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Efficacy of Varying Doses of Dexamethasone with Lignocaine in Supraclavicular Brachial Plexus Block in Upper Limb Surgeries

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Abstract

Objectives: To compare the effectiveness of inj. Dexamethasone 4mg added to 1.5% lignocaine with adrenaline with inj Dexamethasone 8mg added to 1.5% lignocaine with adrenaline in Supraclavicular Brachial Plexus Block in terms of onset of sensory and motor blockade andduration of sensory and motor blockade.

Materials and Methods: The study was carried out as a Prospective, randomized clinical trial among 150 patients who underwent different surgical procedures under supraclavicular brachial plexus block. They were randomized into three groups.

GROUP A: Patients belonging to this group are given supraclavicular brachial plexus block with 4 mg dexamethasone as adjuvant to 1.5 %lignocaine with adrenaline (7mg/kg).

GROUP B: Patients belonging to this group received supraclavicular brachial plexus block with 8 mg dexamethasone as adjuvant to 1.5 % lignocaine with adrenaline (7mg/kg).

GROUP C: Patients belonging to this group received supraclavicular brachial plexus block with 2ml of normal saline added to 1.5 % lignocaine with adrenaline (7mg/kg). The three groups were compared with regard to onset of sensory and motor blockade andduration of sensory and motor blockade.

Results: No statistically significant difference was reported between the three groups in demographic variables. The mean time required for onset of sensory block in Group A and Group B is 11.2 minutes and in Group–C is 14.26, onset of motor block Group A and Group B is 13.0 minutes and in Group–C is 17.0 min. The average duration of sensory block in Group B>A>C. The average duration of Motor block in Group B is 242min, and in Group A with 192 min and with Group C is 153min.

Conclusion: In conclusion, addition of dexamethasone to local anaesthetics in supraclavicular brachial plexus block results in a faster onset and prolonged duration of sensory and motor blockade. Higher dose (8mg) of dexamethasone is more efficacious than lower dose (4mg) of dexamethasone as an adjuvant with local anaesthetics in terms of duration of sensory block, motor block and analgesia but equally efficacious in onset of sensory and motor blockade.

Keywords: Brachial plexus block; Clonidine; Dexamethasone; Analgesia.

Introduction

Peripheral nerve blocks are now gaining widespread popularity for perioperative pain management because of their distinct advantages over general and central neuraxial anesthesia. Peripheral nerve block of upper limb includes the various techniques of brachial plexus block. Multiple approaches to brachial plexus block have been described like

interscalene, supraclavicular, infraclavicular and axillary. Of all, supraclavicular approach is the easiest and most consistent method for anaesthesia and perioperative pain management in surgery below the shoulder joint.

Supraclavicular brachial plexus block is popular mode of anaesthesia due to its effectiveness in terms of cost, performance, margin of safety and good post operative analgesia1. It is done at the distal trunk – proximal division level. At this point the brachial plexus is compact and a small volume of local anaesthetic provides rapid onset of reliable blockade of brachial plexus. Pneumothorax (1–6%).[2,3,4,5,6] Hemothorax, Horner's syndrome and phrenic nerve block are the potential complications.

In 1885, brachial plexus is introduced by William Halstead who performed block by exposing the roots, many modifications has been done in the technique. Classical method to locate nerves for peripheral nerve blocks.

With the introduction of peripheral nerve stimulator which uses electric current to elicit motor stimulation of nerves and confirm the proximity of the needle to the nerve, there has been good success rate in brachial plexus block along with reduction of drug requirement. Peripheral nerve stimulator technology utilizes objective end points for nerve localization and does not depend on patient's subjective feeling for effective nerve localization. An effective use of PNS technology mandates knowledge of anatomy with respect to optimal needle insertion site to achieve desired evoked motor response (EMR).

Wide variety of drugs have been used as adjuvant with local anaesthetics in brachial plexus block to achieve quick, dense and prolonged block.[7] Drugs like Morphine, Clonidine, Dexmedetomidine, pethidine, Butorphanol, Buprenorphine are commonly used along with local anaesthetics for this purpose. As Morphine, Buprenorphine, Pethidine are associated with side effects like heavy sedation, respiratory depression and psychomimetic effects, drugs with as minimal side effects as possible are always looked for.

