

LETTERS TO THE EDITOR

Helicobacter pylori eradication, duodenal ulcer healing, and gastric secretory state

EDITOR,—There is little doubt that *H pylori* is an important factor in the pathogenesis of duodenal ulcer disease. The mechanism for this is probably multifactorial, and may include changes in gastric secretory state consequent upon *H pylori* associated hypergastrinaemia. The study by El-Omar *et al* (*Gut* 1993; 34: 1060–5) attempts to examine the effect of *H pylori* eradication on acid secretory state in 'patients with duodenal ulcer'. The authors show a significant fall in both basal and gastrin mediated acid output after *H pylori* eradication, and infer that this fall is, simply, because of elimination of the *H pylori* infection.

These results seem to be at variance with two previous studies carried out by the same group.^{1,2} No differences in basal and pentagastrin stimulated acid output after *H pylori* eradication were noted in the first, while parietal cell sensitivity to pentagastrin remained unchanged after eradication in the second. Both studies, importantly, were carried out in patients with inactive duodenal ulcer disease. The findings in the study by El-Omar *et al*, however, are in keeping with those reported by Moss and Calam³ in a group of patients with active duodenal ulcer studied before and after *H pylori* eradication and successful ulcer healing. One can but speculate as to whether the patients studied by El-Omar *et al* had active ulceration on entry and, if so, whether ulcer healing was achieved after three weeks' bismuth containing triple therapy. Or was a mixed group of both active and healed duodenal ulcer subjects entered into their study?

The belief that *H pylori* eradication is strategic in the reduction of gastric secretion seems to have been so seductive that El-Omar *et al* have chosen to overlook the reported effect of duodenal ulcer healing in itself on gastric secretory states. There is good evidence that basal,^{4,6} nocturnal,⁷ and stimulated acid secretion,⁸ fall significantly after duodenal ulcer healing with sucralfate, the mucosal protective agent with but a modest suppressive effect on *H pylori*. There are only scant data on the possible effect of duodenal ulcer healing by colloidal bismuth on gastric secretion, but one small study⁹ showed a numerical but insignificant fall in acid secretion and a significant reduction in basal and pentagastrin stimulated pepsin output.

We believe that any conclusion regarding the effect of *H pylori* eradication in itself on acid and pepsin secretion must await the outcome of suitably designed studies that discriminate between the effects of healing on the one hand, and eradication on the other. At the very least, readers should be unequivocally informed of the ulcer activity state in any study considering this controversial issue.

J A LOUW
I N MARKS
Gastrointestinal Clinic,
Groote Schuur Hospital,
Observatory, Cape Town 7925,
South Africa

- 1 Fullarton GM, Chittajallu R, Mc Coll KEL. Effect of eradication of *H pylori* on acid secretion in duodenal ulcer patients. *Gastroenterology* 1991; 100(suppl): A68.
- 2 Chittajallu RS, Howie CA, Mc Coll KEL. Effect of *H pylori* on parietal cell sensitivity to pentagastrin in duodenal ulcer subjects. *Scand J Gastroenterol* 1992; 27: 857–62.
- 3 Moss F, Calam J. Acid secretion and sensitivity to gastrin in patients with duodenal ulcer: effect of eradication of *Helicobacter pylori*. *Gut* 1993; 34: 888–92.
- 4 Marks IN, Young GO, Tigler-Wybrandi NA, Bridger SA, Newton KA. Acid secretory response and parietal cell sensitivity in patients with duodenal ulcer before and after treatment with sucralfate or ranitidine. *Am J Med* 1989; 86 (suppl 6A): 145–7.
- 5 Johnston DA, Marks IN. Short-term relapse rates after duodenal ulcer healing. *South African Journal of Continuing Medical Education* 1990; 8: 999–1002.
- 6 Moss SF, Thomas DM, Ayesin K, Levi S, Calam J. Sucralfate diminishes basal acid output without affecting gastrin, *H pylori* or gastritis in duodenal ulcer patients. *Aliment Pharmacol Ther* 1992; 6: 251–8.
- 7 Kummer AF, Johnston DA, Marks IN, Young GO, Tigler-Wybrandi NA, Bridger SA. Changes in nocturnal and peak acid outputs after duodenal ulcer healing with sucralfate or ranitidine. *Gut* 1992; 33: 175–8.
- 8 Johnston DA, Marks IN, Young GO, Tigler-Wybrandi NA, Bridger SA. Duodenal ulcer healing and acid secretory responses to modified sham feeding and pentagastrin stimulation. *Aliment Pharmacol Ther* 1990; 4: 403–10.
- 9 Baron JH, Barr J, Batlen J, Sidebotham R, Spencer J. Acid, pepsin and mucus secretion in patients with gastric and duodenal ulcer before and after colloidal bismuth subcitrate (Ne-Nol). *Gut* 1986; 27: 486–90.

