ABSTRACT

INTRODUCTION

Painless surgery is the ultimate goal for all anaesthesiologists and the heartfelt wish of all patients undergoing any type of surgery. Regional anaesthetic technique like nerve blocks offer pain free surgical field during and after the intra operative period to patients with a lot of other advantages over general anaesthesia. Early approach to nerve blocks followed the dictum of Moore which states “No Paraesthesia; No anaesthesia”. The “art” of peripheral nerve blockade performed by gifted individuals has now turned into a “science” with the help of peripheral nerve stimulators and ultrasound imaging.

AIM

To study the quality of blockade while using two different current strengths for supraclavicular block with nerve stimulator in elective upper limb surgeries below elbow.

DESIGN

Prospective randomized double blinded study conducted at Department of Anaesthesiology, Chengalpattu medical college & hospital.

MATERIALS AND METHODS

After obtaining Institutional Ethical Committee approval, 60 patients belonging to ASA I or II in the age group of 16 to 60 years undergoing elective upper limb surgeries below elbow were selected. Written informed consent was obtained. The patients were divided into two groups based on computerised randomisation. All the patients received supraclavicular block by subclavian perivascular approach of Winnie with 15 ml of 2% Lignocaine with 1:2,00,000 adrenaline plus 15 ml of 0.5% bupivacaine. In Group A (0.5 mA), the nerve stimulator was initially set to deliver a current of 0.9 mA. After obtaining twitch of
hand or fingers in flexion or extension, the current strength was gradually reduced
till response was similarly obtained with 0.5 mA and the drug was injected. In
Group B (0.9 mA), the nerve stimulator was initially set to deliver a current of 0.9
mA. After obtaining twitch of hand or fingers in flexion or extension, the drug was
injected. The following parameters were noted by a blinded observer – duration of
surgery, number of attempts to perform the block, time taken to perform the block,
time of onset of sensory blockade, time of onset of motor blockade, total duration of
sensory blockade, total duration of motor blockade, time taken for Rescue analgesia
and complications.

STATISTICAL ANALYSIS

The data were analyzed using the SPSS (version 16) software. The parametric
data were analyzed with Student’s ‘t’ test and the nonparametric data were analyzed
with Chi-square test. A p < 0.05 was considered statistically significant.

OBSERVATION AND RESULTS

The two groups showed no significant difference with regard to demographic
data like age, sex and weight. Time taken to perform the block was similar in both
groups at 3.87±1.224 minutes in Group A and 3.33±0.844 minutes in Group B with
a ‘p’ value of 0.054. The onset of sensory blockade was similar at 6.47±2.33
minutes in Group A and 6.36±2.438 minutes in Group B with a ‘p’ value of 0.862.
The onset of motor blockade was also similar at 11.67±2.975 minutes in Group A
and 11±2.694 minutes in Group B with a ‘p’ value of 0.376. The duration of motor
blockade was 363.33±19.357 minutes in Group A and 364.64±24.416 minutes in
Group B with a ‘p’ value of 0.821 which was statistically insignificant. The time for
first rescue analgesia was statistically insignificant at 412.67±18.742 minutes in
Group A and 410.36±22.849 minutes in Group B with a ‘p’ value of 0.675. There
were no complications in both the groups.
CONCLUSION

Supraclavicular block performed at 0.5 and 0.9 mA using nerve stimulator for upper limb surgeries below elbow is comparable in terms of attempts at block performance, time taken to perform block, onset of block and duration of block. The success rate was 100 % with no complications in both groups. Hence, nerve stimulator guided blocks may be performed at the initial seeking current itself (< 1 mA) to avoid multiple attempts and unnecessary needle manipulations which may prove harmful to the patient.

KEYWORDS

Brachial plexus block, Supraclavicular block, Nerve stimulator, Subclavian perivascular approach, Current strengths.