Dexamethasone is the most widely studied drug used as an adjuvant to local anaesthetic in peripheral nerve block.[5,6] Steroids have nerve block prolonging effects. Analgesic action is by blocking transmission of nociceptive myelinated c-fibers and suppressing ectopic neuronal discharge. This effect is brought by altering the function of potassium channels in the excitable cells. Thus, dexamethasone was selected as an adjuvant to local anaesthetics in supraclavicular brachial plexus block in our study because it has been reported to prolong duration of action of local anaesthetics and respiratory depression is less common.

Aims and Objectives

To evaluate the efficacy of inj. dexamethasone 4mg added to 1.5% lignocaine with adrenaline (7mg/kg) compared to inj. Dexamethasone 8mg added to 1.5% lignocaine with adrenaline (7mg/kg) in supraclavicular brachial plexus block in patients undergoing upper limb surgeries with respect to

1. Onset of sensory blockade and motor blockade
2. Duration of motor blockade
3. Duration of analgesia (time to first rescue analgesic)
4. Complications /side effects if any

Materials and Methods

After institutional approval, this randomized controlled clinical control comparative study was conducted from December 2016 to October 2018 over a period of two years in the Department of Anaesthesiology, Government General Hospital/ Rangaraya Medical College, Kakinada.

Inclusion Criteria: The following criteria were taken for including the patients in this study,

1. ASA status I and II of both genders
2. Age between 18– 65 years
3. Patients posted for elective hand and forearm surgeries under supraclavicular block

Exclusion Criteria:

1. Patient refusal
2. Known allergy to local anaesthetics
3. Local infection
4. Inability to insert needle due to splint, cast
5. Chronic obstructive pulmonary disease
6. Phrenic nerve palsy on contralateral side

Study Design: This prospective, randomized, controlled study conducted on 150 ASA I and II patients undergoing upper limb surgeries under supraclavicular brachial plexus block who fulfilled inclusion criteria. The study was started after receiving institutional ethical committee approval and informed written consent from all the patients

and they were randomly divided into three groups.

Group A: Patients belonging to this group are given supraclavicular brachial plexus block with 4 mg dexamethasone as adjuvant to 1.5% lignocaine with adrenaline (7mg/kg).

Group B: Patients belonging to this group received supraclavicular brachial plexus block with 8 mg dexamethasone as adjuvant to 1.5% lignocaine with adrenaline (7mg/kg).

Group C: Patients belonging to this group received supraclavicular brachial plexus block with 2ml of normal saline added to 1.5 % lignocaine with adrenaline (7mg/kg).

Methodology

Pre anaesthetic evaluation

All the patients were thoroughly evaluated preoperatively by taking detailed history, and general and systemic examination of patient. The pre anaesthetic evaluation included the demographic data of the patient like age, sex, height and weight of the patients.

Informed consent was obtained from all study patients after explaining the procedure which is performed and the patients are educated regarding the pain scale.

Procedure

The basal parameters pulse rate, respiratory rate, blood pressure and spo_2 were recorded before starting the case. Peripheral venous cannulation was done with 18G IV cannula in opposite arm and all the patients were preloaded with 10ml/kg. Ringer lactate solution. Each patient would be given 0.03mg/kg of midazolam intravenously (IV) as a premedication 15 mins before beginning the block technique. Under strict aseptic precautions all the patients received brachial plexus block through the supraclavicular approach.

Position of the Patient

Patient is kept in supine position, with a pillow under the shoulder and head turned to non operative side with arm by side drawn to depress the shoulder. In this position, the superior surface of the first rib is raised anteriorly and ensures more space and better approach.

Land Marks

- A point midway and 1 cm above the superior border of the clavicle.
- The midpoint of the clavicle is the point midway between the acromioclavicular and the sterno clavicular joints.
- The lateral border of the sternocleidomastoid muscle, lateral to subclavian artery above the midpoint of the clavicle.

Technique

An intradermal wheal was raised 1cm above the midpoint of corresponding clavicle with 0.5cc of 1.0% lignocaine solution. Neural localisation was achieved by using a nerve locator connected to a 22G, 50 mm long short bevel, insulated stimulating needle which was passed 1 cm above the midpoint of the clavicle after palpating subclavian artery pulsations, downwards, backwards, and medially towards upper surface of 1st rib.

The location end point was distal motor response with a current of 0.5mA following negative aspiration of blood to confirm that the needle was not in a subclavian vessel or in pleura, 25 to 30ml of solution containing local anaesthetic with added adjutants was injected in 3ml increments. A 3 min massage was performed to facilitate an even drug distribution.