Reply

EDITOR,—We are grateful for the opportunity to respond to the points raised by Dr Louw and Professor Marks. They wonder if the changes in acid secretion might be secondary to some effect of ulcer healing rather than to the eradication of *H pylori* infection. We can reassure them that the changes could not be explained by ulcer healing as none of the patients had active ulceration when recruited into the study. All of them had an endoscopy before entering the study and any patient with an active ulcer had treatment with an H₂ antagonist for six weeks and then repeat endoscopy performed to ensure healing before the start of the study. We apologise for not mentioning this point in the paper.

Further evidence that the fall in acid secretion is not a consequence of ulcer healing is our more recent finding that the increased acid output noted in the non-ulcer subjects also resolves after eradication of the *H pylori* infection.¹

We should also like the opportunity to emphasise that our present findings of appreciable changes in gastrin releasing peptide (GRP) stimulated acid secretion are in no way inconsistent with our earlier studies in which we noted no change in pentagastrin stimulated acid secretion at one month after eradication of *H pylori* in duodenal ulcer patients. GRP stimulated acid secretion differs from maximal acid output to pentagastrin in the following ways: (1) GRP stimulated acid secretion provides an assessment of the combined function response of the antrum and body of the stomach, whereas pentagastrin only assesses body function; (2) At the doses of GRP that we use, we can assess acid secretion in response to physiological concentrations of gastrin that contrasts with the supraphysiological concentrations during assessment of maximal acid output to pentagastrin; (3) GRP activates not only the stimulatory pathway of acid secretion mediated by gastrin but also the inhibitory

pathways mediated by other hormones such as cholecystokinin and somatostatin.

For these three reasons, GRP stimulated acid secretion provides a far more comprehensive assessment of gastric secretion and is thus more able to identify defects in its regulation.

E EL-OMAR
KEL MCCOLL
University Department of
Medicine and Therapeutics,
Western Infirmary,
Glasgow G11 6NT

- 1 El Omar E, Penman I, Dorrian CA, Ardill JES, McColl KEL. Eradicating *H pylori* lowers gastrin-mediated acid secretion by 70% in DU patients and by 50% in healthy volunteers. *Gastroenterology* 1983; 104 (suppl 4): A75.

Food intolerance and Crohn's disease

EDITOR,—We were delighted to read the paper from Northwick Park by Pearson *et al* (*Gut* 1993; 34: 783–7) confirming our previous reports of food intolerance in Crohn's disease. It is possible, however, that the way this study was conducted has led to an underestimation of the importance of this phenomenon.

The dietary studies did not follow the methods that we have shown to be successful. Patients were given elemental diet for four to eight weeks. In our view this is far too long. Food reintroductions should start as soon as the patient is in clinical remission, which occurs on average after nine days.¹ If elemental diet is continued for longer periods, it is more difficult to show food intolerances as food challenges must be extended for several days to provoke symptoms.

This leads to mistakes in the detection of food intolerances. We have consistently reported that wheat, milk, and yeast are the foods most likely to cause problems. In a recent survey of 114 patients successfully treated in Cambridge by diet, 39 (34%) were upset by wheat, 22 (19%) by yeast, and 35 (31%) by milk. It is therefore very surprising that among the 42 patients studied at Northwick Park, only five were upset by milk, two by wheat, and none at all by yeast. We therefore believe that the dietary studies were not carried out correctly.

We were also concerned by the claim that there was no significant difference in the duration of remission after elemental diet between patients who did identify food sensitivities and those who did not. The Northwick Park study was not a controlled trial and no evidence is presented to suggest that the Crohn's disease in those patients with food intolerances was similar in extent and severity to those without. These results contrast sharply with the much larger study that we have recently concluded.² One hundred and thirty six patients were treated with elemental diet for up to two weeks and 78 achieved remission. These were randomised to our standard food testing programme or to oral corticosteroids. Patients receiving steroids were advised on healthy eating and diet patients received identical placebo tablets. The median survival in the diet group was 12 months compared with three in the steroid group and after two years the overall relapse rate was 59% in the diet group compared with 82% of patients receiving steroids ($p < 0.05$).

Food intolerance is an important factor in the pathophysiology of Crohn's disease. The management of these patients by diet is not easy, demanding determination from the patients and skill and experience from their medical and dietetic advisors. Nevertheless,