patients with obesity increased 24-fold (p = 0.0013), while all patients who developed delirium had low scores in the MMSE preoperatively (p = 0.0003). Using multiple logistic regression, the best model was obtained with a combination of MMSE (p = 0.031) and the Barthel index (p = 0.04). When the operation variables were added to this model, the operation time had the strongest effect (p = 0.016).

Conclusion(s): Dependence for the performance of ADLs and impaired cognitive conditions are important predictors of postoperative complications, especially when the operation time is long. CGA is necessary in addition to the conventional cardiopulmonary functional assessment in elderly patients.

18AP2-1
Postoperative cognitive dysfunction (POCD), markers of brain damage and systemic inflammation in elderly patients
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Background and Goal of Study: The systemic inflammatory response after surgery and anaesthesia may cause an increased production of inflammatory mediators in the central nervous system and elevated markers of brain injury in peripheral blood. This has hypothetically been linked to the development of postoperative cognitive dysfunction (POCD) in elderly patients.

Materials and Methods: We investigated 43 patients aged >65 yrs undergoing elective major surgical procedures under standardized general anaesthesia with sevoflurane. Cognitive function was measured preoperatively and 7 days postoperatively using the Consortium to Establish a Registry for Alzheimer’s Disease - Neuropsychological Assessment Battery. A postoperative decline > 1 z-score in at least two of the tested domains was defined as POCD. S-100β, Neuron-specific enolase (NSE), C-reactive protein (CRP) and leucocytes count were measured preoperatively, 2 days postoperatively, and 7 days postoperatively. S-100β, NSE, CRP, leucocytes count, operative characteristics and hospital length of stay in patients with POCD and without POCD were compared using the Mann-Whitney U test and are shown as median [range].

Results and Discussion: POCD developed in 22 patients (51%). Preoperative values for S-100β were lower in patients with POCD (0.044 [0.33-0.138] vs. 0.065 [0.032-0.177] mcg/L, p=0.006), which may be due to unevenly distributed baseline characteristics. Postoperative values for S-100β and pre- and postoperative values for NSE were statistically different in patients with POCD and without POCD. However, patients with POCD had significantly higher CRP values and leucocytes counts on postoperative day 2 while preoperative values and values 7 days postoperative were similar between groups (Table 1). Patients with POCD had significantly longer duration of anaesthesia (318 [180-620] vs. 291 [126-560] min, p=0.049) while age, intraoperative blood loss and duration of hospital stay were similar between groups.

POCD (n=22) No POCD (n=21) p value
CRP (mg/dl) 2 days postoperatively 232.5 [17.5-383.7] 98.5 [4.5-241.3] 0.009
Leucocytes (*10^9/l) 2 days postoperatively 10 [8-17] 8 [5-12] 0.012

Conclusions: In this small group of patients systemic inflammatory markers 2 days postoperatively were associate with POCD whereas postoperative markers of brain damage were not associated with POCD. This findings will need to be confirmed in a larger group of patients.

Acknowledgements: Supported by SNF Grant 32003B-121956

18AP2-2
Levobupivacaine 7.5 mg versus levobupivacaine 5 mg + sufentanil 2.5 µg spinal anaesthesia in the elderly undergoing hip fracture repair
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Background and Goal of Study: Hypotension is commonly observed adverse effect of spinal anaesthesia, especially in the elderly. Intrathecal coadministration of opioids enhances sensory block without increasing sympathetically blocked (1). In this study we evaluated a clinical profile of spinal anaesthesia produced with either levobupivacaine 7.5 mg or levobupivacaine 5 mg + sufentanil 2.5 µg in elderly patients undergoing hip fracture repair.

Materials and Methods: 40 ASA III-IV patients (75 - 92 yrs) were assigned to 2 groups in this prospective, randomized, double-blind study. Group L patients (n = 20) intrathecally received levobupivacaine 7.5 mg and Group LS patients (n = 20) levobupivacaine 5 mg + sufentanil 2.5 µg. Sensory (pin-prick test) and motor block (modified Bromage scale), hemodynamic data, time to first analgesic and side effects were recorded. T-test, Mann Whitney U-test and Fisher’s exact test were used, P < 0.05 was considered statistically significant.

