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A Comparative Study Of Clonidine Vs Dexamethasone As Adjuvants With Local Anaesthetic In Supraclavicular Brachial Plexus Block

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Abstract
Objectives: *To Compare the Effictiveness of Clonidine in 0.5% Bupivacaine with Dexamethasone in 0. 5% Bupivacaine in Supraclavicular Brachial Plexus Block in terms of onset of sensory and motor blockade 2. Duration of sensory and motor blockade.*
Materials &Methods:*The study was carried out as a Prospective, randomized clinical trail among 60 patients who underwent different surgical procedures under supraclavicular brachial plexus block They were randomized in to two group. Group A - Clonidine in 0.5% Bupivacaine and Group B - Dexamethasone in 0. 5% Bupivacaine. Both 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 two groups in demographic variables. The mean time required for onset of sensory block in Group A is 9.20minutes and in Group –B is 8.57,P-value 0.55 min with no statistical significance , onset of motor block Group A is 12.20 minutes and in Group –B is 11.57 min P-value 0.55 with no statistical significance. The average duration of sensory block in Group A is 781.33 min, and in Group B with 812.33 minP-value0.44 with no statistical significance. The average duration of Motor block in Group a is 792.33 min, and in Group B with 825.67 min P-value0.41 with no statistical significance.* ***Conclusion :*** *In this study the difference in the meandurationof the onset of sensory and motor blockade between the twogroupswas statistically not significant . The difference in the mean duration of the sensory and motor blockade also was statistically not significant.*
Keywords: *Brachial plexus block, clonidine,dexamethasone,analgesia.*

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I. Introduction

Brachial plexus block is a valuable adjunct to general anesthesia for surgery of the upper limb or suitable alternative to general anesthesia in high risk patients. The techniques of peripheral nerve blockade were developed early in the history of anesthesia and are now well accepted components of comprehensive anesthetic care. Its role has expanded from the operative site into the area of postoperative and chronic pain management. With appropriate selection and sedation, these techniques can be used in all age groups. Skillful application of peripheral neural blockade broadens the anesthesiologist's range of options in providing optimal anesthetic care.

Even though so many approaches and techniques came into practice, still the supraclavicular brachial plexus block is the standard and acceptable technique for arm and forearm surgeries. The confidence and co-operation of the patient are required for effective successful block.

Local anesthetics administered as regional nerve blocks are utilized in providing postoperative pain relief in many surgical procedures by blocking signal traffic to the dorsal horn. Certain drugs may be used as an adjuvant to local anesthetics to lower the doses of each agent and enhances analgesic efficacy while reducing the incidence of adverse reaction. Tramadol and Fentanyl have been successfully used as an adjuvant to local anesthetics, in brachial plexus block [1-2]

The existence of "A" type receptors, which take part in the transmission of nociceptive stimuli at the spinal level, emphasizes a possible direct action of a adrenergic agonists on neuronal tissue[3.]

The concurrent injection of a_2 adrenergic agonist drugs has been suggested to improve the nerve block characteristics of local vasoconstriction [4] and facilitation of C fiber blockade[5] or spinal action caused by sole

retrograde axonal transport or simple diffusion along the nerve [6] Clonidine is a selective a [2-]adrenergic agonist with some a_1 agonist properties. [7 to 10]

Clonidine is a $_2$agonist used in subarachnoid [11-16] epidural[17] , brachial plexus blocks[18]. It exerts its action in the peripheral nervous system by decreasing the secretion of Nor adrenaline and inhibiting depolarization of nociceptive neurons in primary afferent nerve endings by binding to receptors, subtypes A and C . Studies suggest that Clonidine reduces the release of glutamate and nor adrenaline and inhibits the opening of potassium channels It also has synergistic effects with local anesthetics, blocking condition in A- delta and C fibers . Indirectly, it can reduce the absorption of local anesthetics .

