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Recommended Citation

Ismail, S. (2008). Practice of use of antiemetic in patients for laparoscopic gynaecological surgery and its impact on the early (1st two hrs) postoperative period. *Journal of the Pakistan Medical Association*, 58(4), 203-5.

Available at: http://ecommons.aku.edu/pakistan_fhs_mc_anaesth/37

Practice of use of antiemetic in patients for laparoscopic gynaecological surgery and its impact on the early (1st two hrs) postoperative period

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Abstract

There is no agreed technique for minimizing PONV (Postoperative Nausea and Vomiting) although some techniques are associated with low rate. Best practice involves identifying high risk patients and surgeries and use of prophylactic antiemetic where appropriate. Laparoscopic gynaecological surgery has high incidence of PONV (54-92%). An audit on the practice of antiemetic use in diagnostic laparoscopic gynaecological surgery was done in the department of anaesthesia of Aga Khan University Hospital from 1st January to 30th June 2006. We included all the patients scheduled for this procedure lasting less than 90 minutes. Anaesthetist involved in the audit identified the patient falling into the predetermined risk factors. The following facts about antiemetic were noted; whether the patients received any antiemetics or not, if it was prophylactic or rescue, type, dose route and timing of antiemetic. Patients were rated for any signs of nausea and vomiting (retching) after extubation in the operating room by the anaesthetist and in the recovery room or surgical day care unit (SDC) by the nurse who was briefed about it and was cross checked by the anaesthetist involved in the audit. This was done for two hours postoperatively. Our results showed that only 75% of patients with risk factors received an antiemetic. The most commonly used antiemetic was Metoclopramide. Eight percent of the patients had vomiting and all of them had received a prophylactic antiemetic. They received the same rescue antiemetic. This audit recommended institutional guidelines for the management of PONV. These should be based on evidence obtained from the published peer-reviewed studies. These guidelines could

be communicated to health care workers involved in postoperative management of patients to help them achieve an optimal management strategy for this uncomfortable postoperative complication.

Introduction

Although the use of laparoscopic surgery for gynaecological procedures has decreased surgical morbidity and has become a popular procedure in an ambulatory setting¹, a high incidence of post operative nausea and vomiting (PONV) (56-93%) has been reported in these patients.² PONV remains a major cause of delayed discharge and patient dissatisfaction. In severe cases it can lead to unanticipated hospital admission³ increasing cost to patients, health care institution, and society.⁴

High rate of PONV in laparoscopy⁵ may be caused by the gas used to "inflate" the abdomen to create work place for the instruments. This puts pressure on the vagus nerve, which has a connection to the brain's nausea and vomiting centre. In addition to this, patients undergoing day case gynaecological laparoscopy have a number of other risk factors for PONV, as female gender, use of per-operative opioid and a journey home which is likely to lower the threshold to motion-induced emesis.⁶

PONV continues to be a common problem despite the replacement of older anaesthetic agents with short acting and less emetogenic agents in conjunction with surgical refinements. A lot has been said about PONV, the med-line data base includes 100 publications on PONV alone (4) but still the optimal approach to PONV remains obscure to many clinicians. Unfortunately many clinical

studies have used the surrogate end-points e.g. incidence and severity of PONV without providing data on the frequency of unanticipated admissions, post anaesthesia care unit time and patient satisfaction.⁴ Therefore it can be said that there is no agreed technique for minimizing PONV although some techniques are associated with a lower rate.^{7,8} According to consensus guidelines on managing PONV⁹, the following steps need to be undertaken; identification of the primary risk factors to reduce the baseline risk for PONV, identifying the optimal approach for prevention and therapy in various populations, determining the optimal choice and timing of antiemetic and identifying the most effective antiemetic monotherapy and combination therapy regimen. A multimodal antiemetic approach can considerably reduce the incidence of PONV in high risk patients and is associated with a high patient satisfaction as measured by willingness -to -pay method.⁴

We did an audit on the use of antiemetics in our department, on patients scheduled for diagnostic laparoscopic gynaecological surgery. Metoclopramide has been well known for almost 40 years and is economical. It has a potentially interesting molecule for the control of PONV because of its triple antiemetic action.

It has also been investigated that antiemetics from different pharmacologic drug groups should be used as a rescue treatment, if prophylaxis with one group fails to prevent PONV. We further wanted to see that whether the use of antiemetic among the anaesthetist in our department comply with the international recommendations or we need to develop guidelines based on the current evidence, which should be modified according to our circumstances and patient population.

Patients Method and Results

We included all the patients scheduled for the diagnostic laparoscopic gynecological surgery from 1st Jan to 30th June 2006. Anaesthetist involved in the audit identified the patients falling into the predetermined risk factors, which were previous history of PONV or motion sickness, level of anxiety according to the Amsterdam preoperative anxiety and information scale (APAIS), age < 25 years, history of migraine, obesity with BMI > 30, non-smoker, use of barbiturates induction agent, use of opioid analgesics, use of N2O and pain in the operating and recovery room. The following facts about antiemetic were noted: if it was prophylactic or rescue, its name, dose, route and timing (if it was given preoperatively in the ward, waiting area or during surgery in the operating room or postoperatively in the recovery room). Patients were rated for any signs of nausea and vomiting (retching)

