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ORIGINAL ARTICLE

Comparison of Postoperative Mean Morphine Consumption in patients given Preoperative Gabapentin and Placebo undergoing Major Laparotomies for Lower Abdomen and Pelvis

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ABSTRACT

Aim: Comparison of postoperative mean morphine consumption in patients given preoperative gabapentin and placebo undergoing major laparotomies for lower abdomen and pelvis.
Study design: Randomized controlled trial
Setting: Anaesthesia department, Hameed Latif hospital, Lahore
Duration: Six months i.e. 20-04-2008 to 21-10-2008
Methods: 150 patients having major laparotomies were divided in group I i.e. 75 subjects with multivitamins as control and group II i.e.75 patients with Gabapentin. The two groups were compared for the consumption dose of opioid analgesia, postoperatively. Student's t test was applied and $p<0.05$ was taken as significant.
Results: The mean dose of tramadol consumed by the patients in group I was 43.6±18.9 mg and in group II was 14.7±5.7 mg.
Conclusions: Preoperative use of Gabapentin before laparotomies reduces the morphine usage postoperatively.
Keywords: Gabapentin; postoperative analgesia; morphine consumption:

INTRODUCTION

Pain, nausea and vomiting is a big problem in postoperative care and is important in early recovery of the patient.[1] Morphine is very important when comparing with other injectable analgesics and its use is limited due to nausea and vomiting[2,3]

Gabapentin is an analogue of gamma-amino butyric acid.[4] It is effective for neuropathic pain, diabetic neuropathy, postherpetic neuralgia and reflex sympathetic dystrophy.[5] It selectively affects the central sensitization.[6]

METHODOLOGY

This randomized controlled study was conducted in six months i.e. 20-04-2008 to 21-10-2008 in the Department of Anaesthesi. Hameed Latif Hospital, Lahore. Sample size was 75 cases in two groups, with 95% confidence level, 80% power of study taking magnitude (mean±SD) of morphine consumption i.e., 65.7±31.1 in placebo group and 18.3±15.6 mg in gabapentin group for lower abdomen and pelvis. Subjects having ASA I and II, age 20-60 years and major laporotomies included in this study. Drug abuser, patients received regional anaesthesia or local anaesthetic blocks for surgery, known allergy to opioids or gabapentin and H/o long term analgesics and/or corticosteroids were excluded.

Data Collection Procedure: After approval from ethical committee, 150 patients fulfilling the inclusion criteria were selected and were divided in groups I and II.

Group I received multivitamins as a placebo

Group II received 300mg Gabapentin one hour before surgery.

All patients received 0.05 mg/kg I/V midazolam 15 minutes before surgery. Propofol 2mg/kg I/V was used for induction and rocuronium 0.6mg/kg I/V for relaxation. Endotracheal tube or an LMA was employed accordingly. SPSS version 10 was used for analysis.

RESULTS

The detail of results is given in tables 1,2,3,4,5

Table 1: Age Distribution

Age in years	Group I		Group II	
	n	%age	n	%age
20 – 30	20	26.7	13	17.3
31 – 40	24	32	22	29.3
41 – 50	21	28	29	38.7
51 – 60	10	13.3	11	14.7
Mean ± SD	38.18± 8.97		39.80±9.57	
Range	20 – 60		21 – 60	

Fig 1: Distribution by sex

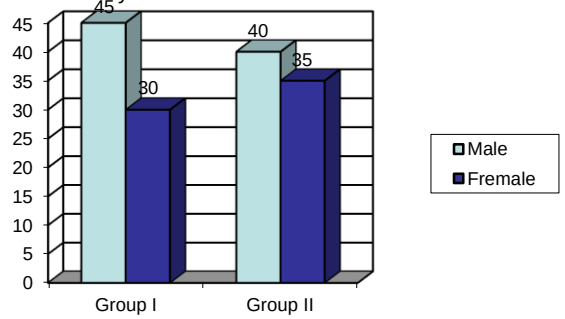

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Fig 2: Distribution by ASA Classification

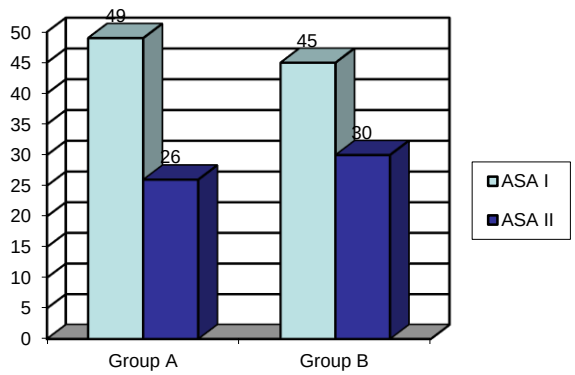

Table 2: Patients by the dose of morphine consumption

	Group I	Group II
Morphine consumed (mg)	43.6±18.9*	14.7±5.7

*P value < 0.05(significant)

Table3: Stratification of age by the dose of morphine consumption

Age	Group I	Group II
20 – 30	41.77±16.4*	13.57±4.9
31 – 40	42.66±17.4*	14.07±6.5
41 – 50	43.84±17.4*	15.01±5.6
51 – 60	44.18±18.1*	14.88±5.9

*P value < 0.05(significant)

Table4: Stratification of Sex by the dose of morphine consumption

Sex	Group I	Group II
Male	44.24±16.7*	15.07±5.2
Female	43.95±16.4*	14.87±5.8

*P value < 0.05(significant)

Table5: Stratification of ASA by the dose of morphine consumption

ASA groups	Group I	Group II
ASA I	44.91±15.9*	15.71±5.3
ASA II	45.51±15.2*	15.67±5.7

*P value < 0.05(significant)

DISCUSSION

In this study, morphine consumption in group I and group II were 43.6±18.9mg in patients without gabapentine and 14.7±5.7mg with Gabapentin respectively. The results were in favor of preoperative usage of Gabapentin. In another study by Metheisen O et al.[7] the postoperative results of Gabapentin were studied in terms of postoperative pain. 23 trials with 1529 patients were included. In a study by Montazori K et al,[8] subjects having ASA I and II were given gabapentin or placebo 2 hours before surgery. Mean opoid usage in the first 24 hours in gabapentin subjects i.e. 15.4±2.5mg was less as compared to control subjects i.e. 17.9±3.0 ($p<0.05$).

A study by Parikh HG et al [9] with 600mg gabapentin one hour before surgery showed decrease in utilization of morphine postoperatively.

CONCLUSION

Preoperative use of Gabapentin before laparotomies reduces the morphine usage postoperatively.
Conflict of interest: None

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