Addition of Clonidine to local anesthetic solutions improved peripheral nerve blocks by reducing the onset time, improving the efficacy of the block during surgery and extending postoperative analgesia The effect of Clonidine is dose related between 0.1 and 0.5 mcg/kg .

Steroids have powerful anti- inflammatory as well as analgesic property. Their role in the treatment of back ache, sciatica and multiple sclerosis is well known. Since 1952, Steroids were widely used epidurally and intrathecally for post – operative pain relief. They relieve pain by reducing inflammation and blocking transmission in nociceptive C- fibres and by suppressing ectopic neural discharge. Various steroids have been used for this purpose but Dexamethasone, a synthetic glucocorticoid has highly potent anti – inflammatory property without mineralocorticoid activity. It is also found to be safer and devoid of potential side effects.[19].

With this background, we undertook this study to evaluate the effect of DEXAMETHASONE added to 0.5% bupivacaine on the onset time, intensity and duration of supraclavicular brachial plexus block.

II. Aims And Objectives :

The purpose of this dissertation is the comparative study of the effect of addition of dexamethasone and clonidine to local anesthetic drug in (0.5% Bupivacaine) supraclavicularbrachial plexus block on :

1.Onset of sensory blockade
2.Onset of motor blockade
3.Duration of sensory blockade
4.Duration of motor blockade
5.Complications/ side effects

III. Materials And Methods

This randomized prospective study was conducted at Dr. PinnamaneniSiddhartha General Hospital , on 60 patients presenting for upper limb surgery with a proposed average duration of two to three hours. Approval was obtained from the hospital ethics committee. A through preoperative evaluation by anesthtesiologist of all the patients was ensured. For each patient in both groups, the following information was acquired and tabulated age, sex, associated medial problems etc.

These 60 patients were divided into two groups. Group A and Group B . Each group comprised of thirty patients.

Group- A patients received 0.5% Bupivacaine 2mgs per kg body weight plus clonidine.50micro grams making it total volume of 35ml

Group –B patients received 0.5% Bupivacaine 2 mgs per kg body weight plus dexamethasone 4mgs making it total volume of 35ml.

Inclusion Criteria :

60 patients between

1. The age group of 18-60years
2. ASA class – 1 and Class –II
3. For upper limb surgeries

Exclusion Criteria:

Asa grade : grade iii & iv
Bleeding disorders and patient on anticoagulants
Local infection at injection site
History of allergy to local anesthetics
Patient with history of peptic ulcer disease, diabetes milletus
Hepatic and renal disease ,pregnant women.

STUDY DESIGN: Randomized prospective study

METHODOLOGY: Informed consent was obtained from every patient. In both groups all patients were given explanations and reassured about the procedure . All patients were premedicated with tab Alprazolam -.5 mg the

night before surgery. Supraclavicular block was performed using nerve stimulation technique in thesupine position with the head turned 45 deg to the opposite side and arm placed by the side of the chest.Needleinsertion site was prepared with antiseptic solution. About 1-1.5 cm above the midclavicular point subclavian artery pulsations were felt , 50mm long insulated needle was inserted in caudal,backward and medial direction. When muscle contractions were seen at stimulating current between 0.2 m A and 0.5m A at 2Hz frequency with pulse width of 0.1ms,drugs were injected with intermittent aspiration.

. **The following parameters were studied:**

1) Onset of sensory block:

Sensory block was assessed by pinprick using the blunt end of a 27-gauge needle . Sensory block was graded according to the following scale: 0 = no block (normal sensation), 1 = partial block (decreased sensation), and 2 = complete block (no sensation).

2) Onset of motor block:

Motor block was measured by assessing the following motor functions: flexion at the elbow (musculocutaneous nerve), extension of the elbow and the wrist (radial nerve), opposition of the thumb and index finger (median nerve), and opposition of the thumb and small finger (ulnar nerve). Motor block was graded according to the following scale: 0 = no block (full muscle activity), 1 = partial block (decreased muscle activity), and 2 = complete block (no muscle activity).

