



A COMPARATIVE STUDY OF CLONIDINE AND DEXMEDETOMIDINE AS AN ADJUNCT TO BUPIVACAINE IN SUPRACLAVICULAR BRACHIAL PLEXUS BLOCK IN PATIENTS UNDERGOING ELECTIVE UPPER LIMB SURGERY

Anaesthesiology

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ABSTRACT

Inadequate duration and analgesia of sensory and motor block with side effects is common with supraclavicular brachial plexus block despite of several adjuvants available. Recently, Dexmedetomidine has been suggested as an alternative to clonidine. Aim of study was to compare the effectiveness of clonidine Vs dexmedetomidine to bupivacaine as adjuvant in supraclavicular brachial plexus block undergoing elective upper limb surgery.

KEYWORDS

Dexmedetomidine, clonidine, inadequate analgesia, adjuvants.

INTRODUCTION

Nowadays, Upper limb surgeries are commonly performed under brachial plexus block to avoid the risk of airway complications and to avoid the risk associated with general anaesthesia. But inspite of good local anaesthetics, search for adjuvants to regional nerve block with drugs that prolong the duration of analgesia is always there. Various studies have investigated several adjuvants to hasten onset and prolong the duration of analgesia but results have been inconclusive because of associated side effects or doubtful efficacy. Alpha-2 adrenergic receptor agonists have been the focus of interest for their sedative, analgesic, peri-operative sympatholytic and cardiovascular stabilizing effects with reduced anaesthetic requirements. Clonidine is a selective alpha 2 adrenergic agonist with some alpha 1 agonist property. It is effective sedative and analgesic which reduces the amount of anaesthetic agents when used as part of anaesthetic technique. Dexmedetomidine is a potent, selective and specific agonist of alpha 2 adrenoreceptors with alpha 2: alpha 1 selectivity ratio of 1620 compared to that of 220 for clonidine and is

being suggested as an alternative to clonidine to prolong the duration of block and postoperative analgesia with less side effects when added to local anaesthetic in brachial plexus blocks. The aim of our study was to compare the effect of adding either clonidine or dexmedetomidine to bupivacaine for supraclavicular brachial plexus block in patients undergoing elective upper limb surgery with regard to onset, duration of sensory and motor blockade along with duration of analgesia and associated side effects.

METHODS

Sixty patients undergoing elective surgery under supraclavicular brachial plexus block were randomly allotted two groups.

Group I Bupivacaine 0.25% 39ml + 50ug Dexmedetomidine.

Group II Bupivacaine 0.25% 39ml + 150ug clonidine.

Volume 40 ml

Primary objective - To compare the onset, duration of (sensory, motor block and analgesia)

Secondary objective - To compare the incidence of sedation, hypotension, bradycardia and allergic reactions.

RESULT

Onset of sensory block was found earlier with dexmedetomidine (2.60 ± 0.674 min) Vs clonidine (3.733 ± 1.048 min) ($p < 0.05$) Onset of motor block was found earlier with clonidine (3.90 ± 0.504 min) Vs dexmedetomidine (4.50 ± 0.466 min). Duration of sensory and motor blockade was prolonged with dexmedetomidine (387.00 ± 81.532), (615.00 ± 72.96 min) Vs clonidine (340.89 ± 53.732) (453.83 ± 96.64) Duration of analgesia was prolonged ($P < 0.05$) with dexmedetomidine (455.33 ± 94.018 min) Vs clonidine (341.66 ± 52.855 min) Dexmedetomidine was found to have low VAS than clonidine without any potential side effects.

CONCLUSION

Bupivacaine 0.25% with adjuvant Dexmedetomidine (50ug) resulted in earlier onset, duration and analgesia of sensory and Motor block. Dexmedetomidine can be considered as an alternative to Clonidine.