ORIGINAL ARTICLE

Compare the Efficacy of Odansetron versus Prochlorperazine for Preventing Nausea and Vomiting after Laparoscopic Cholecystectomy

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ABSTRACT

Aim: To compare the efficacy of odansetron with prochlorperazine in preventing postoperative nausea and vomiting in patients undergoing laparoscopic cholecystectomy.

Study Design: Randomized controlled trial

Place and Duration of Study: Main Operation Theatre DHQ Teaching Hospital/Gujranwala Medical College, Gujranwala from 1st January 2019 to 31st October 2019.

Methodology: One hundred and ten patients of both genders with ages 20 to 60 years undergoing laparoscopic cholecystectomy were enrolled in this study. Patients were divided into two groups I and II. Each group contains 55 patients. Group A received odansetron and group B received prochlorperazine before induction of anesthesia. Patients were follower up for postoperative 24 hours to examine the efficacy of medication. Data was analyzed by SPSS 24.0. P-value <0.05 was taken as significant.

Results: No significant difference was observed between both groups regarding age, gender, BMI and ASA class with p-value >0.05. In group A 7 (12.72%) patients had nausea and 10 (18.18%) had vomiting while in group B 8 (14.55%) patients had nausea and 6 (10.91%) patients had vomiting, no significant difference was observed between both groups A and B with p-value >0.05. In group A 8 (14.55%) patients had adverse effects while in group B 12 (21.82%) patients had side effects of medication such as headache, dizziness and sedation. No significant difference was observed regarding anti-emetics use between both groups (p value >0.05).

Conclusion: Ondansetron and prochlorperazine both are safe and effective for preventing postoperative nausea and vomiting with fewer rates of side effects in patients undergoing laparoscopic cholecystectomy.

Keywords: Odansetron, Prochlorperazine, Laparoscopic Surgery, Nausea, Vomiting

INTRODUCTION

Postoperative nausea and vomiting (PONV) is most normal intricacy experienced after laparoscopic medical procedures under broad sedation.[1] It frequently causes aspiratory yearning electrolyte awkwardness, lack of hydration and esophageal burst.[2] The rate of PONV is as high as 60-70% and is impacted by different patient related elements, sedation strategy, kind of medical procedure, drugs utilized and post-employable factors, for example, torment, dazedness, ambulation and so on.[3,4] We have changed our sedative methods to make sure about progressively quick and smooth recuperation because of improved pre-usable and post-employable drug, refinement of usable procedures and recognizable proof of patient's prescient elements.[5,6] The administration of queasiness and heaving has been improved in most recent few years with the presentation of 5 Hydroxytryptamine (5-HT3) receptor rivals. Ondansetron is a model of 5-HT3 receptor adversary and regularly utilized medication. Ondansetron is considered as a highest quality level medication for treatment of PONV.[7] Studies Rother[8] studied that prophylactic utilization of antiemetics have uncovered that prochlorperazine 0.2 mg kg1 IM or on the other hand 0.1 mg kg1 IV is more powerful than either metoclopramide 0.15 mg kg1 orally or IV or droperidol 0.037 mg kg1 IV.

While ondansetron 0.06 mg kg1 IV has demonstrated predominant as a prophylactic antiemetic contrasted and metoclopramide[9] and droperidol[10], the relative efficacies of ondansetron and prochlorperazine have not been investigated. The present study was conducted to examine the efficacy of odansetron only and compare with prochlorperazine for preventing postoperative nausea and vomiting in patients undergoing laparascopic cholecystectomy.

MATERIALS AND METHODS

This randomized controlled trial was conducted at Main Operation Theatre DHQ Teaching Hospital/Gujranwala Medical College, Gujranwala from 1st January 2019 to 31st October 2019. A total of 140 patients of both genders with ages 20 to 60 years underwent laparoscopic cholecystectomy under general anesthesia were enrolled. Patients detailed demographic including age, sex, body mass index (BMI) and physical examination (ASA class I and II) were recorded after taking informed written consent from all the patients. Patients who received antiemetics within 48 h before surgery, patients with cardiovascular diseases, pregnant women, and Patients with a history of recurrent vomiting in the postoperative period were excluded. All the patients were equally divided into two groups A and B. Group A consist of 55 patients and received Odansetrone 4mg and group B consist of 55 patients received prochlorperazine 10mg in 20ml filled syringes, who administered drugs before induction of anesthesia. Efficacy of doses was examined at 24 hours after surgery and compares the frequency of nausea and vomiting between both groups. Side effects such as headache, dizziness and sedation were also examined.

Need for anti-emetic use was examined between both groups. All the data was analyzed by SPSS 24. Chi-square test was applied to compare the efficacy between both groups with p-value <0.05 was taken as significant.