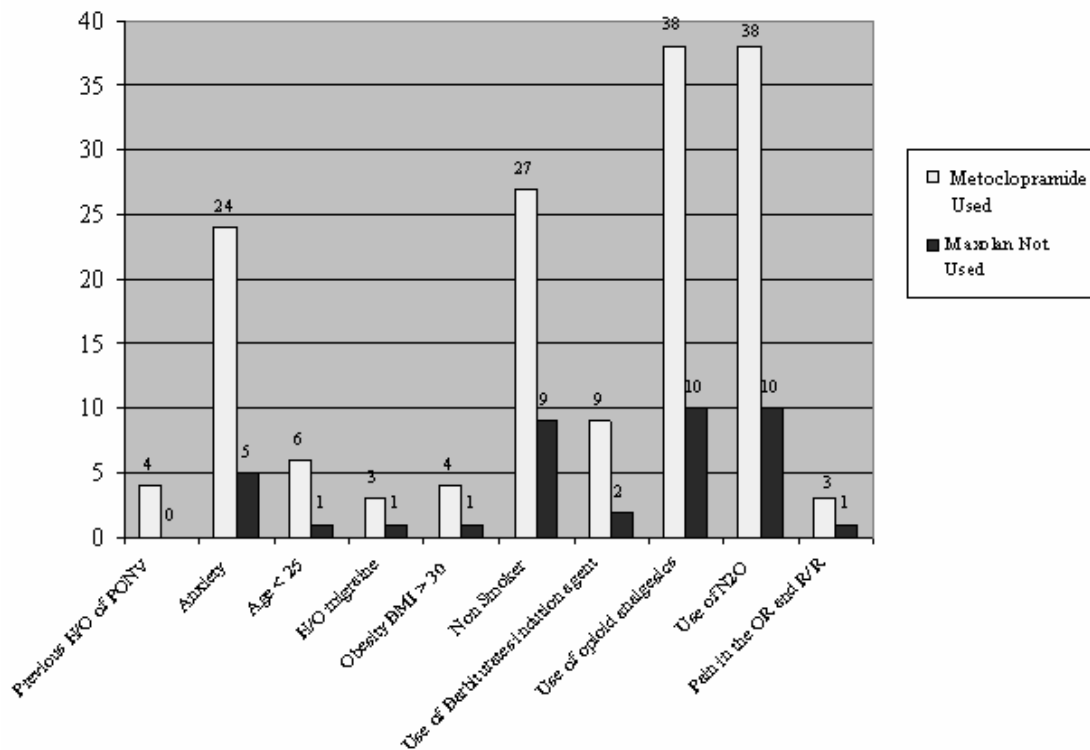
postoperatively in the operating room by anaesthetist and in the recovery or day care unit by the nurse who was briefed about it. It was cross checked by the anaesthetist involved in the audit. Monitoring was done for 2 hours in the recovery room or day care unit .The scoring system used for PONV was;

0 = None, 1 = mild nausea on inquiry, 2 = nausea without inquiry, 3 = vomiting occurred, 4 = severe or repeated vomiting.

Our results showed that forty eight patients had undergone gynaecological laparoscopic surgery in six months. Duration of surgery was between 30-90 minutes. No surgery finished before 30 minutes or extended beyond 90 minutes. All patients had two or more risk factors. Thirty six patients (75%) received prophylactic antiemetic in the operating room twenty to thirty minutes before extubation and twelve patients (25%) did not receive prophylactic antiemetic. Metoclopramide was the only antiemetic used in all cases. (Table and Graph) Four (8.3%) patients had vomiting (score3) and all of them had received prophylactic Metoclopramide for prophylaxis in the OR 20 - 30 minutes before extubation. One patient vomited in the operating room after extubation (surgical time was 78 minutes), one in the recovery room (RR) at 30 minutes (surgical time was 64 minutes) and two in the post surgical day care unit (SDC) at 90 minutes postoperatively.(surgical time 56 minutes and 75 minutes respectively). Two patients who vomited complained of accompanying pain and it was noted that co-analgesia like non steroidal anti-inflammatory drug was not used in them. The other two patients who vomited did not complain of pain and co analgesia Ketorolac 30mg intravenous was given to her in the operating room along with Metoclopramide 20-30 minutes before extubation. In all four patients Metoclopramide was used again as a rescue antiemetic.

Table. Practice of use of antiemetic in patients coming for Laparoscopic Gynaecological surgery.

Risk Factors	Metoclopramide Used	Metoclopramide Not Used
Previous H/O of PONV	4	0
Anxiety	24	5
Age < 25	6	1
H/O migraine	3	1
Obesity BMI > 30	4	1
Non Smoker	27	9
Use of Barbiturates induction agent	9	2
Use of opioid analgesics	38	10
Use of N2O	38	10
Pain in the OR and R/R	3	1



Graph. Practice of use of antiemetic in pts coming for Laparoscopic Gynaecological surgery.

Conclusion

We concluded that Metoclopramide 10 mg I/V was the only antiemetic used both for prophylaxis and rescue. It has been shown that Metoclopramide in this dose has no proven antiemetic effect for PONV. As for rescue treatment it is recommended to use antiemetics from different pharmacological agents, if prophylaxis with one agent has failed.

It is recommended that every institution should have guidelines regarding antiemetic therapy and prophylaxis based on peer-reviewed studies, and they should range from no prophylaxis for patients at low risk to multimodal antiemetic therapy for high risk patients. These guidelines should also contain recommendations regarding rescue therapy for break-through PONV with antiemetic of different pharmacological agents if prophylaxis with one agent has failed. This approach can help health care givers to individualize prophylaxis and rescue therapy for their patients to achieve an optimal management strategy for this uncomfortable postoperative complication.

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