Research Article

Effectiveness of metoclopramide in preventing the incidence of postoperative nausea and vomiting in lower-segment caesarean section

Rashmi1*, Shivanand PT1, Manjunath ML2

1Department of Anaesthesiology, Shivamogga Institute of Medical Sciences, Shivamogga, Karnataka, India
2Department of Physiology, Shivamogga Institute of Medical Sciences, Shivamogga, Karnataka, India

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*Correspondence:
Dr. Rashmi,
E-mail: rashmip@yahoo.co.in

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ABSTRACT

Background: The common and distressing symptoms which follow anaesthesia and surgery are pain, nausea and vomiting. Nausea and vomiting are the most common side effects in the post-anaesthesia care unit. But postoperative nausea and vomiting have received less attention, though there are extensive literature, data are frequently difficult to interpret and compare. Therefore, the present study was undertaken to investigate the efficacy and safety of IV Metoclopramide as prophylaxis for postoperative nausea and vomiting in lower-segment caesarean section (LSCS) under spinal anaesthesia.

Methods: After institutional approval and informed consent fifty ASA I and II patients undergoing non-emergent LSCS taken for study. The patients received IV Metoclopramide 10 mg. Anaesthetic management was standardized. The incidence of vomiting and retching as number of episodes was studied. Nausea was graded depending on the severity and data derived.

Results: The mean episodes of emesis, nausea and retching at different postoperative duration were recorded. 64% patients experienced emesis at 1 hour. The incidence of nausea was more (56%) at 1 hour. 52% of patients experienced retching at 1 hour whereas, 64% at 2 hour of postoperative.

Conclusions: Injection of Metoclopramide (10 mg) decreased the incidence of PONV as the side effect with this drug was minimal.

Keywords: PONV, Antiemetic Drug, Metoclopramide, Emesis, Nausea, Retching

INTRODUCTION

Nausea is an unpleasant, but not painful sensation referred to the pharynx and upper abdomen, associated with a desire to vomit or the feeling that vomiting is imminent. This may be brief or prolonged, often occurring m waves and may precede vomiting or occurs in isolation. Vomiting usually alleviates the sensation of nausea.1 Vomiting is the forceful expulsion of upper gastrointestinal contents via the mouth and is usually, but not always, preceded by retching where no expulsion takes place but which involves activation of the same muscle groups. It is one of the defensive reflexes centre around the gastrointestinal tract. The pre absorptive (upper gut) and post absorptive circulation) detectors trigger a series of events when some toxin or irritants are ingested. Nausea stops further ingestion and facilitates the development of a learned aversion so that the food is rejected before ingestion when encountered again. Gastric relaxation reduces gastric emptying of the contaminated food and intestinal retro-peristalsis returns any contaminated food to the stomach. Retching and vomiting purges the stomach. But clinically nausea and vomiting are regarded as undesirable, because of the consequences they produce.2,3

Nausea and vomiting have been associated for many years with the use of general anaesthetics for surgical
There are many different modes of intervention to prevent PONV. Antiemetic drugs play an important role in therapy of PONV. Though many drugs have been tried as prophylaxis and treatment of PONV, no drug has been proved significantly effective and a search for better drug continues. The study conducted about the astounding efficacy of 5HT3 receptor antagonists as an antiemetic in the management of vomiting induced by chemotherapy and radiotherapy was followed by new era in the treatment of PONV. Metoclopramide is in use as antiemetic for many years. But, the effectiveness of this drug in reducing and preventing incidence of PONV in LSCS under subarachnoid block was not well documented so far. Therefore, the present study has been undertaken to find out the efficacy and safety of prophylactic use of intravenous Metoclopramide (10mg) in preventing or reducing the incidence of PONV, in women patients undergoing LSCS under subarachnoid block.

METHODS

The study was carried out after the approval from ethical committee, and an informed, written consent from all the parturients. Fifty parturients undergoing elective LSCS were selected. All participants belonged to ASA grade I or II and were aged above 18 years and were received Metoclopramide 10 mg (i.v). Parturients with renal impairment, hepatic disease, neurological and endocrinal abnormalities were excluded. Parturients with history of PONV in previous surgery and patients with history of motion sickness, with history of vomiting and/or Ryle’s tube in situ the last 24 hours were also excluded.

Pre-operative evaluation: Pre-operative visit was conducted on the day before surgery. Detailed history of parturients complaints was noted. General and systemic examination of cardiovascular and respiratory system was done.

