

Comparison of analgesic and cardiopulmonary effects in epidural injection of lidocaine, bupivacaine and dexmedetomidine following ovariohysterectomy in the dog

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Abstract

Epidural anesthesia has been widely used as an adjuvant anesthetic technique in dogs due to its perioperative analgesia and reduction of general anesthetics requirements. This study aimed to compare the postoperative analgesia and cardiopulmonary changes following epidural injections of lidocaine, bupivacaine and dexmedetomidine after ovariohysterectomy in dogs. Fifteen healthy adult female dogs of mixed breed with an average weight of 12.76 ± 1.41 kg were randomly divided into three groups (lidocaine 2.5 mg/kg, bupivacaine 1 mg/kg and dexmedetomidine 10 µg/kg body weight, with a final volume of 0.36 mL/kg). Heart rate, respiratory rate, mean arterial pressure and rectal temperature were assessed by vital signs monitoring before epidural injection and during surgery time and hourly up to 6 hours after the end of the surgery. Pain assessment was done by SDS, VAS and UMPS methods hourly, immediately after surgery for up to 6 hours. Heart rate at 2 and 3 hours after surgery was lower in the dexmedetomidine group compared to the other two groups. Comparison of respiratory rate in the three groups showed that the respiratory rate in dogs in the dexmedetomidine group at 1, 3, 4 and 5 hours was lower than in the bupivacaine group. There were no significant differences between the three groups in the first 2 hours after surgery in terms of pain assessment by mentioned methods. In the UMPS method, at 4 and 5 hours after surgery, bupivacaine and dexmedetomidine had better analgesia compared to lidocaine. At 6 hours, dexmedetomidine had better analgesia than bupivacaine. Based on the results, it was concluded that dexmedetomidine has a better analgesic effect than other drugs.

Key words: Lidocaine, Bupivacaine, Dexmedetomidine, Epidural, Dog, Ovariohysterectomy

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