



PREOPERATIVE ONDANSETRON VERSUS METOCLOPRAMIDE FOR PREVENTION OF NAUSEA AND VOMITING IN ELECTIVE LOWER SEGMENT CAESAREAN SECTION (LSCS) UNDER SPINAL ANAESTHESIA

Anaesthesiology

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ABSTRACT

INTRODUCTION: Post Operative Nausea and Vomiting (PONV) are the most common distressing symptom after LSCS. Antiemetic drugs play an important role to prevent it. Though many drugs have been tried as prophylaxis and treatment of PONV, no drug has been proved significantly effective and hence, the present study was undertaken to compare the efficacy and safety of IV metoclopramide and IV Ondansetron as prophylaxis for postoperative nausea and vomiting in LSCS under spinal Anaesthesia

OBJECTIVES: To study comparison of IV Ondansetron and IV Metoclopramide for prevention of postoperative nausea and vomiting as well as to compare any adverse effect occurrence through drugs in elective LSCS under spinal Anaesthesia.

METHODS: It was a prospective study in which 100 patients were selected and randomly allotted into 2 groups, 50 patients in each group, according to inclusion criteria. Group A: Inj. Ondansetron 0.15 mg/kg i.v. Group B: Inj. Metoclopramide 0.25 mg/kg i.v.

RESULT: Mean Age, Weight and Duration of surgery are comparable in both the groups without any statistical significant difference. Incidence of nausea was 12% in group B and there was no incidence of nausea in group A in 30 min after injecting drugs. The incidence of nausea was 14% in group A and 28% in group B in 45 min after injecting drugs. Incidence of vomiting was 16% in group B and there was no incidence of vomiting in group A in 30 min after injecting drugs. The incidence of vomiting was 8% in group A and 22% in group B in 45 min after injecting drugs

CONCLUSION: Efficacy and safety of ondansetron is more than metoclopramide for prevention of nausea and vomiting in LSCS under spinal Anaesthesia

KEYWORDS

Spinal Anaesthesia, Ondansetron, Metoclopramide, LSCS, Nausea, Vomiting

INTRODUCTION

Post-operative nausea and vomiting (PONV) are the most common side effects in the post-Anaesthesia care unit which can result in morbidity like wound dehiscence, bleeding, pulmonary aspiration of gastric contents, fluid and electrolyte disturbances, delayed hospital discharge, unexpected hospital admission and decreased patient satisfaction. It is one of the commonest complaint in females posted for LSCS under spinal Anaesthesia Early studies reported incidence of postoperative nausea and vomiting is as high as 75-80%.^[1,2]

Antiemetic drugs are beneficial for prevention of nausea and vomiting. Metoclopramide is used as an antiemetic for many years and has been considered the most effective single agent by Lussos et al.^[3]. Ondansetron 5HT₃ antagonist has been proved effective in the management of PONV and also in emesis induced by cancer chemotherapy.^[4] Many drugs have been on trial, but none of the drug was found effective completely. Of late the central 5HT₃ antagonists have been promising in achieving the objectives in comparison to the ones previously used^[5].

AIMS AND OBJECTIVES

To do comparison of IV Ondansetron and IV Metoclopramide for prevention of postoperative nausea and vomiting as well as to compare any adverse effects occurrence through drugs in elective LSCS under spinal Anaesthesia.

METHODOLOGY

It is prospective study in which 100 patients were selected and randomly allotted into 2 groups, 50 patients in each group, according to inclusion criteria.

Group A: Inj. Ondansetron 0.15 mg/kg i.v.
Group B: Inj. Metoclopramide 0.25 mg/kg i.v.

INCLUSION CRITERIA: • Patients over the age of 18 years • ASA I and 2 • Scheduled for elective LSCS.

EXCLUSION CRITERIA: • Patient refusal • Coagulation disorders • Patient with Body mass index > 35 • Patients with h/o cardiac, respiratory, renal or hepatic failure • Patients with H/o Motion sickness • Allergy to medications • Psychological disorders

Analysis: Results are expressed as mean $\pm$ SD. For qualitative data chi-square test was applied and for quantitative data student's t-test was

applied. The level of significance was taken as $P < 0.05$.

RESULTS

As shown in Table no.1. The mean age of patients of Group A was 26.36 $\pm$ 4.53 years and Group B was 26.48 $\pm$ 3.84 years. The mean weight of patients of Group A was 58.68 $\pm$ 2.25 kg and Group B was 58.80 $\pm$ 2.19kg. The mean duration of surgery for Group A was 78.1 $\pm$ 2.35 mins and for Group B was 78.44 $\pm$ 2.23 mins. P value for all variables are 0.24, 0.94 and 0.7 respectively which is statistically insignificant. Therefore, both the groups were comparable.

