TITLE: ANESTHETIC OUTCOME AFTER OUTPATIENT LAPAROSCOPY: Enflurane Versus Isoflurane With Fentanyl and Droperidol

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A recent study reported no difference between enflurane and isoflurane in either the quality or speed of recovery after outpatient laparoscopy(1). However, these investigators not only omitted premedication, but also prophylactic antiemetics and intraoperative narcotics from their protocol. We compared two anesthetic techniques based on equipotent concentrations of either enflurane or isoflurane along with standard doses of a short acting narcotic (fentanyl) and a common antiemetic (droperidol) for outpatient laparoscopy.

METHODS: The Institutional Ethical Committee approved the study and each patient gave written informed consent. Thirty-six adults, ASA physical class 1 or 2, scheduled for outpatient laparoscopy were studied. Stratified into smokers and non-smokers, patients were randomly allocated to receive equi-MAC decreasing concentrations of either enflurane or isoflurane and nitrous oxide for maintenance of anesthesia. Anesthetic technique was standardized in the two groups. Each patient was pretreated with droperidol 20 ug/kg IV and fentanyl 1.0 ug/kg IV just prior to induction of anesthesia. A blinded observer recorded both the quality of recovery (e.g. coughing, secretions, laryngospasm, shivering, nausea, vomiting, etc) as well as the speed of recovery (e.g. alertness, time to ambulate, time to discharge, etc). All patients performed two psychomotor function tests, the Trieger dot test and P deletion test, both before and 2-3 times after the anesthetic. Results from the two groups were statistically analyzed using ANOVA or Chi-Square analysis as appropriate.

RESULTS: The two groups were comparable in demographic variables. The important results are shown in Table 1. There are no differences between the two groups in any of the variables.

DISCUSSION: The use of intraoperative narcotics and antiemetics did not allow any subtle differences between enflurane and isoflurane to be detected in either the quality or speed of recovery. In light of these results, the indiscriminate use of isoflurane in outpatient anesthesia may not be justified. Further, the incidence of "minor" sequelae after outpatient anesthesia remains unacceptably high in both groups.

REFERENCES: Pandit SK: Anes Analg (Suppl), 70: S 293, 1990.

TABLE 1 - Variables and Results

| Variables | Enflurane (N=18) | Isoflurane (N=18) |
|---|---|---|
| Smoker/nonsmoker | 9/9 | 8/10 |
| Coughing (any) | 10 | 10 |
| Laryngospasm (any) | 1 | 2 |
| Orientation time (mins) | 9.0 ± 3.7 | 10.3 ± 6.0 |
| Shivering (>2 mins) | 11 | 11 |
| I.V. narcotic use, RR | 11 | 8 |
| Nausea/vomiting, RR | 1/0 | 4/2 |
| Time to discharge (mins) | 183 ± 51.1 | 177 ± 38.3 |
| Nausea/vomiting 24 hrs | 6/2 | 8/2 |
| Muscle ache any 24 hrs | 4 | 2 |
| Sore throat any, 24 hrs | 14 | 13 |
| Shoulder ache any 24 hrs | 13 | 14 |

No significant differences between the two groups.

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TITLE: Ondansetron Decreases Emetic Symptoms Following Outpatient Laparoscopy

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INTRODUCTION: The objective of this double-blind trial was to determine the efficacy and safety of ondansetron (GR38032F, Glaxo) for the prevention of postoperative nausea and vomiting. This was a phase II study designed for patients undergoing laparoscopic procedures in 3 Ambulatory Surgical Centers.

METHODS: Following IRB approval and informed consent, 179 female patients, ASA I-II, were enrolled. All patients had similar type of general endotracheal anesthesia, including thiopenthal, isoflurane, $N_2O$-$O_2$ with muscle relaxants and fentanyl, as needed. Patients were randomized to receive either ondansetron 8mg, or placebo, IV, immediately before the induction of anesthesia. Patients were monitored continually for at least 2 hr after entry to the post anesthesia care unit (PACU). Evaluations during the initial 2 hr in PACU included: 1.Emetic episodes, 2.Severity & duration of nausea, 3. Adverse events, 4. Amount of medication taken, 5. Vital signs, 6.Collection of laboratory safety data(CBC, SMA22). Patients kept a diary at home to collect information on #1 - #4 (see above) for 22 hours. Baseline preoperative laboratory safety data were obtained and repeated after 2 hr in PACU and 5 - 14 days postoperatively.

RESULTS: Results were compared by using Mantel-Haenszel and Wilcoxon rank sum tests; $P<0.05$ considered significant. In PACU 76% of the ondansetron group experienced no emetic symptoms compared to 58% for the placebo group (Table 1). At home 69% of the ondansetron group were free of emetic symptoms compared to 49% for the placebo group. No significant changes were noted in clinical laboratory tests and no significant differences in adverse events were reported between groups.

DISCUSSION: Ondansetron 8 mg IV, prior to induction did not affect vital signs or postoperative clinical laboratory test results. Ondansetron significantly reduced postprocedure emetic symptoms compared to a placebo treated group.

TABLE I. No Emetic Symptoms

| | Ondansetron(n=88) | Placebo(n=91) |
|---|---|---|
| 2 hr.PACU | 68/89 (76%) | 53/91 (58%)* |
| Home | 61/89 (69%) | 45/91 (49%)* |

* $p < 0.01$