Group A–25 to 30 ml of 1.5% lignocaine with 1:200000 adrenaline (7mg/kg) plus 2ml of dexamethasone (4mg).

Group B–25 to 30 ml of 1.5% lignocaine with 1:200000 adrenaline (7mg/kg) plus 2ml of dexamethasone (8mg).

Group C–25 to 30ml of 1.5% lignocaine with 1:200000 adrenaline (7mg/kg plus 2ml of normal saline.

In supraclavicular route of brachial plexus block the plexus is blocked where it is compactly arranged at the level of the 3 trunks. The medial aspect of upper arm, up to the elbow supplied by the intercostobrachial nerve which is lateral cutaneous branch of the anterior primary ramus of the second thoracic nerve is not anaesthetized by the block. This nerve is blocked at the medial aspect of the upper arm by infiltrating 5cc of 1.5% lignocaine solution, starting at the medial aspect of upper arm up to the insertion of pectoralis major.

From the time of performing supraclavicular blockade, parameters observed in the three groups are:

1. onset time of sensory blockade
2. onset time of motor blockade
3. duration of motor blockade
4. duration of sensory blockade
5. time to first rescue analgesic
6. complications
7. hemodynamic variables like Heart rate, Systolic Blood Pressures, Diastolic Blood Pressures, Mean Arterial Pressures, and Saturation SpO_2, were monitored continuously every 15 min intra operatively and every one hour postoperatively.

Sensory block was assessed by pinprick method. Assesment of sensory block was done at each minute after completion of drug injection in the dermatomal areas corresponding to median nerve, ulnar nerve,radial nerve and musculocutaneous nerve till complete sensory nerve blockade.

Onset of sensory block: it was measured as the period from the time of injection of local anaesthetic solution to the absence of pinprick sensation as experienced by the patient.

Sensory block was graded as:

Grade 0: sharp pin felt.

Grade 1: analgesia, dull sensation felt (sensory onset).

Grade 2: anaesthesia, no sensation felt (complete sensory block).

Assessment of motor blockade was carried out by the same observer at each minute till complete motor blockade after drug injection.

Motor blockade was determined using a modified bromage scale for upper extremities on a 3 point scale.

Grade 0: It is normal motor function with full flexion and extension of elbow, wrist, and fingers.

Grade 1: It is decreased motor strength with ability to move the fingers only (onset).

Grade 2: It is complete motor block with inability to move the fingers.

Duration of sensory block: It was taken as the period from the time of loss of pinprick sensation to the reappearance of pinprick sensation.

Duration of analgesia: It was the time between the injection and the onset of pain and request for rescue analgesic. Rescue analgesia (RA) was given in form of inj Diclofenac sodium (1.5mg/kg) intramuscularly along with oral paracetamol 500mg at visual analogue scale of ≥5 which was assessed every hour after shifting the patient to the post operative ward. The time of administration of first rescue analgesia was noted.

The patients were observed for any side effects like nausea, vomiting and complications like pneumothorax, haematoma, local anaesthetic toxicity, and post –block neuropathy in the intra and post operative periods.

Statistical Data: At the end of study, all the data were entered in Micro Soft excel sheet and statistically analysed using SPSS Software version 16.0.

- Diagrammatic representation
- Descriptive data presented as mean, SD.
- ANOVA test was applied for demographic data, haemodynamic parameters, onset and duration of sensory and motor blockade and duration of analgesia.
- Chi Square test was applied for sex , ASA.
- P- value was considered significant if <0.05 and highly significant if<0.001.

Observations and Results

The present clinical study consists of 90 patients of ASA grade 1 and II undergoing upper limb surgeries under supraclavicular block were selected and divided into 3 groups.

Data was collected in all three groups for following parameters and observations of the analysed data were tabulated as follows.

All demographic data like Age, weight, sex, ASA grading and duration of surgery are comparable in all three groups indicating no ststistical significance.

Comparison of onset of Sensory Block

Table 1: Comparison of onset of sensory block between three groups.

Variable	Group	N	MEAN	Standard Deviation	P value
Onset of sensory block	GROUP A	50	11.200	1.5119	0.001
	GROUP B	50	11.260	1.8605	
	GROUP C	50	14.260	1.7120	

P=0.001 which is statistically significant.