3) Duration of sensory block:

The duration of analgesia was noted according to 0-10 visual analogue score (VAS) for pain at every half an hour for first 10 hours and then hourly till 24 hours.

When the patients began to experience the worst pain (VAS =8-10), it was considered that analgesic action of the drugs was terminated and rescue analgesic -IM Diclofenac 75mg was given.

4) Duration of motor block:

The duration of motor block postoperatively was assessed by asking the patients to move their fingers and to see whether they were able to raise the hand or not. This time was recorded and taken as cessation of motor block effect.

IV. Statistical Analysis

60 patients were studied for difference in the onset and duration of action using standard descriptive statistics

The following descriptive statistics were used to present the data

1. Tabulation
2. Graphical representation
3. Measures of central tendency

Statistical analysis to compare the variables like age, sex, onset and duration of action between the two groups was made by STUDENT ‘t’ TEST

STUDENT ‘t’ TEST was used to find if a significant difference existed between the two groups

‘P’ Value of <0.05 was accepted as indicative of statistical significance and a ‘p’ value of > 0.05 was considered as non significant

‘P’ value of < 0.01 and <0.001 were considered as highly and very highly significant respectively.

V. Observations And Results

For the purpose of representation of the data

Group A: patients given Clonidine with bupivacaine

Group B: patients given Dexamethasone with bupivacaine

DEMOGRAPHIC DATA:

Table-:1

Parameter	Clonidine	Dexamethasone	P-value	Inference
No of patients	30	30	-	-
Age (Mean ± SD)	35.87 ± 14.24	37.00 ± 13.56	0.75	NS
Sex (Male:Female)	20 : 10 (66.7% : 33.3%)	21 : 9 (70% : 30%)	-	-
Weight in Kg's	60.73 ± 10.25	61.77 ± 9.51	0.69	NS

In Group A the mean weight of the study participants was 60.73±10.25 kgs.

In Group B the mean weight of the study participants was 61.77±9.51 kgs.

TABLE:2. Distribution As Per Asa Grading Of The Patients:

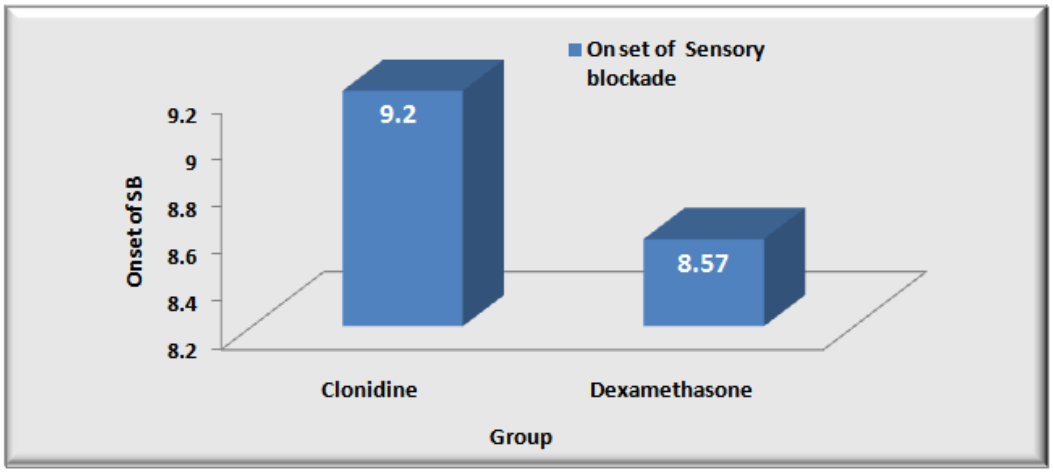
ASA Gr	Clonidine		Dexamethasone	
	Frequency	Percent	Frequency	Percent
I	26	87	26	87
II	4	13	4	13
Total	**30**	**100**	**30**	**100**

Distribution of the patients as per the ASA grading was similar in both the groups.

