ABSTRACT

Background & Objectives:

The present clinical study was conducted to evaluate the hemodynamic responses, onset of sensory and motor block, duration of sensory and motor blockade, post operative analgesia and complications between Bupivacaine - Lignocaine and Bupivacaine - Lignocaine with Dexmedetomidine combination in ultrasound guided Supraclavicular brachial plexus block.

Methods:

The study was conducted on 60 ASA I and II patients of either sex posted for various elective or emergency surgeries of the upper limb involving elbow, forearm and hand surgeries. The subjects were divided into two groups, Group I - Patients receives 15ml of 0.5% Bupivacaine + 15ml of 1% Lignocaine and Group II - Patients receives 15ml of 0.5% Bupivacaine + 15ml of 1% Lignocaine + Dexmedetomidine 0.75 μg/kg. Patients vital parameters were monitored throughout the procedure and in the post-operative period for 48 hours. A thorough observation was made on onset of sensory and motor blockade, duration of analgesia, degree of motor blockade and complications.
**Result**

The duration of sensory blockade (mean difference -3.4, p value <0.00001), and motor blockade (mean difference -2.47 hours, p value <0.00001) and both these findings were statistically significant.

The mean duration time of sensory block in Group A (Bupivicaine and Lignocaine) was 7.84 minutes whereas in Bupivicaine and Lignocaine with Dexmedetomidine was 11.23 minutes. The mean duration time of motor block with Bupivicaine and Lignocaine was 7.04 minutes whereas in Bupivicaine and Lignocaine with Dexmedetomidine group was 9.51 minutes.

The duration time of effective Analgesia with Bupivicaine and Lignocaine was 9.65 minutes whereas in Bupivicaine and Lignocaine with Dexmedetomidine group was 13.84 minutes. It indicates that duration of complete and effective Analgesia in Group B is prolonged than Group A.

The hemodynamic parameters like Heart Rate and Blood Pressure and SpO₂ were more in the optimal range in Dexmedetomidine group than Bupivacaine and Lignocaine group. The respiratory parameters were almost similar in both the study groups. The incidence of bradycardia was lesser in our study (only 3 cases) probably because of the lower dose of Dexmedetomidine we used. In our study we used 0.75 μg /kg of Dexmedetomidine with a maximum of 50 μg.
**Interpretation and conclusion**

In this study, Bupivacaine, Lignocaine with Dexmeditomidine seems to be advantageous over Bupivacaine and Lignocaine in terms of onset, quality and intensity of sensory and motor blockade. The duration of analgesia is clinically and statistically significantly prolonged in Bupivacaine, Lignocaine with Dexmeditomidine group.

**Keywords:** Bupivacaine, Lignocaine, Dexmeditomidine, USG, supraclavicular brachial plexus block.