patients, we monitored hemodynamics using PICCOplus (Pulsion Medical Systems, Germany) and measured blood gases. The data were assessed by ANOVA and t-test or by Mann-Whitney test. The discrete data were analyzed by chi-square test or Fisher’s exact test.

Results and Discussion: We found no significant differences between the groups concerning demographic data, including co-morbidities and preop-
erative ejection fraction. Intra- and postoperatively, stroke volume index was higher in the SG by 20% (p < 0.05). After the surgery, extravascular lung water reduced by 20-25% in the SG (p < 0.05 compared with preoperative value). During 12 h after OPCAB, plasma lactate concentration and visual anal-
log scale score for postoperative pain were increased in the PG (p < 0.05).

Conclusion: In patients with OPCAB, sevoflurane improves myocardial per-
formance and lung fluid balance during and after surgery and attenuates postoperative tissue hypoperfusion and pain as compared to propofol anes-
thesia.