Table-3: Comparison of On set of Sensory blockade

Time in Min	Group		P- value
	Clonidine	Dexamethasone	
<5	6	7	-
5 - 10	15	16	-
11 - 15	8	6	-
16 - 20	1	1	-
>20	0	0	-
Mean ± SD	**9.20 ± 4.23**	**8.57 ± 4.01**	**0.55 NS**

Fig:1

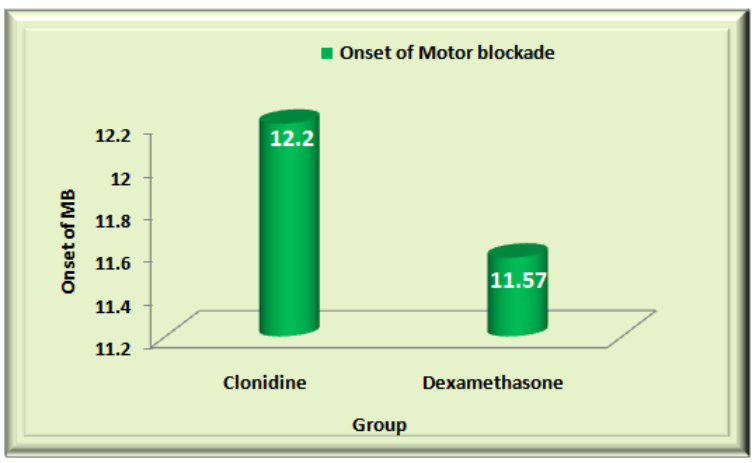


Mean Duration of the onset of sensory blockade with Clonidine was 9.20±4.23 minutes .Mean duration of the onset of sensory blockade with Dexamethasone was 8.57±4.01minutes. The difference in the duration of the onset of sensory blockage in both the groups was statistically not significant.

Table-4: Comparison of Onset of Motor blockade

Time in Min	Group		P – value
	Clonidine	Dexamethasone	
<5	0	0	-
5 – 10	16	18	-
11 – 15	7	7	-
16 – 20	6	4	-
>20	1	1	-
Mean ± SD	**12.20 ± 4.23**	**11.57 ± 4.01**	**0.55 NS**

Fig:2

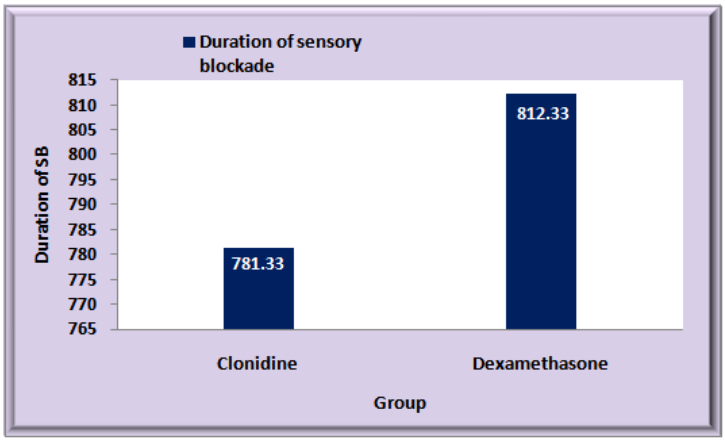


Mean duration of the onset of motor blockade with Clonidine was 12.20±4.23 minutes
Mean duration of the onset of motor blockade with Dexamethasone was 11.57±4.01minutes.
The difference in the mean duration of the onset of motor blockage in both the groups was statistically not significant.

Time in min	Group		P-value
	Clonidine	Dexamethasone	
<360	0	0	-
361 – 480	3	1	-
481 – 600	3	3	-
601 – 720	6	6	-
721 – 840	4	4	-
>840	14	16	-
Mean ± SD	**781.33 ± 163.96**	**812.33 ± 145.10**	**0.44 NS**

Table-4 Comparison of duration of sensory blockade.

