

# Assessment of Efficacy of Midazolam as an Adjuvant to Intrathecal Bupivacaine for Lower Abdominal Surgeries

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## I. INTRODUCTION

Spinal anaesthesia is the most commonly used regional anaesthetic technique. Local anaesthetic agents used for this purpose provide good intraoperative analgesia. However, they provide a very limited postoperative duration of action. In order to overcome this problem and to maximise the duration of anaesthesia-analgesia, many adjuvants, such as intrathecal opioids and non-opioids, have increasingly been tried in the last two decades to relieve postoperative pain.

### ➤ Aims & Objectives

Bupivacaine when used alone produces analgesia for 2.5 to 3 hours, making it unsuitable in cases where the duration of surgery is longer and in cases which require further analgesia during post-operative period. Present study is intended to evaluate the effect of addition of intrathecal midazolam to bupivacaine to prolong the post-operative analgesia.

## II. METHODOLOGY

A prospective randomized double-blind study was carried out on 60 adult ASA gr 1 and 2 pts, to compare the efficacy of intrathecal bupivacaine with midazolam and bupivacaine alone for post operative pain relief. Pts were randomly divided into 2 groups. Group B {n=30} received 3ml of 0.5% bupivacaine with 0.2 ml of 0.9% normal saline. Group BM{n=30} received 3ml of 0.5% bupivacaine with 0.2 ml of preservative free midazolam.

	GROUP BM	GROUP B
AGE [Y]	48+/- 18	44+/- 18
SEX M/F	23/7	17/13
TYPE OF SURGERY		
GENSURGERY	8	10
ORTHOPEDIC	4	8
GYNAEC	18	12

Fig 1 Demographic Profile Chart

	GROUP BM+-SD	GROUP B +-SD	P-VALUE
DUR.OF SX[MIN]	99+-33.9	89+-30.1	0.285
ONSET OF SENSORY BLOCK[MIN]	3+-1.22	3+-1.97	0.33
TIME TO ACHIEVE MAX BLOCK[MIN]	7.7+-2.69	8.6+-2.67	0.24
TIME TO REGRESS TO T12[MIN]	158.6+-32.16	164+-67.07	0.69
TIMETO RESCUE ANALGESIA[H]	17+-8.87	4+-3.5	0.001

Fig 2 Summary Results

Both groups did not differ significantly as regard to time of onset of sensory block, duration of action, time for regression of sensory block to T12. There was significant duration of post operative analgesia observed in group BM. There were no episodes of bradycardia, hypotension, sedation, intraoperatively or postoperatively and no vomiting, pruritis and urinary retention in post operative period.

## III. DISCUSSION

Our study shows that the addition of midazolam to intrathecal bupivacaine significantly prolongs the duration of postoperative analgesia. The time to first rescue analgesic was more than 16 hrs in BM group as compared to 3.5 hrs in B group. Antinociceptive action are mediated via BZD/GABA-A receptor complex which are present in lamina 2 of dorsal horn ganglia of spinal cord. Intrathecal midazolam probably causes release of an endogenous opioid acting at spinal delta receptors as naltrindole. Intrathecal midazolam besides causing analgesia has also been found to be effective in suppressing reflex response to visceral distention and its pain. Intrathecal midazolam has been shown to be free of any neurotoxicity and other side effects with dose up to 2mg.

#### **IV. CONCLUSION**

Intrathecal midazolam added to bupivacaine prolongs duration of post op analgesia without prolonging the duration of dermatomal sensory block with no side effects.

#### **REFERENCES**

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- [3]. Indian J, anaesthesia 2005; 49(1):37-39 effect of intrathecal midazolam bupivacaine combination on post op analgesia.