

Comparison of Post-Operative Pain Between Nalbuphine and Tramadol in Total Intravenous Anesthesia for Dilation and Evacuation

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ABSTRACT

Objective: Comparison of post-operative pain between nalbuphine and tramadol in total intravenous anesthesia for dilation and evacuation.

Methodology: This randomized controlled trial was conducted at Fatima Memorial Medical and Dental College and Hospital, Lahore during June 2019 to September 2020. We randomly enrolled in Two Groups-A, who received intravenous injection tramadol 1.5 mg/kg after rapid sequence induction with propofol 2mg/kg, succinylcholine 1-1.5mg/kg followed by LMA insertion and Group-B those receiving nalbuphine 0.1mg/kg after rapid sequence induction with propofol 2mg/kg, succinylcholine 1-1.5mg/kg followed by LMA insertion. Consultant anesthetist administered these drugs and evaluated pain score after 30 mins of surgery done with the help of VAS.

Results: Comparison of mean pain score in both groups shows 2.28±1.13 pain on VAS in Group-A and 1.07±0.82 in Group-B, p value was 0.0001 showing a significant difference. (Table 1)

Conclusion: Post-operative pain is significantly lower in nalbuphine when compared with tramadol in total intravenous anesthesia for dilation and evacuation.

Keywords: Dilation and evacuation, postoperative pain, nalbuphine, tramadol

INTRODUCTION

According to WHO estimates, 42 million females experience abortions in a year. More than 80% of the cases are in first trimester i.e. before 14th gestational week. Two approaches are commonly performed for surgical abortion i.e. D&E and vacuum aspiration. D&E is a day-care procedure and an early discharge from the hospital is required to reduce the burden on hospitals.¹

Effective pain management in post procedure period is a challenging issue for obstetricians. Ineffective pain management may affect perioperative outcome and increase hospital stay as well.² Various cases still avoid D&E and around 80-90% of the cases are not comfortable due to pain, however, pain control is a matter of concern in this procedure.¹ Commonly, short acting narcotic agents are used for intra and post operative pain relief.¹ Tramadol is known as a synthetic analgesic agent which antagonized by α_2 -adrenoceptor antagonists as well as opioid antagonists.³ It extends pain-free period after the procedure is done and significantly reduces the need of post-operative analgesia.⁴ It is found most effective in both IV and intramuscular route for the treatment of postoperative pain.²

Nalbuphine is an opioid agonist-antagonist of the phenanthrene series which was synthesized in an attempt to provide analgesia without the undesirable side effects of the pure agonists.³ Its analgesic and possibly certain anti-pruritic effects are mediated via actions on the μ and κ -receptors, and nalbuphine has been indicated for mild to moderate pain.⁴ The efficacy and effectiveness is recorded in various aspects i.e. multiple trauma, burns, orthopedic injuries, gynecology and intra-abdominal conditions.⁵

According to a study, no pain in 80% and mild pain in 19% of the cases was recorded received

nalbuphine whereas those taking tramadol, 51% had no pain and mild pain was in 48% of the cases, in both groups no moderate to severe pain was recorded in recovery room.⁶

Dilation and evacuation is one of the common procedure presenting in tertiary care hospitals and postoperative pain is a foremost problem. As in routine practice tramadol is used in total intravenous anesthesia. There is no recent data available on the comparison of these two drugs in total intravenous anesthesia for dilation and evacuation. So, the results of my study will be helpful in selecting a proper analgesia for controlling post-operative pain.

METHODOLOGY

This randomized controlled trial was conducted at Fatima Memorial Medical and Dental College and Hospital, Lahore during June 2019 to September 2020. We enrolled all cases between 20-40 years of age undergoing elective dilation and evacuation with 12-14th week of gestation and their ASA status was I/II, whereas all cases who were hypersensitivity to the drugs used in this study, seems to be difficult airway due to any known structured abnormality in neck, tongue, thyroid or jaw, BMI>30 and those with any hepatic disorders including Hepatitis B/C or encephalopathy. These cases were randomly enrolled in Two Groups-A, who received intravenous injection tramadol 1.5 mg/kg after rapid sequence induction with propofol 2mg/kg, succinylcholine 1-1.5mg/kg followed by LMA insertion and Group-B those receiving nalbuphine 0.1mg/kg after rapid sequence induction with propofol 2mg/kg, succinylcholine 1-1.5mg/kg followed by LMA insertion. Consultant anesthetist administered these drugs and evaluated pain score after 30 mins of surgery done with the help of VAS. We evaluated the data with the help of SPSS-20.

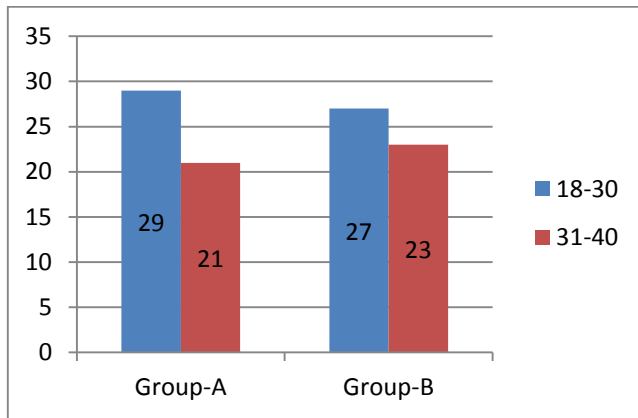
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RESULTS

We found 58%(n=29) in Group-A and 54%(n=27) in Group-B between 20-30 years whereas 42%(n=21) in Group-A and 46%(n=23) in Group-B were between 31-40 years of age, mean age was 28.11±6.61 years in Group-A and 29.06±5.34 years in Group-B. Fig. 1

Comparison of mean pain score in both groups shows 2.28±1.13 pain on VAS in Group-A and 1.07±0.82 in Group-B, p value was 0.0001 showing a significant difference. (Table 1)



Age Distribution

Comparison of Pain Score

Mean pain	Group-A (n=50)		Group-B (n=50)	
	Mean	Sd	Mean	Sd
	2.28	1.13	1.07	0.82

P value=0.02

DISCUSSION

We compared our results with a study, where no pain in 80% and mild pain in 19% of the cases was recorded received nalbuphine whereas those taking tramadol, 51% had no pain and mild pain was in 48% of the cases, in both groups no moderate to severe pain was recorded in recovery room.⁶ These findings are in agreement with our findings.

Jitesh Kumar and others⁷ compared the efficacy and safety of nalbuphine and tramadol for postoperative pain relief in short surgical procedures, they revealed that Pain scores on visual analogue scale (VAS) were not significantly different upto 3rd postoperative hour but after that pain scores on VAS were significantly low in nalbuphine group. Mean sedation scores were significantly more at 2nd and 4th postoperative hour in nalbuphine group. Side effects like nausea vomiting were significantly more in tramadol group. They concluded that Nalbuphine is better

analgesic than tramadol for postoperative pain relief in short surgical procedures.

Khalid etal⁸ compared nalbuphine and tramadol in dilatation and evacuation and found nalbuphine had better pain control than tramadol. Daina MG et al compared nalbuphine with tramadol and reported that more rescue analgesia was required in nalbuphine group compared to tramadol group.⁹

The results of our study reveals that "Nalbuphine is better than tramadol in total intravenous anesthesia for dilatation and evacuation in terms of post-operative pain".

CONCLUSION

Post-operative pain is significantly lower in nalbuphine when compared with tramadol in total intravenous anesthesia for dilatation and evacuation.

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