Fig:3

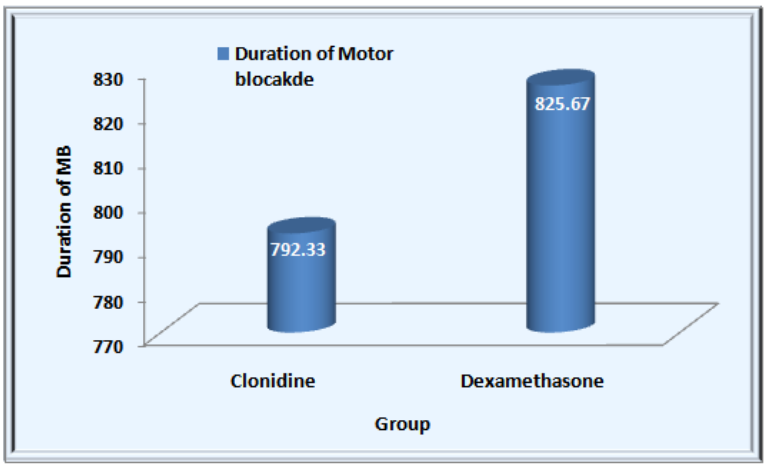


Mean duration of the sensory blockade with Clonidine was 781.33±163.96 minutes
Mean duration of the sensory blockade with Dexamethasone was 812.33±145.10 minutes.
The difference in the duration of the sensory blockage in both the groups was statistically not significant.

Table-6: Comparison Duration of Motor blockade

Time in min	Group		p-value
	Clonidine	Dexamethasone	
<360	0	0	-
361 – 480	0	0	-
481 – 600	5	3	-
601 – 720	5	4	-
721 – 840	4	5	-
>840	16	18	-
Mean ± SD	**792.33 ± 164.11**	**825.67 ± 146.26**	**0.41 NS**

Fig :4



Mean duration of the motor blockade with Clonidine was 792.33±164.11 minutesMean duration of the motor blockade with Dexamethasone was 825.67±146.26 minutes. The difference in the duration of the motor blockage in both the groups was statistically not significant.

VITAL PARAMETERS

Table – 7: Comparison of Mean pulse rate

Time	**Pulse rate / min (Mean +. SD)**		**P value**
	Group –A	**Group -B**	
Pre- operative	86.40 +. 5.56	87.53 **+. 7.47**	>0.05
Intra – operative	88.66 +. 5.56	89.73 **+. 6.61**	>0.05
Post – operative	85.73 +. 4.54	86.60 **+. 5.01**	>0.05

It is clear from the table that there was no significant intra – group difference in mean pulse rate Peri-operatively

Table – 8: Comparison of Mean Blood Pressure

Time	**Pulse rate / min (Mean +. SD)**				**P value**
	Group –A		**Group –B**		
	Systolic	Diastolic	Systolic	Diastolic	
Pre- operative	120.46 +. 10.74	78.06+.6.09	122.26 +. 13.74	79.66+.7.52	>0.05
Intra – operative	120.46 +. 10.09	78.60+.5.41	123.20 +. 13.83	80.46+.7.07	>0.05
Post – operative	120+. 10.87	77.73 +. 5.65	121+. 13.22	79.46 +.6.96	>0.05

Comparison of pre – operative, intra – operative and post – operative Blood pressure did not show any significant difference in both the groups**.**

Table :9Comparison Mean Respiratory Rate

Time	**Respiratory Rate / min (Mean +. SD)**		**P value**
	Group –A	**Group -B**	
Pre- operative	18.06 +. 1.52	17.66 +. 1.49	>0.05
Intra – operative	17.66 +.1.58	17.66+.1.66	>0.05
Post – operative	17.69 +. 1.42	17.06+.1.25	>0.05

It is clear from the table that there was no significant change in mean Respiratory Rate between two groups in the Peri- operative period

