Title: EFFICACY OF ANTIEMETIC PROPHYLAXIS IN PATIENTS RECEIVING GENERAL ANESTHESIA FOR OUTPATIENT SURGERY

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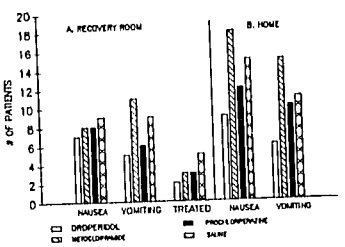
Introduction. The impact of the morbidity from nausea and vomiting in surgical outpatients is compounded by the need to ambulate prior to discharge. Other investigators have found that the duration of recovery room stay is extended significantly in outpatients who experience nausea and vomiting (1,2). In addition, agents used to control postoperative nausea and vomiting often produce mild, dose-dependent sedation, or hypotension, which may further delay recovery room discharge. Therefore, we undertook a prospective, double-blind randomized study of 3 common antiemetic agents; droperidol (D), prochlorperazine (P), and metoclopramide (M), to determine whether prophylactic administration would reduce the incidence of nausea and vomiting in the recovery room, and whether the use of these agents significantly altered duration of recovery room stay.

Methods. After receiving approval from the Committee on Studies involving Human Beings, we studied 100 ASA Physical Status I and II women, ages 25-39 yrs, scheduled for outpatient laparoscopic tubal ligation (LTL). Subjects were excluded from the study if there was any contraindication or allergy to any of the study drugs, if they were taking antihypertensive medication, had a BP >160/110 at the time of admission to the Day Surgery Unit (DSU), were pregnant, or had a body mass >125% of ideal. Patients were randomly assigned to one of the following groups: droperidol 0.02 mg/kg IV (D); metoclopramide 0.15 mg/kg IV (M); prochlorperazine 0.15 mg/kg IV (P); or saline placebo (S). Coded vials were prepared by the Hospital pharmacy to allow dosing on a ml/kg basis. Routine monitoring was established, followed by induction of anesthesia with atropine 0.5 mg, thiopental 6 mg/kg, fentanyl 2-4 µg/kg, vecuronium 0.1-0.15 ml/kg, and study drug 0.1 mg/kg body weight. Patients were ventilated with 70% N20 and 30% 02 and intubated. $ETCO_2$ was maintained between 35-40 mm Hg. If a patient's BP remained >160/110 after a total of 4 µg/kg fentanyl, isoflurane was administered. Following reversal of muscle relaxant with neostigmine 0.06 mg/kg and atropine 0.015 mg/kg, patients were extubated and taken to the recovery room (RR) for routine DSU care by nursing personnel who were unaware of the treatment regimen. Incidents of nausea and vomiting were noted, and if persistent, were treated with .05 ml/kg of study agent. Degree of comfort, drowsiness and nausea were recorded on analog scales by the nursing staff and separately by the patients at the time of discharge. All patients were called by the nursing staff within 18-48 hours of discharge to assess their experience after discharge.

Analysis of variance, Kruskal-Wallis tests and chi-square tests were used to determine the significance of differences among groups.

Results. There were no differences among the groups with regard to age, race, weight, PS, duration of anesthesia or duration of surgery 28-36% of patients in each group experienced at least 1 episode of nausea in the RR; 20-44% of patients in each group experienced at least 1 episode of vomiting (Figure 1a). There was no significant difference among the groups in the number of patients treated for persistent nausea or vomiting (power = 80% of no difference). 2D, 3M, 6P and 5S patients required isoflurane supplementation. RR time was 77-166 minutes with no differences among the groups. In general, patients felt minimally nauseated, relaxed (as opposed to anxious), and mildly to moderately sleepy. For each group, staff assessments were similar to patient responses. Data were obtained on 94 patients after discharge (24 D, 24 M, 23 P, 23 S) (Figure 1b). 38-75% of patients experienced nausea and 25-63% experienced vomiting after discharge, though there were no significant differences among the groups. (power = 80% of no difference)

Discussion. We found no significant differences in the incidence of nausea or vomiting, or in duration of RR stay among outpatients undergoing LTL who received D, M, P, or S as antiemetic prophylaxis. Others have found these agents to be effective, albeit under various clinical conditions (2,3,4,5). This suggests that the effectiveness of particular antiemetic regimens may be influenced by patient characteristics, anesthetic agent, surgical procedure and dose of the antiemetic agent. Further evaluation of prophylactic antiemetic therapies is needed to determine the outpatient settings in which their use is effective.



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