TITLE: Antiemetic Efficacy of Oral Metoclopramide Versus Intravenous Droperidol For Outpatient Laparoscopic Procedures

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Introduction. Nausea and vomiting are the commonest anesthesia related sideeffects after outpatient surgery. Droperidol is thought to be very effective in reducing the incidence but doses from 0.25 mg to 5 mg have been suggested. The higher doses are associated with sideeffects of their own[1]. Rao, et al.[2] claimed 100% success in preventing nausea and vomiting after pretreatment with oral metoclopramide (10 mg) but others[3] were unsuccessful to demonstrate any useful effect when this drug was given intravenously. We decided to examine the role of two doses of oral metoclopramide (M), three doses of intravenous droperidol (D) and a combination (M & D), in a double-blind prospective study for prophylaxis of nausea and vomiting and compare the results with a group receiving only placebo (P).

Methods. Approval by the institutional ethical committee and informed consent from the patients were obtained. 140 adult ASA I or II female patients scheduled for outpatient laparoscopic procedure participated in the study. Each patient was given one pill orally (either metoclopramide 5 or 10 mg or placebo) 30-60 minutes before induction of anesthesia and also an intravenous agent (either droperidol 5, 10 or 20 ug/kg or placebo) at the time of induction of anesthesia. The anesthetic technique was standard in all patients and consisted of fentanyl (1 ug/kg), thiamylal (4mg/kg) vecuronium (initial dose 0.1 mg/kg), nitrous oxide/oxygen (4:2) and enflurane. Postanesthetic care, observations and assessments were standardized. The incidence and severity of nausea and vomiting were recorded following direct questioning. Time to orientation, time to ambulation and time to discharge from the time of discontinuation of nitrous oxide were noted. Each patient was contacted by telephone 24 (and if necessary 48) hours later to inquire about the presence of nausea, vomiting and other sideeffects. Chi square test was applied to find any significant differences in incidence and severity of nausea and vomiting between the placebo and other groups.

Results. The seven groups (n=20 each) were comparable as regard to age, weight, height, and duration of anesthesia. The incidence of nausea and vomiting in the recovery room are shown in Table 1. Only D 10 and 20 ug/kg and the combination group (D & M) were significantly different than the P group in this respect. Neither of the M groups were different than P. Time to orientation, ambulation and time to discharge from the recovery room are shown in Table 2. Statistically, these times were not different (ANOVA) between the groups. None of the patients in D20 ug/kg group needed any antiemetic therapy either in the recovery room or at home. This was statistically different than P group. The discharge times in all patients were significantly prolonged when associated with nausea and vomiting (Table 3).

Discussion. Prevention of postoperative nausea and vomiting is of utmost importance in running an outpatient operating suite smoothly. We found a good dose response with three doses of droperidol, droperidol 20 ug/kg being the most efficacious. We could not reproduce Rao[2] et al's excellent result with oral metoclopramide in two doses. Droperiodol in the doses we have used did not increase postoperative drowsiness and discharge time although the presence of nausea and vomiting uniformly increased the discharge time.

References.

1. Abramowitz MD, Oh TH, Epstein BS, Ruttimann UE and Friendly DS: The antiemetic effect of droperidol following outpatient strabismus surgery in children. Anesthesiology, 59:579-583, 1983.
2. Rao TLK, Suseela M and El-Etr AA: Metoclopramide and cimetidine to reduce gastric juice pH and volume. Anesth Analg. 63:264, 1984.
3. Cohen SE, Woods WA and Wyner J: Antiemetic efficacy of droperidol and metoclopramide. Anesthesiology, 60:67-69, 1984.

TABLE 1
INCIDENCE OF NAUSEA ONLY OR NAUSEA AND VOMITING IN THE RECOVERY ROOM (%)

Group	None	Nausea Only	Nausea & Vomiting
M 5 mg + Placebo	45	30	25
M 10 mg + Placebo	55	25	20
Placebo + D 5 ug/kg	60	20	20
Placebo + D 10 ug/kg*	75	20	5
Placebo + D 20 ug/kg*	80	10	10
Placebo + Placebo	35	25	40
M 10 mg + D 10 ug/kg*	75	20	5

*Chi square test $p \leq 0.05$
Placebo + Placebo significantly different than Placebo + D 10 ug/kg: Placebo + D 20 ug/kg and M 10 mg + D 10 ug/kg

TABLE 2
ORIENTATION, AMBULATION, AND DISCHARGE TIME
MINUTES (Mean ± S.D.)

Group	Orientation	Ambulation	Discharge
M 5 mg + P	16.7 ± 6.50	128.5 ± 35.88	169.5 ± 60.82
M 10 mg + P	17.2 ± 5.00	124.5 ± 39.00	167.3 ± 62.86
P + D 5 ug/kg	18.3 ± 5.20	146.5 ± 42.50	185.3 ± 37.01
P + D 10 ug/kg	18.7 ± 6.95	149.8 ± 55.12	189.8 ± 73.55
P + D 20 ug/kg	17.0 ± 6.96	142.3 ± 45.52	179.5 ± 43.04
P + P	15.3 ± 5.25	150.3 ± 48.44	202.0 ± 68.72
M10 mg + D10 ug/kg	17.9 ± 5.74	134.8 ± 38.64	197.0 ± 83.45

ANOVA NO SIGNIFICANT DIFFERENCE BETWEEN GROUPS

TABLE 3
DISCHARGE TIMES IN ALL CASES WITH OR WITHOUT NAUSEA AND VOMITING
Minutes
(Mean ± S D)

Symptoms	N	Discharge Time
None	85	165.9 ± 47.02
Nausea Only	30	196.8 ± 54.86
Nausea and Vomiting	25	231.8 ± 88.82