Table 10: Comparision Of Vas Between The Two Groups

Time	**VAS SCORE (0= no pain 10= pain)**				**P value**
	Group –A		**Group -B**		
	Mean	**SD**	**Mean**	**SD**	
1st hour	0.37	0.49	0.63	0.76	0.220
2nd hour	1.30	0.95	0.87	0.86	0.086
3rd hour	1.83	0.79	1.17	0.79	0.0.2
4th hour	2.13	0.86	2.0	0.79	0.550
5th hour	2.5	0.90	2.33	0.80	0.330
6th hour	2.83	1.02	2.6	0.77	0.180
7th hour	3.27	0.1	3.03	0.81	0.335

TABLE : 11 Complications

Complications	**Group -A**	**Group -B**	**P value**
Nausea and Vomiting	0	0	-
Local anaesthetic toxicity	0	0	-
Hypersensitivity	0	0	-
Inadvertent arterial puncture	0	0	-
Hematoma	0	0	-
Pneumothorax	0	0	-
Post block neuropathy	0	0	-

MONITORING OF OTHER EFFECTS

Intra – operative patients were monitored for hemodynamic variables such as Pulse rate, Blood pressure and Respiratory rate. Assessment of blood loss was done and fluid was administered as per the loss.. .

POST OPERATIVE ASSESSMENT

Post – operatively pulse, blood pressure, respiratory rate, consciousness and response to Verbal commands were noted. Patient were evaluated post operatively every 15min till the complete sensory and motor recovery. Patients would be evaluated post operatively, every hourly for first six hours, second hourly for next twelve hours, for the following parameters- intensity of pain, motor and sensory recovery.

The intensity of pain was assessed using visual analogue scale (VAS) Score. This scale consists of a 100 mm line on which the patients represented the degree of pain he / she was experiencing by placing a point somewhere between " no pain ("0") and the worst pain ever experienced ('100") . the supplemental analgesia was given in the form of inj. Diclofenac 75 mg IM, when VAS score was more than four.

The side effects and complications if any like nausea, vomiting, pneumothorax, hematoma and local anesthetic toxicity were monitored for 6hrs postoperatively in all patients

VI. Discussion:

Although general anesthesia continues to be used for most of the surgical procedures, regional anesthesia has been increasing in popularity in recent years. This is mainly because of the fact that the regional anesthesia 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 a simple, safe and effective technique of anesthesia having distinct advantages over general and intravenous regional anesthesia. A regional technique should always be considered whenever general condition of the patient is poor, or the patient is not adequately prepared or in the presence of associated conditions like uncontrolled diabetes, cardiovascular or respiratory diseases. It is also useful when the patient prefers to retain his consciousness during surgery and when it is important for the patient to remain ambulatory.

We had selected supraclavicular approach to brachial plexus block. Supraclavicular brachial plexus block is widely employed asregional nerve block to provide anaesthesia and analgesia for the upper extremity surgery. Supraclavicular block provides a rapid, dense and predictable anesthesia of the entire upper extremity in the most consistent manner of any brachial plexus technique. It is the most effective block for all the portions of the upper extremity and is carried out at the "division" level of the brachial plexus; with high volume the "trunk" level of the plexus may also be blocked in this approach[20,21,22].. Perhaps that is why there is often little or no sparing of peripheral nerve if an "adequate" paresthesia or stimulation is obtained.

The alleviation of the suffering is of course a primary concern of the anaesthesiologist. Currently available local anesthetics can provide analgesia for limited period of time when used as single injection. To extend the analgesia period beyond the operating rooms, various methods have been tried with the aim of prolonging the local anaesthetic action, like continuous infusion of local anesthetics via indwelling catheters, use of different additives in local anaesthetics.

In thisstudy,clonidine& dexamethasone was used as adjuvants in local anesthetic. Thisstudy was a randomised, comparative study. Sixty patients posted for upper limb surgeries were given brachial plexus block by supraclavicular approach. The patients were randomly allocated into two groups using standardrandomisation code. Group A (received 0.5% bupivacaine 2mg/kgpluscloninidine50mcg making a total volume of 35ml).Group B (received 0.5% bupivacaine 2mg/kgplus dexamethasone 4mg(1ml) making a total volume of 35ml).