RESULTS

No significant difference was observed between both groups regarding age, gender, BMI and ASA class with p-value >0.05. In group A 40 (72.73%) patients were females and 15 (27.27%) were males with mean age 39.46±11.74 years while in group II 36 (65.45%) patients were females and 19 (34.55%) were males with mean age 40.10±9.43 years. Mean BMI between both groups A and B was 22.32±3.51 kg/m^2 and 22.85±3.12 kg/m^2. 49 (89.09%) and 6 (10.91%) patients in group A had ASA class I and II. In group B 47 (85.45%) and 8 (14.55%) patients had ASA class I and II (Table 1). No significant difference was observed between both groups regarding incidence of nausea and vomiting between both groups. In group A 7 (12.72%) patients had nausea and 10 (18.18%) had vomiting while in group B 8 (14.55%) patients had nausea and 6 (10.91%) patients had vomiting (Table 2). In group A 8 (14.55%) patients had adverse effects while in group B 12 (21.82%) patients had side effects of medication such as headache, dizziness and sedation (Table 3).

No significant difference was observed regarding anti-emetics use between both groups (p value >0.05), in group A 4 (7.27%) patients and in group B 5 (9.09%) patients had need to used anti-emetics (Table 4).

Table 1: Baseline details of all the patients

Variable	Group A	Group B
Age (years)	39.46±11.74	40.10±9.43
Gender		
Male	15 (27.27%)	19 (34.55%)
Female	40 (72.73%)	36 (65.45%)
BMI (kg/m^2)	22.32±3.51	22.85±3.12
ASA class		
I	49 (89.09)	47 (85.45)
II	6 (10.91)	8 (14.55)

P>0.05 (Not significant)

Table 2: Incidence of nausea and vomiting between both groups

Variable	Group A	Group B	P-value
Nausea	7 (12.72%)	8 (14.55%)	<0.001
Vomiting	10 (18.18%)	35 (64.29%)	<0.001

Table 3: Comparison of overall side effects between both groups

Side effects	Group A	Group B	P-value
Yes	8 (14.55%)	12 (21.82%)	>0.05
No	47 (85.45%)	43 (79.185)	

Table 4: Comparison of rescue antiemetics in both groups

Rescue antiemetics	Group A	Group B	P-value
Yes	4 (7.27%)	5 (9.09%)	>0.05
No	51 (92.73%)	50 (90.915)	

DISCUSSION

Postoperative nausea and vomiting (PONV) are most common complications associated with general or local anesthesia and these conditions can lead to severe complications and extend the hospital stay.[11] Many of medications have been used for the prevention of post-operative nausea and vomiting, in which Odansetron is considered as a drug for choice in prevention of postoperative nausea and vomiting.[12] In present study we have done comparison of odansetron with prochlorperazin in prevention of postoperative nausea and vomiting in patients undergoing laparoscopic cholecystectomy. Majority of patients in our study were females overall 69.09% and males were 30.91% with overall mean age of 39.85±8.46 years. These results showed similarity to many of previous studies in which majority of patients were females 65% to 80% whom were underwent laparoscopic cholecystectomy and majority of patients were in the age group 35 to 45 years.[12,13] In present study we found no significant difference regarding age, gender, BMI and ASA class between both groups. A study conducted by Hammad et al[14] regarding efficacy of Odansetron only versus combine Odansetron and Dexamethasone for preventing postoperative nausea/vomiting. In their study no significant difference was reported regarding BMI between both groups. They also reported that 82% in Odansetron group and 80% patients in Odansetron and Dexa group had ASA class I.

In our study no significant difference was observed between both groups regarding incidence of nausea and vomiting between both groups. In group A 7 (12.72%) patients had nausea and 10 (18.18%) had vomiting while in group B 8 (14.55%) patients had nausea and 6 (10.91%) patients had vomiting. A study conducted by Malak et al[15] regarding compare the effectiveness of odansetron, prochlorperazine and cyclizine in preventing PONV, reported that in odansetron group PO nausea found in 4.6% patients and vomiting found in 9.2% patients and in prochlorperazine group nausea found in 7.7% patients and vomiting found in 4.6% patients. There was no significant difference observed regarding incidence of PONV between three groups.

Sharma et al[16] reported in their study that incidence of PONV (*P*=0.002), nausea (*P*=0.0002) and vomiting (*P*=0.006) was significantly lower in palonosetron group than in ondansetron group in 2- to 12-hour period. Grover et al[17] demonstrated that oral odansetron had lower incidence rate of PONV as compared to placebo in patients undergoing laparoscopic cholecystectomy. Chaudhary et al[18] reported that patients who received palonosetron had less rate of PONV as compared to those who received odansetron after laparoscopic surgeries.

In present study 8 (14.55%) patients had adverse effects who received odansetron while in prochlorperazine group 12 (21.82%) patients had side effects of medication such as headache, dizziness and sedation. No significant difference was observed between both groups. No significant difference was observed regarding anti-emetics use between both groups (p value >0.05). These results showed similarity to the study by Malak et al[15], in which no significant difference was observed between three groups regarding side effects of medication. Some other studies demonstrated that odansetron had significantly less rate of adverse effects as compared to dexamethasone.[19,20]

CONCLUSION

Ondansetron and prochlorperazine both drugs are safe and effective for preventing postoperative nausea and vomiting

with fewer rates of side effects in patients undergoing laparoscopic cholecystectomy.

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