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Prevention of nausea &vomiting after laparoscopic cholecystectomy by administration of Droperidol and Metoclopramide

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Abstract
Many of the patients have described that averting of PONV is of higher distress than escaping post-operative pain. PONV is also related with deferred release from the recovery room and persistent hospital care and, consequently it results in the increase in the health care expenditures.
The study was planned in the north Indian hospital. The age group of the patients is ranges from 20 to 60 years. Total 50 patients were evaluated for the study. GROUP A: Patients received inj. droperidol 20 mg per kg or injection, whereas GROUP B: Patients received inj. metoclopramide 0.2 mg per kg.
The patients undergoing the general anaesthesia for the laparoscopic cholecystectomy experience more nausea and vomiting. Hence from the present study population it can be concluded that the administration of droperidol and metoclopramide is useful in the controlling of the Postoperative nausea and vomiting. The metoclopramide showed less side effects as compared to droperidol. Also there are some recent reports of the droperiodol causing the cardiac complications on higher doses. Hence we had used very low dose of it.

Keywords: laparoscopic cholecystectomy, PONV, postoperative nausea and vomiting, droperiodol, metoclopramide, etc

Introduction
The Post-operative nausea and vomiting (PONV) is responsible for a conjoint hurdle of surgery and anaesthesia. Even yet it is infrequently lethal, PONV is spiteful and related with patient uneasiness, and unhappiness with their pre-operative precaution.
Many of the patients have described that averting of PONV is of higher distress than escaping post-operative pain. PONV is also related with deferred release from the recovery room and persistent hospital care and, consequently it results in the increase in the health care expenditures.
The PONV morbidity consists of the symptoms like wound dehiscence, dehydration, electrolyte disturbance, interference with nutrition and, more rarely, oesophageal rupture or aspiration pneumonitis.
It is significant that group of peoples responsible for the caring for surgical patients recognise PONV. There was a survey established in the year of 2000 revealed awareness breaches. There are only 60 per cent of ward nurses were giving correct responses for the survey [1].
The generally administered emetogenic drugs in anaesthesia comprise nitrous oxide, physostigmine and opioids. The intravenous anaesthetic propofol is presently the least emetogenic general anaesthetic. These medications are assumed to arouse the chemoreceptor trigger zone (CTZ). This area is on the floor of the fourth ventricle and is effectually outside of the blood-brain barrier. This marks it enormously profound to toxin and pharmacological stimulation. There are plentiful neurotransmitters such as histamine, dopamine, serotonin, acetylcholine, and the more recently discovered neurokinin-1 (substance P) [2].
The rigorous nature of vomiting passageways are also not fully implicit but a number of patho physiological mechanisms known to cause nausea or vomiting have been recognized. The foremost coordinator is the vomiting centre, a group of neurones situated in the medulla oblongata [3].
Cholecystectomy (/ˌkɒləsɪsˈtɛktəmi/; plural: cholecystectomies) is the surgical removal of the gallbladder. It is a common treatment of symptomatic gallstones and other gallbladder conditions. Surgical options include the standard procedure, called laparoscopic cholecystectomy, and an older, more invasive procedure, called open cholecystectomy. The surgery can lead to postcholecystectomy syndrome, as well as more serious complications such as bile duct injury.
Laparoscopic cholecystectomy has now replaced open cholecystectomy as the first-choice of treatment for gallstones and inflammation of the gallbladder unless there are contraindications to the laparoscopic approach. This is because open surgery leaves the patient more prone to infection [4]. Sometimes, a laparoscopic cholecystectomy will be converted to an open cholecystectomy for technical reasons or safety.
Laparoscopic cholecystectomy requires several (usually 4) small incisions in the abdomen to allow the insertion of operating ports, small cylindrical tubes approximately 5 to 10 mm in diameter, through which surgical instruments and a video camera are placed into the abdominal cavity. The camera illuminates the surgical field and sends a magnified image from inside the body to a video monitor, giving the surgeon a close-up view of the organs and tissues. The surgeon watches the monitor and performs the operation by manipulating the surgical instruments through the operating ports.
Laparoscopic bile duct exploration (LBDE) is recommended in current treatment guidelines for the management of choledocholithiasis with gallbladder in situ. Failure of this

technique is common as a consequence of large or impacted common bile duct (CBD) stones. A new technique, LABEL (Laser-Assisted Bile duct Exploration by Laparoendoscopy) has been developed to enhance LBDE in cases of impacted or large stones using holmium-laser increasing the feasibility of the transcystic stone retrieval and reducing overall operative time in the treatment of choledocholithiasis [5].