Table 1: Age, Weight and Duration of surgery wise comparison between Metoclopramide and Ondansetron study groups

Variable	Group A(N=50)	Group B(N=50)	p value
Age (years)	26.36 $\pm$ 4.53	26.48 $\pm$ 3.84	0.24
Weight (kg)	58.68 $\pm$ 2.25	58.80 $\pm$ 2.19	0.94
Duration of surgery(min)	78.1 $\pm$ 2.35	78.44 $\pm$ 2.23	0.7

As mentioned in table no.2 episodes of nausea were recorded in both groups at 30 min, 60 min, 90 min, 2 hr, 6 hr, 12 hr and 24 hr. In 30 min no episode of nausea were recorded in group A and 6 episodes of nausea were recorded in group B. P value was 0.03 (< 0.05), which is statistically significant amongst the two groups. In 45 min 7 episodes of nausea were recorded in group A and 14 episodes of nausea were recorded in group B. P value was 0.08 which is statistically not significant. During other time periods, P value were > 0.05 which is statistically insignificant amongst two groups. Overall episodes of nausea were quite less in Ondansetron group (11 episodes) in Comparison of Metoclopramide group (27 episodes)

Table 2: Comparison Of Episodes Of Nausea Between Metoclopramide and Ondansetron

Nausea (episodes)	Group A n (%)	Group B n (%)	P value
30 min	0	6 (12.0)	0.03
45 min	7 (14.0)	14 (28.0)	0.08
60 min	1 (2.0)	0	1.0
90 min	0	3 (6.0)	0.24
2 hr	3 (6.0)	4 (8.0)	1.0
6 hr	0	0	0
12 hr	0	0	0
24 hr	0	0	0

As described in table no.3 episodes of vomiting were recorded in both groups at 30 min, 60 min, 90 min, 2 hr, 6 hr, 12 hr and 24 hr. In 30 min no episode of vomiting were recorded in group A and 8 episodes of vomiting were recorded in group B. P value was 0.009 (<0.05), which is statistically significant amongst the two groups. In 45 min 4 episodes of vomiting were recorded in group A and 11 episodes were recorded in group B. P value was 0.04 (<0.05), which is statistically significant amongst the two groups. During other time periods, P value were >0.05 which is statistically insignificant amongst two groups. Overall episodes of vomiting were quite less in Ondansetron group (10 episodes) in Comparison of Metoclopramide group (25 episodes).

Table 3: Comparison of episodes of Vomiting between Metoclopramide and Ondansetron

Vomiting (episodes)	Group A n (%)	Group B n (%)	P value
30 min	0	8 (16.0)	0.009
45 min	4 (8.0)	11 (22.0)	0.04
60 min	2 (4.0)	0	0.47
90 min	4 (8.0)	5 (10.0)	0.72
2 hr	0	1 (2.0)	1.0
6 hr	0	0	0
12 hr	0	0	0
24 hr	0	0	0

DISCUSSION

Many antiemetic drugs are beneficial for prevention of nausea and vomiting like Metoclopramide, Domperidone, Phenothiazines, Butyrophenones, anticholinergics, antihistamines. The introduction of 5HT₃ receptor antagonists' class of drugs in the 90s represents a major improvement in the pharmacotherapy, chemotherapy and radiation therapy-induced nausea and vomiting. Ondansetron, the first 5-HT₃ receptor antagonist to be introduced, is the most commonly used drug of this class. Others include Granisetron, Tropisetron and Dolasetron. This study was conducted to compare ondansetron and metoclopramide and have shown that ondansetron has greater efficacy in controlling established PONV.^[6]

According to study done by Sanjul Dandoda et al.^[7] in Uttarakhand incidence of vomiting in Ondansetron group after 0-1 hour of surgery was 13.3% while during the same time incidence of vomiting was 23.3% in Metoclopramide group. between 1-3 hours' time period incidence of vomiting in Ondansetron group was 13.3% and in Metoclopramide group was 26.6%. In present study incidence of vomiting in 0-1 post-operative hour in Ondansetron group was 12.0% while for the same duration episode of vomiting in Metoclopramide group was 38.0% so, comparison suggests that in Ondansetron study group episodes of vomiting are significantly less. Similar kind of observations were done in both studies in 1-3 hour post-operative period where again Ondansetron have less episodes of vomiting in comparison to Metoclopramide group.

Comparing Nausea in both studies, in study done by Sanjul Dandoda et al. episode of nausea in Ondansetron group was 3.6% in 0-1 hours while in Metoclopramide group it was 20%. In 1-3 hours episode of Nausea in Ondansetron group was 10% and in metoclopramide group it was 20.0%. Similar kind of observations were done in present study where incidence of Nausea in Ondansetron group in 0-1 hour were 16.0% and in 1-3 hours it was 6.0% while in Metoclopramide group incidence of episode of Nausea in 0-1 hour was 40.0% and in 1-3 hours it was 14.0%.

Another study done by Vasantha Kumar J et al.^[8] in Bangalore showed episodes of vomiting in first post-operative hour were 12 in Metoclopramide group and 7 in Ondansetron group. Overall in 24 hour period there were 18 vomiting episodes observed in Metoclopramide group and 10 in Ondansetron group. According to study done by Prasada Rao Manem et al.^[5] in Srikkulam overall episodes of vomiting were 19 in Metoclopramide group and 10 in Ondansetron group. In present study overall episodes of vomiting in Metoclopramide group over 24 hours were 25 and in Ondansetron group were 10. So all above study suggests that Ondansetron have less post-operative vomiting episodes

CONCLUSION

We concluded that the incidence of nausea and vomiting were recorded more in metoclopramide group than ondansetron group within twenty-four hours of injecting drugs with hemodynamically stable and no any complications of both drugs were recorded in our study. Therefore, the efficacy and safety of ondansetron is more than metoclopramide for

prevention of nausea and vomiting in LSCS under spinal Anaesthesia.

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