PILOT: RCT OF CHLORPROMAZINE FOR POSTOPERATIVE NAUSEA AND VOMITING

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INTRODUCTION: Chlorpromazine, the only drug that has activity at all four nausea and vomiting primary receptor sites^{1,2}, (acetylcholine, dopamine, histamine, and serotonin), is used extensively in cancer chemotherapy^{3,4}, but has been studied for postoperative nausea and vomiting (PONV) only once^{5,6}, in 1963. A fixed (large) dose of 50mg was administered intramuscularly (IM) to patients having minor gynecologic surgery. The study was stopped after 29 subjects because of hypotension, a recognised pharmacologic effect, now known to be caused by CPZ-induced vasodilation. In 1963, IV volume loading was rarely done for minor surgery; pre-medication was given IM on the ward, and induction anesthetic was administered directly into a vein without a running IV. A recent trial of IV chlorpromazine for migraine found 0.1mg/kg safe and effective⁷.

METHODS A double-blind randomised controlled trial in laparoscopic surgery. Null hypothesis: Chlorpromazine 10mg IV at anesthetic induction is not different from saline in prevention of PONV or in side effects. With University Research Ethics Board approval, after a power study, 60 subjects were recruited. PONV was assessed in Post-anesthetic Care Unit (PACU) and 24 hours later by incidence and verbal rating scale severity.

RESULTS Groups: not different for age, sex, height, weight, type of surgery. One drug-group subject was lost to follow-up. **Efficacy:** not significantly different from placebo for incidence or severity of PONV in PACU or next day. Episodes of vomiting: drug: 10/29; placebo 19/31. **Safety:** one subject in the drug group was sleepier than expected in RR. One had lower blood pressure than anticipated, after anesthesia induction, which was easily corrected. It is known that phenothiazines may prolong the QT interval. There was no difference of electrocardiogram QT or corrected QT interval between groups.

DISCUSSION A small dose of chlorpromazine was chosen for this study to err on the side of safety. Nearly twice as many subjects vomited in the placebo group as in the treated group. A larger dose or larger study may show significant benefits. Chlorpromazine is inexpensive and appears to be safe in the context of anesthesia practice.

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