Intravenous Regional Anesthesia

Evaluation Of Three Different

Additives To Lidocaine

Thesis

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Summary And Conclusion

Intravenous regional anesthesia (IVRA) is an effective way to provide anesthesia for hand surgery expected to last less than 1h, but it does not provide effective postoperative analgesia. In an attempt to improve perioperative analgesia, various analgesics have been administered concomitantly with the local anesthetic in IVRA with contradictory results. The present work was carried out to evaluate and compare three different additives (meperidine, ketorolac or clonidine) to lidocaine for intravenous regional anesthesia.

Our study comprised 80 adult patients (20-50 years), of both sex and ASA physical status I or II who were scheduled for elective hand or forearm surgery. They were randomly assigned to one of four equal groups 20 patients each:

Group I:

Each patient received 40 ml normal saline solution containing 200mg lidocaine (0.5% conc).

Group II:

Each patient received 40 mL normal saline solution containing 200mg lidocaine (0.5% conc)with added 1 mg/Kg meperidine.

Group III:

Each patient received 40 mL normal saline solution containing 200mg lidocaine (0.5% conc) with added 30 mg ketorolac.

Group IV:

Each patient received 40 mL normal saline solution containing 200mg lidocaine(0.5% conc) with added lug/Kg clonidine.

In the four studied groups, time to complete sensory and motor block was recoded. Using the verbal analog pain scale, pain was assessed 5 min, 1 and 2 hours after cuff release. Analgesia time (the time from complete sensory block until the patient's first opioid use, which coincided with a verbal analog pain scale score greater than 3) was recorded. The respiratory rate, Og saturation, heart rate and mean arterial blood pressure were measured 5 min before injection of IVRA solution and at 5,10 and 15 min after cuff release.

Intravenous boluses of 25 wg fetanyl were provided in the post anesthesia care unit whenever the VAS exceeded 3. The total number of fentanyl doses was noted. Patients were instructed to take one tablet acetamenophen every 4h as needed for pain at home and the total number of acetamenophen tablets required during the first 24h postoperatively was recorded.

The results of the present study showed that time to complete sensory or motor block did not change significantly among the four sutdied groups. The analgesia time increased significantly in group IV compared with groups III, II and I, and in group III compared with groups II and I and in group II compared with group I.

As regards to mean arterial blood pressure, heart rate, O2 saturation and respiratory rate changed insignificantly in the four studied groups in all the predetermined times.

The total doses of fentanyl provided in the post anesthesia care unit during the first 2 hours postoperatively and of acetaminophen tablets consumed during the first 24 hours postoperatively were decreased significantly in group IV compared with groups III, II and I, in group II compared with groups II and I and in group II compared with group I.

The incidence of adverse effects was more frequent in groups I and II (20%) in each, decreased slightly in group III and markedly in group IV (5%).

So we can conclude that although addition of either meperidine or ketorolac to lidocaine 0.5% for IVRA provided improved analgesia in the post anesthesia care unit during the first 2 hours after operation and diminished the need for analgesic supplements during the first day after operation yet, the addition of lug/Kg clonidine seems to be the superior in being more effective, well tolerated and causes no significant side effects.