Correspondence

Anaesthesia and emesis. Clinical usefulness of metoclopramide

To the Editor:

In the otherwise excellent review article "Anaesthesia and emesis, II" by Palazzo and Strunin,¹ the section devoted to metoclopramide is perhaps open to comment.

Reference is made to Davies and Howells' paper on the ability of metoclopramide to empty the stomach following injury,² which did not differentiate between liquid and solid gastric content. Hancock³ showed no difference in gastric emptying times in normal subjects following a solid meal when they were given a placebo or metoclopramide. It is suggested that this is an important difference which should be taken into consideration by the anaesthetist who is faced with a patient with a full stomach. Liquid gastric content may be reduced but solid contents will not.

The authors claim that metoclopramide and domperidone have not proven to be effective in either prophylaxis or treatment of postoperative vomiting and refer, among others, to the work of Clark and Storrs⁴ who in fact showed a significant reduction ($p = 0.05$) in postoperative vomiting after metoclopramide 20 mg.

A number of investigators have in fact found metoclopramide to be effective in the treatment and prophylaxis of postoperative vomiting.⁵⁻⁹

There are two properties of metoclopramide which the authors did not discuss. Firstly the more potent action in males compared to females. This was published as raw data by Kreel and Howells¹⁰ but not referred to in the paper and also by Diamond and Keeri-Szanto¹¹ who showed a significant reduction in postoperative vomiting in males by prophylaxis with metoclopramide (p much less than 0.001) as compared to females in a similar surgical group (N.S.).

Secondly, is the question of the freedom from side effects of this drug, which has best been illustrated by Gralla *et al.*¹² who gave metoclopramide 120 mg at two hourly intervals over a ten hour period to patients undergoing Cisplatin chemotherapy. This resulted in a significant reduction in emesis when compared to placebo administration ($p = 0.001$) or to prochlorperazine administration ($p = 0.005$). The follow-up of 450 patients undergoing this regimen revealed acute dystonic reactions in only 3.1 per cent of the patients.¹³

It would appear that the recommendations of the authors of the review article to use another agent should a single dose of metoclopramide not prove effective is not borne out in the literature.

The Sloan-Kettering Experience suggests strongly that over a short period of time, high doses of metoclopramide are well tolerated, but the long-term effect of therapy may lead to extra pyramidal side effects.

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REPLY

Thank you for giving us the opportunity to reply to the points raised by Dr. Diamond concerning our review article *Anaesthesia and emesis*, II.

Dr. Diamond is correct to point out that the action of metoclopramide on stomach emptying can be quite variable and it is seemingly ineffective following a solid meal.¹ However, for the purposes of emergency anaesthesia the matter becomes academic. As our article suggests, we prefer the popular and efficient Sellick manoeuvre for the prevention of aspiration and would not rely on metoclopramide to empty the stomach.

Attention is drawn to our appraisal of the efficacy of metoclopramide for prevention and treatment of postoperative emesis. We referred to the work of Clark and Storrs which demonstrated that 20 mg of metoclopramide administered at the end of surgery was efficient in decreasing postoperative emesis.² This work was supported by Lind and Breivik who found that in patients who had not received meperidine (the only comparable patients in their subgroups), 10 mg of metoclopramide given IM at the end of surgery reduced retching and vomiting better than did perphenazine. Note that nausea was not recorded in this subgroup of their study.³ Handley and Tornetta in independent studies also found metoclopramide useful when given at the end of surgery.^{4,5} However, Diamond's own work demonstrated that 20 mg metoclopramide given orally two hours preoperatively with the premedication to 51 patients undergoing hysterectomy had no significant effect. Also in the same study, females undergoing non-abdominal

surgery were also not helped by preoperative metoclopramide.⁶ These data confirmed work by Assaf et al. who showed that preoperative I.M. metoclopramide did not significantly reduce total emetic sequelae in the 1-6-hour period when the premedication included morphine.⁷ Ellis and Shaw in separate studies also had poor results with preoperative metoclopramide.^{8,9}

We therefore think it reasonable to state "prophylaxis with metoclopramide appears to only have been effective when the drug was administered at the end of the operation." Evidence suggests that metoclopramide is a poor drug for the treatment of emesis.¹⁰ It follows from the above that if metoclopramide has been given for prophylaxis against emesis and has failed, it would be logical to administer a drug with proven efficacy for the treatment of the now new problem of emesis.

We confess to omitting reference to the poorer effect of metoclopramide in women than among men. This may explain some of the variable results in clinical trials and would be a good reason not to use metoclopramide.

We agree with Dr. Diamond that side effects from the use of metoclopramide are low. We stated: "all studies report a low incidence of side effects with both domperidone and metoclopramide." We have no experience in the use of high dose metoclopramide, but should point out that the incidence of side effects is considerably higher in the under 30 age group, 27.3 per cent according to Kris et al.¹¹ Further we would suggest that cancer therapy patients may behave differently to postanaesthetic patients and comparison may not be appropriate.

There is no single obvious solution to postoperative emesis. Its multifactorial aetiology makes it almost impossible to conduct completely controlled clinical trials. It is not surprising that anaesthetists working under diverse conditions achieve similar results with their differing but preferred methods and drugs. If Dr. Diamond achieves good results with his techniques and metoclopramide we hope our article has not discouraged him.

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