

Letter to the Editor

Levobupivacaine for local intraperitoneal anesthetics as a supplement to general anesthesia for laparoscopic surgery: a randomized double blind study

Dear Editor,

The intraperitoneal administration of local anesthetic intraoperatively in laparoscopic cholecystectomy (LC) can reduce the intensity of postoperative pain. This method has been in use since the early nineties and seems to be effective. A prospective, randomized, double-blind study was undertaken with written informed consent which was obtained from all patients. Each study group consisted of 40 ASA I-II patients scheduled to undergo elective LC for cholelithiasis under general anesthesia. The individuals, of both sexes, were aged 25-83 yr. Criteria for exclusion were: psychiatric disease, allergic reactions to drugs or local anesthetics, morbid obesity and severe chronic disease. Patients were also excluded, if they underwent surgery for acute cholecystitis or if the operation was converted to an open procedure. All patients were given a standard anesthetics comprising propofol 2-4 mg/kg, fentanyl 2 µg/kg, ondasetron 4 mg, i.v., rocuronium 0.6 mg/kg was used for muscular relaxation. Patients lungs were ventilated without nitrous oxide, but with sevoflurane 1-1.5%, with oxygen. Lung ventilation was adjusted to maintain an end-tidal carbon dioxide partial pressure of 4.7-5.3 kPa. Intra-abdominal pressure during laparoscopy was automatically maintained at 12 mmHg by a CO₂ insufflator. At the end of successful LC, patients were allocated randomly to one of three groups. Group 1 (n = 40) received physiological sodium chloride 30 ml, intraperitoneally. Group 2 (n = 40) levobupivacaine 0.25% 30 ml intraperitoneally. Group 3, (n = 40) bupivacaine 0.5% 30 ml. During closure of the wound, the incisional sites were infiltrated with levobupivacaine 20 ml. Residual neuromuscular blockade was antagonized with a mixture of neostigmine and atropine. In the postoperative period, patients were assessed on awakening and then at 1, after 6 and after 12 hours by a trained observer. Intraperitoneal pain at rest and during deep inspiration and any pain in the right shoulder were assessed on a visual analogue scale (VAS). The degree of postoperative pain was assessed with a VAS (0-100 mm) (0 - no pain, 100 - severe pain) at rest and on coughing. Pain, sedation and nausea scores for the first 6 h after operation were summed. Intraperitoneal local anesthetics would be expected to be useful for treating visceral pain. In our study it is likely that intraperitoneal bupivacaine in the right hypochondrial area had an analgesic effect³⁻⁵.

The combination of preincisional local infiltration and intraperitoneal instillation of L-B 0.25% shows an advantage for postoperative analgesia after laparoscopic cholecystectomy.

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Conflict of Interest

The Authors declare that there are no conflicts of interest.

References

- 1) PAPANIKOLAOU A, LAGOUDIANAKIS EE, ANTONAKIS P, FILIS K, MAKRI I, MARKOGIANNAKIS H, KATERGIANNAKIS V, MANOURAS A. Repeated intraperitoneal instillation of levobupivacaine for the management of pain after laparoscopic cholecystectomy. *Surgery* 2009; 3: 475-482.

- 2) EL-LABBAN GM, HOKKAM EN, EL-LABBAN MA, MORSY K, SAADL S, HEISSAM KS. Intra-incisional vs intraperitoneal infiltration of local anaesthetic for controlling early post-laparoscopic cholecystectomy pain. *J Minim Access Surg.* 2011; 3: 173-177.
- 3) GOLUBOVIC S, GOLUBOVIC V, CINDRIC-STANCIN M, TOKMAZIC V. Intraperitoneal analgesia for laparoscopic cholecystectomy: bupivacaine versus bupivacaine with tramadol. *Coll Antropol* 2009; 33: 299-302.
- 4) MAESTRONI U, SORTINI D, DEVITO C, POUR MORAD KOHAN BRUNALDI F, ANANIA G, PAVANELLI L, PASQUALUCCI A, DONINI A. A new method of preemptive analgesia in laparoscopic cholecystectomy. *Surg Endosc* 2002; 16: 1336-1340.
- 5) YEH CN, TSAI CY, CHENG CT, WANG SY, LIU YY, CHIANG KC, HSIEH FJ, LIN CC, JAN YY, CHEN MF. Pain relief from combined wound and intraperitoneal local anesthesia for patients who undergo laparoscopic cholecystectomy. *BMC Surgery* 2014, 14: 28.

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