

Dexmedetomidine as an additive to local anesthetics compared with intravenous dexmedetomidine in peribulbar block for cataract surgery

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ABSTRACT

Background: No studies compared parenteral dexmedetomidine with its use as an adjuvant to ophthalmic block. We compared between adding dexmedetomidine to bupivacaine in peribulbar block and intravenous (IV) dexmedetomidine during peribulbar block for cataract surgery.

Materials and Methods: A prospective, randomized, double-blind study on 90 patients for cataract surgery under peribulbar anesthesia. Study included three groups; all patients received 10 ml of peribulbar anesthesia and IV infusion of drugs as follows: Group I: Received a mixture of bupivacaine 0.5% (4.5 ml) + lidocaine 2% (4.5 ml) + normal saline (1 ml) + 150 IU hyaluronidase + IV infusion of normal saline, Group II: Received mixture of bupivacaine 0.5% (4.5 ml) + lidocaine 2% (4.5 ml) + dexmedetomidine 50 µg (1 ml) +150 IU hyaluronidase + IV infusion of normal saline and Group III: Received mixture of bupivacaine 0.5% (4.5 ml) + lidocaine 2% (4.5 ml) + normal saline (1 ml) +150 IU hyaluronidase + IV dexmedetomidine 1 µg/kg over 10 min; followed by 0.4 µg/kg/h IV infusion. We recorded onset, duration of block, Ramsay Sedation Score, intra-ocular pressure (IOP), hemodynamics, and adverse effects.

Results: There was a significant decrease in the onset of action and increase in the duration of block in Group II as compared with the Group I and Group III. Mean Ramsay Sedation Score was higher in Group III. The IOP showed a significant decrease in Group II and Group III 10 min after injection ($P < 0.01$). Heart rate showed a significant decrease in Group III in comparison with the two other groups ($P < 0.05$). Only two patients in Group III developed bradycardia.

Conclusion: Dexmedetomidine as an additive shortens onset time, prolong block durations and significantly decreases the IOP with minimal side effects. IV dexmedetomidine, in addition, produces intra-operative sedation with hemodynamic stability.