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Original Research Paper

Anaesthesiology

A COMPARATIVE STUDY OF LOW DOSE HYPERBARIC BUPIVACINE WITH FENTANYL AND HYPERBARIC BUPIVACAINE IN SPINAL ANAESTHESIA FOR BELOW UMBILICAL SURGERIES.

Dr Tahir S Hatturkar	Post Graduate MVJMC&RH
Dr Nirmala B C*	Professor MVJMC&RH *Corresponding Author
Dr Jawabulla Vazhayil	Post Graduate MVJMC&RH
Dr Kaveti Vihitha Reddy	Post Graduate MVJMC&RH

KEYWORDS :

INTRODUCTION:

Local anasthetic like bupivacaine is commonly used in spinal anaesthesia. Studies have shown that duration of analgesia due to bupivacaine in spinal anaesthesia can be prolonged by using adjuvants. Most commonly used opioid in regional anaesthesia is fentanyl. It is highly potent drug because of its high lipophilicity. The aim of the present study was to compare the effect of intrathecal fentanyl as adjuvant to low dose bupivacaine in the subarachnoid block with regular dose of bupivacaine.

NEED FOR STUDY:

The study was conducted to reduce the side effects of hyperbaric bupivacaine 0.5% given intracthecally in spinal anaesthesia by reducing the dose of it.

AIM:

The aim of the study was to evaluate the efficacy of intrathecal Hyperbaric bupivacaine 0.5% with 50mcg of fentanyl.

OBJECTIVES:

Level of block at the end of 10 minutes after giving spinal anaesthesia.

Time taken by sensory block regression by two segments.

Duration of analgesia.

Intraoperative hemodynmic stability Adverse effects

METHODS:

Type and design of study: Randomised prospective study.
Study population: The Study population included 60 patients undergoing below umbilical surgeries under spinal anaesthesia during November 2018 to December 2019.
Study location: MVJ Medical college and research hospital.

ETHICAL CLEARANCE: Obtained

INCLUSION CRITERIA:

Patients of ASA grade I,II and III
Patients of both sexes posted for below umbilical surgeries
Patients giving valid informed and written consent.

EXCLUSION CRITERIA:

Patients refusal and contraindications for spinal anaesthesia.
Patients below 35kgs and above 90kgs weight.

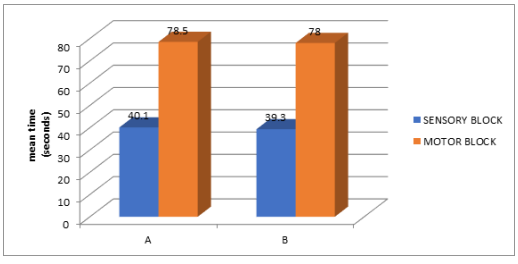
Patients with history of hypersensitivity to drug used.

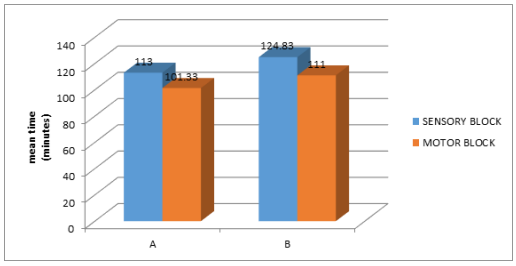
METHODOLOGY:

A randomized prospective clinical study involving 60 patients belonging to ASA physical status I to III and height from 150-165cm. Routine pre-anaesthetic checkup was done. Valid informed written consent was obtained. Patients below 35 and above 90kgs were excluded. Patients were randomly divided into two groups of 30 each. Group A received 1.5ml of 0.5% hyperbaric bupivacaine with 50mcg fentanyl. Group B received 3ml of 0.5% hyperbaric bupivacaine, under aseptic precautions, Subarachnoid block was given in lateral position at L2-L3 using a 25 G Quincke's needle through midline approach and table in neutral position. Patients were turned supine immediately. The following parameters were noted: **Onset of sensory block, Onset of motor block, Level of the sensory block, Duration of motor block, Duration of two segment sensory regression, Duration of analgesia,** Parameters like HR, BP, SPO2 were recorded every 2 mins for the first 10 minutes and every 10 minutes till the end of surgery, Any other adverse drug reactions like nausea, vomiting, urinary retention, pruritis etc were noted.There was no significant difference in mean Onset of Sensory Block and motor block between two groups.

RESULTS:

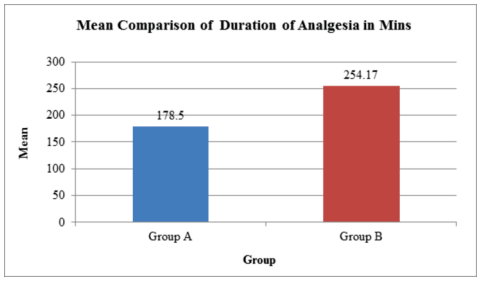
There was no significant difference in mean Onset of Sensory Block and motor block between two groups.





There was significant difference in mean Duration of sensory and motor block between two groups.

There was significant difference in mean Duration of Analgesia between two groups(Group A=178.50 ± 17.96 min,Group B= 254.17 ± 24.53 min)



DISCUSSION:

Bupivacaine is the widely used anaesthetic agent for spinal anaesthesia. It has the advantage of producing good surgical anaesthesia and longer half-life compared to other local anaesthetics, the incidence of adverse effects on haemodynamic stability like hypotension ismorecommon. Perioperative hypotension will affect postoperative recovery and increases risk of coronary ischaemia. Intra thecal opioids are synergistic with local anaesthetics and intensify the sensory block. The addition of fentanyl to hyperbaric bupivacaine increases the intra-operative quality of block and synergistic antinociceptive effects with local anaesthetics will increase the duration of the block. The major advantages of neuraxial opioids are the preservation of preganglionic sympathetic function, postoperative analgesia and augmentation of spinal .This study had shown that addition of fentanyl to low dose of bupivacaine provided the same level of anaesthesia as that of higher dose of bupivacaine given alone with added advantage of haemodynamic stability. This combination can be especially useful for patients having ischaemic heart disease, diabetics with end organ damage, renal failure without coagulopathy and in patients with autonomic neuropathy. Results from our study shows that the baricity of the solution does not make any difference to the level of blockade or the density of blockade which is similar to the results of the study done by Roy G Soto et al.[1]

Thus we conclude that adding fentanyl helps in reducing the dose of bupivacaine for spinal anaesthesia in below umbilical surgeries without showing any significant change in sensory and motor level block. It provides better intra and postoperative analgesia, good hemodynamic stability with no incidence of complications.

CONCLUSION:

Thus we conclude that adding fentanyl helps in reducing the dose of bupivacaine for spinal anaesthesia in below umbilical surgeries without showing any significant change in sensory and motor level block. It provides better intra and postoperative analgesia, good hemodynamic stability with no incidence of complications.

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