Three patients failed to achieve satisfactory levels of anaesthesia and required induction of general anaesthesia. They were excluded from the study.

The assessment of onset and duration of block was carried out by the principal investigator who was blinded to the drugs administered in the block.

In this study, the mean age of patients in group A was 35.87 ± 14.24 years. Mean age of patients in group B was 37.00 ± 13.56years,P-value 0.75 Using unpaired't' test; there was no significant difference in the two groups statistically ($p > 0.05$). (Table 1)

Mean weight of the patients in group A and group B were 60.73± 10.25and 61.77 ± 9.51kgs P-value0.69 respectively. This was not statistically significant ($p > 0.05$). (Table 1)

There were more male patients than female in both the groups. There was no significant difference regarding the sex distribution between two groups. (Table 1)

Mean onset of sensory block in group A in mins -9.20 +/- 4.23

Mean onset of sensory block in group B in mins -8.57 +/- 4.01 &P-value 0.55(Table 3)

Mean onset of motor block in group A in mins- 12.20 +/- 4.23

Mean onset of motor block in group B in mins -11.57 +/- 4.01 &P-value0.55(Table4)

Both these data were not significant statistically as $p > 0.05$. This study showed that there was no significant differenceinonset time of sensory and motor block in Group B compared with Group A

In one study by Shrestha BR, Maharjan SK, Tabedar S[23] onset of action was 10-30 minutes in local anesthetic group (mean 18.15 ± 4.25) and 10-20 minutes (mean 14.5 ± 2.10) in the local anesthetic plus steroid group. They found statistically significant difference between two groups.
However another study by Ali Movafegh, Mehran Razazian, Fatemeh Hajimaohamadietal[24]foundthat the onset time of sensory and motor blockade was similar in both the groups. This study also showed that dexamethasone does not produce significant difference in the onset time of sensory and motor block.
Mean duration of sensory block in group A in mins 781.33 +/- 163.9
Mean duration of sensory block in group B in mins 812.33 +/- 145.10 &P-value 0.44(Table 5)
Mean duration of motor block in group A in mins 792.33 +/- 164.11
Mean duration of motor block in group B in mins 825.67 +/-146.26 &P-value0.41(Table 6)

Both data were statistically insignificant.
Several studies have shown that addition of 4-8 mg of dexamethasone to local anesthetics effectively and significantly prolongs the duration of analgesia.

Estebe IP, Le corry P, Clement R, Duplessis L et al[25] studied the effect of dexamethasone on motor brachial plexus block with bupivacaine and with bupivacaine-loaded microspheres in a sheep model and found that the incorporation of dexamethasone in bupivacaine-loaded microspheres dramatically increases the duration of action.

Other preliminary data suggest that methylprednisolone can increase the duration of sensory and motor block.

In a study by **Stan T, Goodman E, Cardida B, Curtis RH[26]** the patients were divided into 2 groups to receive solutions containing 20 mL mepivacaine, 20 mL bupivacaine, 0.2 mL epinephrine, and, in one group, 40 mg methylprednisolone was added to this solution. The authors found that the duration of sensory analgesia (23 hours versus 16 hours; $P < 0.01$) and motor block (19 hours versus 13 hours; $p < 0.001$) were significantly longer in the steroid group. The authors believed that the applicability of these findings to clinical practice should be verified in a randomized prospective clinical trial.

One such randomised prospective trial was done by **Shrestha BR, Maharjan SK, Tabedar S[23]**. In their study forty patients undergoing arm, forearm and hand surgeries were randomly selected. The forty patients were divided in two groups of 20 each. In-group one, a brachial plexus block was done with 40-50 ml of local anesthetic with 1:200,000 adrenaline and in the other group the block was performed with the same amount of local anesthetic with dexamethasone. The authors found that there was significant faster onset of action (14.5 ± 2.10 minutes verses 18.15 ± 4.25 minutes; $p<0.05$) and prolonged duration of analgesia (12.75 ± 5.33 hours verses 3.16 ± 0.48 hours; $p = 0.00$) in the dexamethasone group than in the other group.