Pre-operative order: Patients were advised to remain nil orally after 10 P.M. the day before surgery.

Anaesthesia: When the patient was brought to the operation theatre, her pulse rate and BP were recorded. The patients were received Metoclopramide 10 mg (i.v) injection 3-5 minutes before subarachnoid block. Pulse, BP and any side effects of drug given was also noted. Sub arachnoid block was performed in a left lateral position using 23G spinal needle at L3-L4 or L2-L3 interspace. 0.5% bupivacaine 2-2.5 ml depending on patients, were given. Following injection, patient was immediately brought on supine position and time of onset of action, T6 level was noted using pinprick method. Desired operative position was given after 5 minutes. Intra operative pulse, BP monitored and maintained with fluids. Duration of surgery was noted.

The parturients were observed for 24 hours post operatively. Nausea, retching and emesis were recorded at 1 hour, 2 hour, 6 hour and 24 hours respectively. The number of episodes of emesis and type were recorded. Repeated vomiting within 1-2 minute period was recorded as single emesis. The data were recorded as follows. No emesis - complete control, 1-2 episodes - nearly complete control, 3-5 episodes partial control and >5 episodes as failure. Similarly, the number of episodes of retching (dry heaves) was also registered. The nausea was graded as 0 as none, 1 as mild, 2 as moderate and 3 as severe. Any side effects appreciated were also recorded. The results were tabulated at 1 hour, 2 hour, 6 hour and 24 hours post operatively. Severe nausea and vomiting was labelled as failure and rescue therapy was initiated with i.v. Metoclopramide and i.v. fluids. Retching is defined as the dry heaves; which was recorded as the number of episodes. The total number of retching in 5 minutes was taken as one episode.

Statistical analysis: The data obtained in the present study was expressed as percentage and mean±S.D. Data was analyzed using ANOVA and Tukey’s HSD test for statistical significance and p <0.05 was considered significant.

RESULTS

A clinical study on 50 patients in ASA I and II undergoing LSCS under spinal anaesthesia was undertaken to find out the efficacy and safety of IV Metoclopramide.

Large numbers of cases were in the 23-26 years age group mean age was 24.9 years (Table 1). The number of patients experiencing the emesis episodes, nausea and retching was shown in Table-2. 4 and 6. The result indicated that significantly increased (p< 0.001) episodes of emesis in 1st hour of postoperative period. It was nil at 24 hours of postoperative period (Table 3). There were no episodes of emesis at 24 hours of postoperative period.

<table>
<thead>
<tr>
<th>Age group in years</th>
<th>No of patients</th>
<th>Percentage of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-22</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>23-26</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>27-30</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>30-34</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

Note: Large numbers of cases were in the 23-26 years age group mean age was 24.9 years.
The results of the present study indicated the episodes of emesis; nausea grades and retching episodes were severe at 1st hour of postoperative period and were completely controlled at 24 hours of postoperative period. This suggests that Metoclopramide is a suitable agent to prevent PONV.
According to a review on the factors associated with increased PONV and the measures available to reduce its incidence in paediatric patients demonstrated the paediatric patients (school children) have a higher incidence of PONV (34-50%), while preschool children have incidence of 20% and PONV occurred in 34% of paediatric patients when anaesthesia was less than 30 minutes duration or 48% if it was longer than 30 minutes. A study conducted for and compared it with intravenous metoclopramide to prevent PONV after middle ear surgery in 60 patients. Where, patients randomly allocated to receive ondansetron 0.15 mg/kg and injection metoclopramide 0.2 mg/kg. The incidence of PONV was reduced from 70% to 15% with injection Ondansetron (P< 0.05). They concluded that injection ondansetron in a dose of 0.15 mg/kg is effective and safe anti-emetic drug than Metoclopramide. They also compared the incidence of nausea, vomiting and headache after ondansetron 0.06 mg/kg intravenous, prochlorperazine 0.2 mg/kg LM and prochlorperazine 0.1 mg/kg IV. To 282 patients, undergoing adenotonsillectomy in a double blind controlled study, reported that, the incidence of nausea and vomiting reduced from 29% to 2% by intravenous ondansetron (P< 0.005) and headache was most frequent after intravenous ondansetron in 35% (P< 0.05).

CONCLUSION

Intravenous administration of Metoclopramide could be able to control the episodes of emesis; nausea and retching episodes successfully at 24 hours of postoperative period. This clearly suggests that Metoclopramide is a suitable agent to prevent PONV.

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REFERENCES


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