

# **Effect of addition of hyaluronidase as an adjuvant to local anesthetics in ultrasound-guided supraclavicular brachial plexus block.**

ملخص البحث باللغة الانجليزية:

## **Background**

This study was carried out to evaluate the efficacy of hyaluronidase as an adjuvant to the mixture of local anesthetics in ultrasound-guided supraclavicular brachial plexus block.

## **Methods**

Ninety patients received ultrasound-guided brachial plexus block through supraclavicular approach. They were then randomly divided into three groups: group C, group H1, and group H2. Group C patients received 2% (15 ml) lignocaine and 0.5% (15 ml) bupivacaine, making a total volume of 30 ml, by triple-injection technique. Group H1 patients received 2% (10 ml) lignocaine and 0.5% (10 ml) bupivacaine plus 0.9% (10 ml) normal saline containing 900 IU (90 IU/ml) hyaluronidase, making a total volume of 30 ml, by triple-injection technique. Group H2 patients received 2% (10 ml) lignocaine and 0.5% (10 ml) bupivacaine plus 0.9% (10 ml) normal saline containing 900 IU (90 IU/ml) hyaluronidase, making a total volume of 30 ml, by single-injection technique. Parameters such as needling time, onset of sensory block, onset of motor block, total dose of intraoperative rescue analgesics, rate of success of the block, duration of sensory block, duration of motor block, and possible side effects were measured.

## **Results**

Time needed to perform the block was significantly shorter in the H2 group compared with the C and H1 groups. Onset of sensory block was statistically significantly lower in the two groups in which hyaluronidase was used compared with that in group C. Onset of motor block was statistically significantly lower in H1 and H2 groups compared with that in group C. The mean total intraoperative fentanyl administration was found to be non significantly higher in group C compared with groups H1 and H2. The success of the ultrasound-guided block was 90% in group C versus 96.6% in groups H1 and H2. As regards the duration of sensory and motor block there were no statistically significant differences between the three studied groups. Comparison between the three groups revealed nonsignificant differences as regards the time of first analgesic dose. The total dose of morphine given during the first 24 h postoperatively was significantly lower in the control group compared with that in groups H1 and H2.

## **Conclusion**

The use of hyaluronidase as an adjuvant to the local anesthetic reduces the time to reach complete sensory block of ultrasound-guided supraclavicular brachial plexus blocks and therefore shortens the total anesthetic time before operation. Although it also reduces the block duration, hyaluronidase had only a little effect on the total analgesic duration and on the consumption of postoperative analgesics. Also single-injection technique is sufficient for performing a successful block.