Many authors believe that the block prolonging effect of dexamethasone is due to its local action and not a systemic one[31]. They found that steroids produce analgesia by blocking transmission in nociceptive c-fibres and suppressing ectopic neuronal discharge. Local application of methylprednisolone has been found to block transmission in c-fibres but not in a and B fibres. The effect was reversible, suggesting a direct membrane action of steroids. Steroids might bring about this effect by altering the function of potassium channels in the excitable cells.

There are others who believe that analgesic properties of corticosteroids are the result of their systemic effect.Offering the pain free period to the patient during postoperative time is essential on humanitarian grounds. Besides it eliminates the stress response to surgery and helps in smoother transition of the patient from surgery to the routine preoperative state.
This study has shown that addition of dexamethasone to a mixture of local anesthetics in the brachial plexus block,using supraclavicular approach is not significantly superior to that produced by clonidine with local anaesthetics without any significant side effects.

Clonidine and local anesthetic agents have a synergistic action. Clonidine enhances both sensory and motor blockade of neuraxial and peripheral nerves after injection of local anesthetic solution, without affecting the onset [28,29,30.] This is thought to be due to blockade of conduction in A- delta and C fibers, increase in the potassium conductance in isolated neurons best seen in vitro and intensification of conduction block achieved by local anesthetics.

Since the '80s Clonidine has been used as an adjucvant to local anesthetic agents in various regional techniques to extend the duration of block . In axillary plexus block. Some studies have shown that clonidine prolongs the local anesthetic block .

The results of this study showed no significant difference in onset of motor or sensory block when local anesthetic plus clonidine was compared with local anesthetic plus Dexamethasone in supraclaviculr brachial plexus. These findings are in accordance with those of perviousstudies.

Bernard and Macarie[27] evaluating the effects of adding 30-300 µg clonidine to lignocaine for axillaly brachial plexus anesthesia, reported that the addition hastened the onset of the block and improved the efficacy of surgical anesthesia .

There are two main theories on how clonidine may prolong sensory anesthesia . One of these suggests that clonidine may produce local vasoconstriction, resulting in a delayed absorption of local anesthetic and block prolongation . The second is that clonidine may directly bind to alpha$_2$ – adremergic receptors to modify neuronal excitability rather than acting centrally on the locus coeruleus . Our data seem to confirm the local effect of clonidine because of the higher incidence and longer duration of motor blocks observed in patients who received the drug, as suggested in a previous report.

In this study we combined Clonidine along with a local anesthetic to study how the onset,durationofsensory and motor block are affected is compared with dexamethasone along with a local anaesthetic

We found an insignificant difference in the onset and duration of analgesia and motor block between the two groups . We found that there was no statistically significant difference in the onset and duration of sensory block and motor block

The prolongation of analgesia observed is consistent with other trials performed at the brachial plexus,[32]popliteal block and in another study in children undergoing a variety of block, which demonstrated that the addition of Clonidine to Bupivacaine and Ropivacaine can extend sensory block by a few hours and increase the incidence of motor block[33]. In another study, the authors found that the time of first administration of opiodis after the nerve block was shorter in patients who received local anesthetic and Clonidine compared with those who received local anesthetic only[34].

The results of this study showed no adverse events like hypotension, bradycardia or sedation with the use of clonidine. Most of the studies conducted using clonidine in regional anesthesia did not report any adverse effects.

VII. Conclusion

In this study the difference in the mean duration of the onset of sensory and motor blockade between the two groups was statistically not significant . The difference in the mean duration of the sensory and motor blockade also was statistically not significant.We conclude from our study that both clonidine and dexamethasone added to bupivacaine are of equal efficacy in prolonging analgesia with no side effects.

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