Ketamine versus dexmedetomidine as an adjuvant in ultrasound-guided supraclavicular brachial plexus block: A double-blind randomized clinical trial.

ملخص البحث باللغه الانجليزيه:

Background

Nerve block is a common anesthetic approach for upper limb surgery. Many trials have been made to enhance the anesthetic and analgesic effects of the block by adding various adjuncts to the anesthetic agent. ***Dexmedetomidine*** have been added to the local anesthetics for this purpose with varying degrees of success. ***Ketamine*** is a noncompetitive blocker of the N-methyl-D aspartate (NMDA) receptor, it has shown that adding ketamine to epidural bupivacaine or lidocaine could increase the duration of regional anesthesia and postoperative analgesia.

Aims: compare the effect of ketamine and dexmedetomidine as additives to bupivacaine on onset and duration of the block, post-operative VAS, and analgesic consumption, after ultrasound-guided supraclavicular nerve block.

Settings and Design: Our study was a randomized, prospective, double-blinded and controlled clinical study

Supraclavicular brachial plexus block was done for 75 patients, volume of 40 mL of the study drug solution was administered around the brachial plexus, multiple injections was used to deposit the total amount of the study drugs. The patients were randomly classified into three groups using computer generated table numbers each contain (25) patient. Ketamine group (group K) :20 ml 0.5%bupivacaine and 20 ml 0.9% normal saline plus 1 mg\kg ketamine, Dexmedetomidine group (group D): 20 ml 0.5% bupivacaine and 20 ml 0.9%

normal saline plus 1µg\kg dexmedetomidine. Control group (group C): 20 ml 0.5%bupivacaine and 20 ml 0.9% normal saline.

Parameters assessed:

Hemodynamic data as HR, MAP and Spo2 were assessed. Sensory, motor block, onset time for sensory and motor block, sensory and motor block duration, visual analogue scale (VAS), time of first analgesic request, total analgesic requirements in 24 hours, sedation score and adverse effects

Results

Regarding onset of sensory block, D group were rapid onset than K and C groups. The onset of motor block was rapid in the D group than K and C groups. Duration of sensory and motor block was longer in group D than group K and group C respectively. Time of administration of the first dose of diclofenac was significantly more in the D group than K and C groups respectively, but the total diclofenac dose was less in D and become more in K group and much more in C group

VAS readings were significantly lower in D and K groups when compared to C groups, the readings in K group were significantly higher than D group.

There were no significant differences among the three groups in the incidence of adverse effects.

Conclusion: ketamine and dexmedetomidine can safely use in sonar guided brachial plexus slim blocks with nearly comparable analgesic and sedative effects in patients with ASA I and II.