In group A and group B the mean onset time of sensory blockade was around 11.20 minutes and in group C, onset time is 14.26. P value is 0.001 which is statistically significant, indicating that onset of

sensory blockade was faster when dexamethasone is added to lignocaine than plain lignocaine.

Comparison of onset of Motor Blockade

Table 2: Comparison of onset of motor block between three groups.

Time	Group	N	MEAN	Standard Deviation	P value
Onset of motor block	Group A	50	13.600	1.6162	0.001
	Group B	50	13.900	1.6812	
	Group C	50	17.020	1.6720	

P=0.001 value which is clinically significant. In both the groups A and B the onset of motor block was around 13 minutes, when compared to 17 minutes in group C, showing that onset of motor blockade was earlier when dexamethasone is added to lignocaine than plain lignocaine.

Comparison of Duration of Sensory Blockade

It was taken as time interval between the end of local anaesthetic administration and return of sensations by pin prick.

Table 3: Comparison of duration of sensory block between three groups.

Variable	Group	N	Mean	Standard Deviation	P value
Duration of sensory block	Group A	50	240.000	26.8784	0.001
	Group B	50	300.800	28.2727	
	Group C	50	195.000	25.2538	

P = 0.001 (< 0.05) represent statistical significance, and the duration of sensory blockade is more in Group B > Group A > Group C., showing that addition of 8mg Dexamethasone to lignocaine has prolonged sensory blockade than addition of 4mg Dexamethasone to lignocaine which is superior to plain lignocaine.

Duration of Motor Block

Table 4: Comparison of duration of motor block between three groups.

Variable	Group	N	Mean	Standard Deviation	P value
Duration of motor block	Group A	50	192.200	29.9176	0.001
	Group B	50	242.800	30.9074	
	Group C	50	153.800	20.6911	

P less than 0.001(<0.05)

The mean duration of motor block in group B was 242 minutes which was significantly greater than the average duration of motor block 192 minutes in group A and significantly greater than average duration of block 153 minutes in group C with a p value of 0.001 indicating that the duration of analgesia was significantly increased in group B when compared to group A patients and group C patients.

Comparison of Duration of Analgesia (time of administration of first rescue analgesia)

Table 5: Comparison of duration of analgesia (time to first rescue analgesic).

Time	Group	N	MEAN	Standard Deviation	P value
Time for first Rescue analgesia	Group A	50	311.600	22.9783	0.001
	Group B	50	358.400	26.2919	
	Group C	50	249.200	24.647	

P = 0.001 (p<0.05)

The average duration of analgesia in group B was 358 minutes which was significantly greater than the average duration of analgesia of 311 minutes in group A which is significantly greater than average duration of analgesia of 249 minutes in group C with a p value of 0.001 indicating that the duration of analgesia is significantly prolonged in group B when compared to group A followed by group C patients.

Visual Analogue Scale

After shifting the patient to post operative ward the pain scores of the patient were assessed every hourly by visual analogue for pain assessment 0–10.The time of shifting the patient to postoperative ward was taken as 0 hour and assessed .The observations of the scores were tabulated as follows

Table 6: Comparison of VAS.

Time	Group	Visual analogue scale	Standard Deviation	P value
1HR	Group A	.000	.0000	
	Group B	.000	.0000	
	Group C	.000	.0000	
2 HR	Group A	.000	.0000	
	Group B	.000	.0000	
	Group C	.000	.0000	
3 HR	Group A	.000	.0000	
	Group B	.000	.0000	0.00
	Group C	.980	.9998	
4 HR	Group A	1.420	1.3566	
	Group B	.000	.0000	0.00
	Group C	4.240	.9381	

5 HR	Group A	4.120	1.0230	
	Group B	.720	.9697	0.00
	Group C	3.840	.7656	
6 HR	Group A	3.700	.7071	
	Group B	4.060	.8901	0.00
	Group C	3.420	.7584	
7HR	Group A	3.300	.5440	
	Group B	3.420	.4986	0.55
	Group C	3.340	.6263	

The results were, up to 3 hours, none of the patients in all the groups complained of pain. By 4th hour mild pain was complained in group A which did not required any analgesia and severe pain was complained in group C patients with VAS nearly 5 which required rescue analgesia. By 5th hour, patients in group A complained of severe pain which required rescue analgesia.

By the end of 6th hour there was significant pain complained by group B that required administration of rescue analgesia where was as in group A and group C only mild pain was complained as rescue analgesia was given to them.

