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Abstract :

Background: Since the 1960s, since synthetic opioids have been introduced in clinical practice, anesthesia has been based on opioids and has been developed variations of balanced anesthesia combining opioids, inhalation and intravenous anesthetics. As a result we have received a safe and stress free anesthesia but there are also side effects of opioids such as respiratory depression, immunosuppression, muscle central rigidity, respiratory tract obstruction, negative inotropism, nausea, vomiting, hyperalgesia, urinary retention, postoperative ileus, tolerance and drowsiness. Therefore, the actual problem is to avoid these adverse events by reducing of opioid doses. For this purposes lidocaine perioperative intravenous infusion can be helpful but there is luck of evidence about its effectiveness, safety and optimal use for better outcome.

Case presentation: This is a retrospective non-randomized clinical trial including 185 adult patients of both sex with different types of elective surgery in whom lidocaine perioperative infusion performed. For all patients before induction of anesthesia lidocaine 1.5 mg/kg/h and ketorolac 50 mg had been injected. Patients were divided into two groups: group I – induction with fentanyl 2µkg/kg, propofol 1.4 – 2.0 mg/kg, atracurium 0.5 mg/kg., group II – induction without fentanyl, propofol and atracurium - same doses. Anesthesia maintenance - inhalation anesthetic (sevoflurane) 0.8 -1.2 mac, lidocaine 2 mg /kg/h, MgSO4 30-50 mg/kg, paracetamol 1000 mg, atracurium 0.5 mg/kg/h, fentanyl as needed. Postoperative analgesia - lidocaine 1 mg/kg/h during 2-8 h, opioids and nonsteroidal anti-inflammatory medications as needed. In group I (105 patients) fentanyl adjustment was needed in 9 cases (8.6%) In group II for 70% of cases (56 patients) anesthesia was opioid-free. Groups were equal according to types of surgery: major open upper abdominal and colorectal surgery (15 cases), laparoscopic colorectal surgery (29) appendectomy (12), laparoscopic cholecystectomy (77), breast surgery (7), hernia surgery (23), head and neck surgery (12), laparoscopic oesophageal surgery (10). Contraindications were patients with lidocaine allergy, complete atrioventricular block, bradycardia and hepatic insufficiency. In group I propofol dose for induction of anesthesia was significantly lower then in group II (1.42 mg/kg vs 1.83 mg/kg, $P<0.05$). In group II there was a significant hemodynamic reaction on skin incision (rise of heart rate and arterial blood pressure about 30% above baseline) and need in high MAC (1.2) of sevoflurane during first 30 minutes of surgery. No perioperative complications, no clinical signs of lidocain toxicicity. In all cases immediately after awaking and extubation was a need in opioid analgesia. After 8 h of lidocaine continuous infusion there was a stable analgesia and minimal or no needing in additional opioid or non-opioid analgesia during 24h. After laparoscopic colorectal and cholecystectomy surgery postoperative bowel sound recovery time in both groups of patients was practically equal - 150±25 min and 152±25 min respectively.

Biography :

Vakhtang Shoshiashvili is an anesthesiologist in Tbilisi State Medical University (TSMU) First University Clinic. He is also assistant professor of TSMU, faculty of medicine, department of anesthesiology and intensive care, associate professor, faculty of medicine, European University, associate professor, faculty of medicine, Kutaisi University

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