



Full Length Research Article

COMPARISON OF TRAMADOL AND BUPRINORPHINE AS AN ADJUVANT TO BUPIVACAINE USED IN SUPRACLAVICULAR BRACHIAL PLEXUS BLOCK FOR UPPER LIMB SURGERIES

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ARTICLE INFO

Article History:

Received 16th May, 2015
Received in revised form
21st June, 2015
Accepted 13th July, 2015
Published online 31th August, 2015

Key words:

Bupivacaine,
Tramadol,
Supraclavicular Brachial Plexus Block,
Buprinorphine

ABSTRACT

To compare the bupivacaine with buprinorphine and bupivacaine with tramadol mixture in terms of -

- Onset of block
- Time to achieve complete block
- Duration of postoperative analgesia
- Incidence of side effects

MATERIALS AND METHODS

Selection Criteria

- ASA physical status I and II patients
- Age group 20-50 years.

Exclusion Criteria

- Progressive neurological disorder
- Patients having liver or kidney disease
- History of hypersensitivity reaction to study medication
- Clotting disorder
- Patients on opioids
- Patients who are not willing

They were randomly divided into

Group T: 30 ml of 0.25% Bupivacaine 50mg with Tramadol in Supraclavicular Brachial Plexus Block.

Group B: 30 ml of 0.25%Bupivacaine with 100 mcg Buprinorphine in supraclavicular brachial plexus block.

METHODOLOGY

- Written, informed consent.
- All patients received inj. Midazolam 1mg as premedication.
- The subclavian artery as a guide.
- Sensory block was tested by Pinprick method.

0=sharp pain

1=touch sensation

2=no sensation

Assessment of motor blockade by using the Bromage 3 point score.

0=normal motor function

1=decreased motor strength with ability to move the fingers

2=complete motor block with inability to move fingers

Vitals parameters were recorded.

Pain assessment by using verbal response score (VRS) -

0 =complete absence of pain

10=worst pain

Rescue analgesia (VRS>6) - inj. diclofenac 75mg IM

Patients will be observed for side effects.

Results: Onset of analgesia is fast with tramadol added to bupivacaine and time to achieve complete block without any increase in side- effects.

Addition of Buprinorphine – Enhance the postoperative analgesia than tramadol added to bupivacaine.

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INTRODUCTION

- A well accepted component of comprehensive anaesthetic care.

- Easy accessibility and simplicity with predictable landmark.
- Bupivacaine is the most commonly administered drug.
- Limitations- Onset of action and duration of anaesthesia.
- Adjuvants: Buprenorphine, Clonidine, Morphine, Dexamethasone.
- To improve the quality and duration of action.
- ANATOMY:

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- The supraclavicular fossa is a triangular depression on the lateral neck bounded medially by the sternocleidomastoid muscle (SCM), inferiorly by the clavicle and superiorly by the trapezius muscle.
- The brachial plexus enters the supraclavicular fossa after exiting the interscalene space and turning laterally to run on the superior-posterior aspect of the subclavian artery. The plexus courses infero-laterally through the fossa with the subclavian artery.
- At the midclavicle, the plexus and artery pass inferior to the clavicle and superior-lateral to the first rib as they exit the fossa. Inferior to the artery and medial to the first rib is the dome of the lung, leading to the possibility of injury during the block.

Aims and Objectives

To compare the bupivacaine with buprinorphine and bupivacaine with tramadol mixture in terms of –

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Variables	Tramadol Group (n=30)	Buprinorphine Group (n=30)	p-value
Age (in years) (Mean±SD)	32.5±8.02	33.7±9.77	Not significant
Weight (in kg) (Mean±SD)	53.3±5.46	52.1±6.39	Not significant
Duration of surgery (in minutes) (Mean±SD)	65.5±24.43	67.5±23.88	Not significant

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- Vitals parameters were recorded.
- Pain assessment by using verbal response score (VRS) -

- 0 =complete absence of pain
- 10=worst pain

- Rescue analgesia (VRS>6) - inj. diclofenac 75mg IM
- Patients will be observed for side effects.

RESULTS

BLOCK CHARACTERISTICS

variables	Tramadol group (n=30)	Buprinorphine Group (n=30)	
Onset of motor block (Min.)	3.8±0.73	5.7±0.70	Results were statistically significant [p value <0.01 Unpaired t test]
Onset of sensory block (Min.)	6.7±0.65	9.23±1.25	
Time to achieve complete block (Min.)	16.2±1.56	19.8±1.53	
Duration of motor block (Min.)	194±34.09	264±31.90	
Duration of sensory block (Min.)	276±30.90	357±36.40	
Duration of analgesia (Min.)	398±29.40	520±28.76	

- There were no significant differences in patient characteristics or
- in the duration of surgery among groups.
- Intraoperatively, no significant changes in pulse rate and blood pressure were observed in both the groups.
- It is evident from the table that most of the patients in Group Tramadol needed systemic analgesic between 6-7 hours while in Group Buprinorphine between 8-9 hours.

- The side effects were more in Tramadol group.
- No complications of supraclavicular block were noted.
- Various studies on the use of opioids in randomised control fashion and result were varied .

DISCUSSION

- It has been established that a more even adequate and durable analgesia during and after the surgery.
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Conclusion

- Onset of analgesia is fast with tramadol added to bupivacaine and time to achieve complete block without any increase in side- effects.
- Addition of Buprinorphine – Enhance the postoperative analgesia than tramadol added to bupivacaine.
- The addition of Buprinorphine along with bupivacaine can be considered as a better choice for upper limb orthopaedic surgeries under supraclavicular brachial plexus block.

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