By the end of 7th hour mean pain scores were comparable between the three groups where all groups had decreased pain scores because of rescue analgesia administration.

Comparison of Haemodynamic Parameters

The basal haemodynamic parameters like heart rate, systolic blood pressure, diastolic blood pressure and mean arterial pressures were recorded initially and after drug administration every 5 min till 15 minutes and every 15 min till 1 hour and every 30 minutes until 120 minutes were recorded and compared which showed no statistical significance.

Side Effects and Complications

We did not observe any complications like haemothorax, pneumothorax, convulsions local anaesthetic toxicity in any patients of our study groups.

Discussion

Regional anaesthesia techniques can be utilized for analgesia not only during the operative period, but during the postoperative period as well and avoids complications of general anaesthesia. The brachial plexus block consists of injecting local analgesic drugs in the fascial spaces surrounding the nerve plexus, thereby blocking the autonomic, sensory and motor fibres supplying the upper extremity.

It is simple, safe and effective technique of anaesthesia having distinct advantages over general and intravenous regional anaesthesia. Whenever general condition of the patient is very poor, or the patient is not adequately prepared or in the presence of associated conditions like, cardiovascular or respiratory diseases, uncontrolled diabetes a regional technique should always be considered. It is also useful when it is important for the patient to remain ambulatory and when the patient prefers to preserve his consciousness during surgery.

In our study, we selected supraclavicular approach to brachial plexus block because in upper extremity surgeries, Supraclavicular brachial plexus block is widely employed regional nerve block to provide anaesthesia and analgesia and it provides a rapid, dense and predictable anaesthesia of the entire upper extremity in the most consistent manner of any brachial plexus technique.

The development of nerve stimulators allowed an anatomical approach to regional anaesthesia leading to more reliable injection and a possibly decreased risk of nerve trauma.[8] The nerve stimulator technique allows for exact needle location without eliciting paraesthesia[9,10,11] hence there is increase in the specificity and reliability of peripheral nerve block technique. The method of postoperative pain relief must be effective, safe, and feasible.

Of various local anaesthetics, lignocaine is the most frequently used as it has faster onset of action. On the other hand, there are limitations like shorter duration of action with lignocaine and increased incidence of toxicity.

To decrease the toxicity and to increase the volume of local anaesthetic to be injected, 2% lignocaine is diluted to 1.5% lignocaine and 1: 200000 Adrenaline is added to it (5 µg/ml).

To prolong regional blockade, different additives like opioids, neostigmine, midazolam, clonidine, dexamethasone etc., have been used but they are associated with side effects.

Dexamethasone improves the duration and quality of peripheral nerve blockade. This action is considered to be mediated by attenuating the release of inflammatory mediators reducing ectopic neuronal discharge and inhibiting potassium channel-mediated discharge of nociceptive C-fibres.

Various steroids has been used for prolonging the regional nerve blockade, but dexamethasoneis preferred because of its high potent anti inflammatory property, about 25–30 times as effective as hydrocortisone and without any mineralocorticoid activity. Hence it was found to be safer and devoid of potential side effects.

Dexamethasone is also known to reduce postoperative nausea and vomiting (PONV). The possible mechanism of analgesic and antiemetic actions are due to anti inflammatory properties of dexamethasone.

To summarise, the prolongation of duration of both sensory and motor blockade after administration of dexamethasone perineurally may be secondary to its local action on C fibers mediated via membrane associated glucocorticoid receptors.

To date, several studies evaluated the effect of dexamethasone in peripheral nerve blocks and found that dexamethasone had an improving effect in postoperative analgesia.

A study by Pradeep Dhumane and Nilofar Shakir,[12] found that when dexamethasone is added to local anaesthetic in brachial plexus block, provided good intraoperative and postoperative analgesia and decreased postoperative opioid consumption without any adverse effects.

In our study, we aimed to evaluate the efficacy of dexamethasone along with local anaesthetic in supraclavicular brachial plexus block..

We ensured that the demographic variables age, weight, height have been shown to be comparable in both groups.

Onset of sensory block: In the present we observed that the onset of sensory block had mean duration of 11.20 ±1.51minutes in group A and 11.26 ± 1.86 minutes in group B and mean duration 14.2 ±1.71 minutes in group C with a p value of 0.01 ($p<0.05$). (Table 1).

The time for onset of sensory block is reduced in group A and group B than group C, the p value is 0.01 (<0.05) which was shown statistically significant.