Results and Discussion: Demographic data, ASA status, operation time and start value of systolic arterial pressure (SAP) and heart rate (HR) were comparable between the groups. Surgical anaesthesia was achieved in all 40 patients. The upper level of sensory block was T5 (T4 - T6) in Group L and T4 (T3 - T6) in Group LS, P = 0.21. Complete motor block had 12 (60%) Group L and 4 (20%) Group LS patients, P = 0.02. The mean duration of motor block was 98 ± 20 min in Group L and 74 ± 18 min in Group LS, P < 0.01. Maximum decrease of SAP from baseline was 35 ± 11% in Group L and 21 ± 9% in Group LS, P = 0.01 and of HR 14 ± 7% and 11 ± 6%, P = 0.22, respectively. Decrease of SAP < 80 mmHg had 8 (40%) Group L and 1 (5%) Group LS patient, P = 0.02 and decrease of HR < 50/min had 1 (5%) Group L patient. Time to first analgesic was 235 ± 53 min in Group L and 253 ± 58 min in Group LS, P = 0.74. Mild pruritus had 5 (25%) Group LS patients, P = 0.05. No postdural puncture headache, neurological complications, vomiting or respiratory depression were noted.

Conclusions: Levobupivacaine 5 mg + sufentanil 2.5 µg spinal anaesthesia provided similar sensory block and postoperative analgesia, but faster motor recovery and more stable cardiovascular profile than levobupivacaine 7.5 mg spinal anaesthesia in elderly patients undergoing hip fracture repair.

References:

A preoperative carbohydrate drink does not reduce insulin resistance or complications after elective hip surgery
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Background and Goal of Study: A preoperative carbohydrate drink is often claimed to alleviate the insulin resistance developing in response to surgery, and even to reduce the incidence of nausea (1). We tested this hypothesis in elective hip replacement, which is a very common operation worldwide.

Materials and Methods: Sixty patients with a mean age of 69 years underwent elective hip surgery under spinal anesthesia. They were randomized to (1) be fasting since midnight, (2) ingest 800 ml of tap water 2 hours before surgery, (3) ingest 400 ml + 200 ml of a nutritional carbohydrate drink (Preop, Nutricia) in the evening before + 2 hours before surgery. Insulin sensitivity was assessed on the day before, 2-3 hours after, and in the morning after the surgery.

The methods were the “Quicki”, an algorithm based on the baseline levels of glucose and insulin, and a 12-sample intravenous glucose tolerance test (IVGTT) which had previously been validated in 20 volunteers against the hyperinsulinemic glucose clamp. Muscle catabolism was assessed by measuring the postoperative urinary excretion of 3-methylhistidine. Postoperative complications were registered by a research nurse who visited the patient 2 days after the surgery.

Results and Discussion: The Quicki showed no reduction of the insulin sensitivity 2-3 hours postoperatively and a decrease by 8% in the morning of the next day. The IVGTT showed no change in insulin sensitivity 2-3 hours after surgery, but a reduction by 40% in the next morning. These data, as well as the 3-methylhistidine excretion, did not differ between the 3 study groups. The number of complications averaged 1.4, 1.6 and 1.6 per operation in the 3 groups. Nausea and vomiting occurred in 30% of the patients in all the groups. The lack of insulin resistance 2-3 hours after surgery can be understood by that a reduction of the area under the curve of plasma insulin by 40% fully explained the concomitant prolongation of the half-life of glucose by 60%.

Conclusion: A carbohydrate drink taken before elective hip surgery did not affect insulin resistance, muscle catabolism or the incidence of postoperative complications.

References:

Acknowledgements: Financial support was received from the Stockholm County Council, Olle Engkvist Byggmästare Foundation, and Karolinska Institutet.