The mechanism of its antiemetic action is not well under stood. The study has been planned to evaluate the droperidol and metoclopramideand found to be effective for the management of PONV.

Methodology

The study was planned in the north Indian hospital; the age group of the patients is ranges from 20 to 60 years. Total 50 patients were evaluated for the study. As per the classification of the American Society of Anaesthesiologists I and II physical conditions were enrolled on to the study. After taking informed written consent and approval of the Institutional Ethics Committee.

Following was the inclusion and Exclusion criteria of the study:

Inclusion Criteria

1. Age 20- 60 years
2. American Society of Anaesthesiologists I and II physical conditions patients

Exclusion Criteria

1. Patients who received antiemetics within 48 h before surgery
2. Patients at particular risk of heart conditions, such as congenital disease
3. Pregnant/lactating females.
4. Patients who were predisposed to low levels of potassium and magnesium in the blood
5. Patients on other medications that lead to QT prolongation
6. Patients with a history of recurrent vomiting in the postoperative period

On arrival to the operation theatre, routine monitoring devices were attached. Anesthesia was induced with propofol 5mg/kg. Tracheal intubation facilitated with atracurium 0.5mg/ kg. Maintenance of anesthesia was done by oxygen, nitrous oxide and halothane and ventilation controlled. 30-40 minutes before end of surgery, patients were given the prepared study drug according to their group allocation.

After extubation, based on the randomization table, patients receive intravenously either inj. droperidol 20 mg per kg or inj.metoclopramide 0.2 mg per kg.

GROUP A: Patients received inj. droperidol 20 mg per kg or inj.

GROUP B: Patients received inj. metoclopramide 0.2 mg per kg.

Results & Discussion

The data from the 50 patients were collected and present in the following tables.

Table 2: Comparison of gender between groups

Gender	Group A n=25	Group B n=25
MALE	12	14
FEMALE	13	11
Total	25	25

In the both study group Certain undersitable events like headache, dizziness, restlessness and drymouth/lip were noted among both groups.

	Group A n=25	Group B n=25
Headache	3	2
Dizziness	7	0
Dry mouth/lip	5	3
Restlessness	3	1

The patients administered with the droperidol injection enrolled in the group A. This group of 3 patients showed headache. 7 patients having the problem of dizziness. 5 patients had dry mouth and 3 patients had restless as the side effects. The group B patients received inj. Metoclopramide are studied under group B. In this study group 2 patients had headache; 3 patients had dry mouth and 1 patient had restlessness.

Postoperative nausea and vomiting is the commonest side effect seen in the patients undergoing the anaesthesia and surgery. Mainly the patients undergoing are having more observation of the Postoperative nausea and vomiting after the laparoscopic cholecystectomy.

Previous studies had claimed that droperidoladministered prophylactically in doses of 0.25 – 5 mg was an effective antiemetic [6, 7]. However, the observed results in our study with 20 mgkg-1 of droperidol I.V. were ineffective in controlling PO NV after LC. An increaseddose of droperidol was not given because of the recently reported high association with morbidity and mortality dueto cardiac cause.

Our results with droperidol and metoclopramide are in agreement with the study results of Fujii *et al*. Furthermore, droperidol 20 mgkg-1, and metoclopramide0.2 mgkg-1 have been used for the control of PONV after LC and were also used in the present study [8].

Conclusion

The patients undergoing the general anaesthesia for the laparoscopic cholecystectomy experience more nausea and vomiting. Hence from the present study population it can be concluded that the administration of droperidol and metoclopramide is useful in the controlling of the Postoperative nausea and vomiting. The metoclopramide showed less side effects as compared to droperidol. Also there are some recent reports of the droperiodol causing the cardiac complications on higher doses. Hence we had used very low dose of it.

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