

البحث الخامس

Comparative Study Between Lidocaine and Levobupivacaine Versus Lidocaine, Levobupivacaine and Dexmedetomidine Combination During Peribulbar Anesthesia for Phacoemulsification Cataract Surgery

Joseph Makram Botros, Maged Labib Boules

Ain Shams journal of anesthesiology 2017, Vol 10: p 224-229

Abstract:

Background and objective Eye surgeries are very common nowadays. Most surgeries, including cataract surgeries, can be safely performed in an outpatient setting using local anesthesia. Levobupivacaine, a levorotatory isomer of the racemic mixture of bupivacaine, has been used at regional blocks, including local eye blockades. Dexmedetomidine, a potent, highly selective and specific α_2 -adrenoreceptor agonist, with both sedative and analgesic effects and no respiratory depression, is used as an adjuvant to local eye anesthesia to prolong the analgesic duration of the local anesthetic used. We expected that the addition of dexmedetomidine to levobupivacaine would increase both sensory and motor block durations compared with levobupivacaine alone.

Patients and methods In our study, a total of 80 patients of both sexes, aged 50–70 years, belonging to the American Society of Anesthesiologists (ASA) grade I and II, and scheduled for phacoemulsification cataract surgery were randomly allocated into one of two study groups: the levobupivacaine group (group L), in which 40 patients received 3 ml of 2% lidocaine with 10IU/ml

of hyaluronidase + 3 ml of 0.5% levobupivacaine+1 ml of normal saline; and the levobupivacaine dexmedetomidine group (group LD), in which 40 patients received 3 ml of 2% lidocaine with 10IU/ml of hyaluronidase+3 ml of 0.5% levobupivacaine+1 ml of dexmedetomidine (100µg).

Results There was no significant difference between the two groups regarding the onset times of lid akinesia, globe anesthesia, and globe akinesia ($P>0.05$). The duration of globe anesthesia, lid akinesia, and globe akinesia in the dexmedetomidine group was significantly longer than in the levobupivacaine group ($P<0.001$). In group LD, the first analgesic requirement was significantly delayed and the total analgesic consumption in the first 24h was significantly lower compared with group L ($P<0.0001$ for both).

Conclusion The addition of 100µg dexmedetomidine as an adjuvant to 2% lidocaine with 10IU/ml of hyaluronidase and 0.5% levobupivacaine in peribulbar anesthesia for cataract surgery significantly increases the duration of peribulbar block and improves the analgesic duration, without significant side effects, and significantly decreases the intraocular pressure.

Keywords: cataract surgery, dexmedetomidine, local anesthetics, peribulbar block