The present study correlates to the study conducted by P Nageswara rao, S Seetharamaiah and B Venu Gopalan[13] who studied the effect of Supraclavicular brachial plexus block with and without Dexamethasone

Onset of motor blockade: In present study we observed that the onset of motor block had a mean duration of 13.6±1.61 minutes in group A and had a mean duration of 1.39±1.68 minutes in group B and mean duration of 17.02± 1.67 minutes in group C, and a p value of 0.01 ($p<0.05$) (Table 2).

The time to onset of motor blockade is earlier in both the group A and group B when compared to group C, which is significant as p value is less than 0.05.

Duration of sensory blockade: In present study we observed that the duration of sensory blockade in group A had a mean duration of 240.0 ± 26.87 minutes and the mean duration of sensory blockade in group B was 300.8 ± 28.27minutes in group B and that value in group C was 195.0 ± 25.25 minutes a p value of <0.001($p<0.05$) which is considered statistically significant (Table 3).

There was a significant increase in duration of sensory blockade in dexamethasone 8mg followed by 4mg group than control group and the difference was shown statistically significant.

Our study correlates well with one such randomised prospective trial was done by Shrestha BR, Maharjan SK, Tabedar S.[14]

Duration of motor blockade: In present study we observed that the duration of motor blockade in group A had a mean duration of 192.2 ± 29.9 minutes , 242.8 ± 30.9 minutes in group B, and 153.8 ± 20.69 minutes in group C and a P value of <0.001 ($p<0.05$) which is considered to be statistically significant. (Table 4).

There was a significant increase in duration of motor blockade in dexamethasone group A and group B than control group and the difference was shown statistically significant.

Our study correlates well with one such study conducted by Dr. Dheeraj R Patel Chirag Babu et al[15] studied in 90 patients, effect of 2 doses of Dexamethasone added as adjuvant for ultrasound guided supraclavicular block. The onset of both sensory and motor blockade in group 3 [169.83±30.157sec ; 237.67±31.287 sec] were significantly faster when compared to group 2 [228.33±32.386 sec; 313.33±33.767 sec] and group1 [328.50±40.538 sec; 405.50±41.259 sec] [$p<0.001$ (HS)]. The duration of motor blockade in group 3 [653.33±57.630 min] was significantly prolonged when compared to group 2 [479.83±37.312 min] and group 1 [325.33±36.434 min] [$p<0.001$(HS)]. In addition the duration of analgesia in group 3 [766.50±46.278 min] was significantly more compared to group 2 [601.67±58.492 min] and group1 [390.50±38.019 min] [$p<0.001$(HS)].

Duration of analgesia (Time to first Rescue Analgesic)

In our study, we observed that the time to first rescue analgesic in group A had a mean duration of 311.6 ± 22.97 minutes and 358.4 ± 26.29 minutes in group B and 249.2 ± 24.67 minutes in group C with a P value of 0.001 which is statistically significant. (Table 5).

The pain scores of the patient were assessed every hourly by visual analogue for pain assessment 0–10 (Table 6). There was a significant increase in time to first recue analgesic in group B followed by group A when compared to group C.

Haemodynamic parameters: In our study the basal heart rate, systolic, diastolic and mean arterial pressures were comparable. No patient in either groups developed significant bradycardia or hypotension that required treatment and both the groups were comparable in Haemodynamic parameters throughout the surgery and in the postoperative period.

Side effects: In the present study side effects like nausea, vomiting and dry mouth were negligible and were comparable in both the groups.

The side effects profile of the present study correlates with study conducted by Kalpana K, Natesh S. Rao, Sadanand Gopal, showed that no significant side effects were reported in first 24 hours post operatively and incidence of side effects were minimal and comparable in both the groups.

We did not observe any complications like haemothorax, pneumothorax, convulsions, local anaesthetic toxicity or post block neuropathy in any of our groups

The major limitation of our present study was that we did not use ultrasound guided blocks because of unavailability at the time of our study; this could have helped us to lower the dosages and volumes of local anaesthetic

Conclusion

In conclusion, addition of dexamethasone to local anaesthetics in supraclavicular brachial plexus block results in a faster onset and prolonged duration of sensory and motor blockade. Higher dose (8mg) of dexamethasone is more efficacious than lower dose (4mg) of dexamethasone as an adjuvant with local anaesthetics in terms of duration of sensory block, motor block and analgesia but equally efficacious in onset of sensory and motor blockade.

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