H PYLORI ERADICATION AND GORD: VIEWPOINT 1

Effect of *Helicobacter pylori* eradication on the treatment of gastro-oesophageal reflux disease

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The important issue of whether *Helicobacter pylori* eradication leads to increased reflux has been the subject of many apparently contradictory publications, but when we asked two leading authorities to give us their views, there turned out to be considerable consensus, as you can read below.

Although the prevalence of *Helicobacter pylori* is steadily decreasing in industrialised nations, over the same time gastro-oesophageal reflux disease (GORD) and its complications have increased in Western countries.[1] GORD affects 25–40% of the population[2] and Barrett's oesophagus and oesophageal adenocarcinoma are being recognised at an increasingly alarming rate.[1] This has led to the suggestion that *H pylori* is the possible aetiological factor for this changing epidemiology.

Most studies find no evidence that *H pylori* infection causes GORD.[3] Rather, some but not all studies have found a lower prevalence of *H pylori* infection in patients with reflux symptoms or oesophagitis, suggesting a possible protective effect of this bacteria.[4–7] A recent systematic review of the literature suggests that geography is an important factor complicating this relationship. Raghunath and colleagues[8] evaluated 20 studies and found that the pooled estimate of the odds ratio for the prevalence of *H pylori* in patients with GORD was 0.60 (95% confidence intervals (CI) 0.47–0.78). The evidence for this protective relationship in Europe was equivocal, but consistent evidence was found for a lower prevalence of *H pylori* among both North American (odds ratio 0.70 (95% CI 0.55–0.90)) and Far Eastern (odds ratio 0.24 (95% CI 0.19–0.32)) patients with GORD.

H pylori infection can have a variable effect on acid secretion, depending on the type and distribution of gastritis.[9] Non-atrophic predominantly antral inflammation results in hypergastrinaemia and acid hypersecretion; this pattern is prevalent in patients with duodenal ulcer disease. In contrast, patients with corpus predominant gastritis have decreased acid secretion, which is the predominant pattern in patients with gastric ulcers or gastric cancer. Eradication of the organism is associated with correction of these abnormalities in both types of gastritis. However, the majority of *H pylori* infected patients without disease have a mixed pattern of gastritis, whereby the elevated gastrin resulting from antral inflammation fails to cause gastric acid secretion because of corpus inflammation.

The effect of *H pylori* eradication on 24 hour oesophageal acid exposure is variable. Two studies[10 11] in patients with *H pylori* gastritis found no changes in 24 hour oesophageal acid exposure before and 12 weeks after eradication therapy. On the other hand, Feldman and colleagues[12] found that three of nine asymptomatic gastritis patients developed pathological acid reflux after *H pylori* eradication. In another study, Wu and colleagues[13] investigated oesophageal acid exposure in 14 patients with GORD and *H pylori* infection, who were randomised to receive eradication therapy, and 11 patients randomised to omeprazole alone. There was no difference in per cent time to oesophageal pH <4 before and 26 weeks after treatment between the groups. However, the per cent time pH <2 ($p = 0.01$) and pH <3 ($p = 0.02$) was significantly increased in patients receiving *H pylori* eradication treatment. A small number of patients developed worsening oesophagitis ($n = 3$). Conclusions from these studies are difficult because sample sizes were small, the type and extent of gastritis was not assessed, and the prevalence and severity of GORD were rarely defined.

H pylori infection may affect the action of proton pump inhibitors (PPI). Intragastric pH is consistently higher during PPI treatment in *H pylori* infected patients than in either uninfected or eradicated patients.[14] Is this clinically important as we treat our GORD patients with or without *H pylori* infection? Holtzmann and colleagues[15] showed that patients with *H pylori* infection treated with pantoprazole had better symptom relief and healing of oesophagitis at four and eight weeks than non-infected reflux patients. The effects were much less pronounced at eight weeks than at four weeks. However, four other studies found that *H pylori* status did not adversely effect treatment results with PPI. Carlsson and colleagues[16] studied 1350 patients with GORD treated with omeprazole and found that symptom relief and healing rates were similar in patients with *H pylori* infection and those who were not infected. Vakil and colleagues[17] likewise showed that *H pylori* infection did not affect healing rates in erosive oesophagitis treated with esomeprazole. Peters and colleagues[18] treated 26 patients with Barrett's oeso-

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Abbreviations: GORD, gastro-oesophageal reflux disease; PPI, proton pump inhibitors

Summary

- The prevalence of *H pylori* infection is significantly lower in patients with compared with those without gastro-oesophageal reflux disease.
- The mechanism of this protection is decreased acid secretion from corpus gastritis: this is reversible after *H pylori* eradication.
- After *H pylori* eradication, the effects on distal oesophageal acid exposure are unpredictable.
- The vast majority of GORD treatment trials with proton pump inhibitors find that patients with and without *H pylori* infection show no differences in symptom relief, healing of acute oesophagitis, or efficacy of maintenance regimens.

phagus (14 *H pylori* negative, 12 *H pylori* positive) with omeprazole 40 mg twice daily. Omeprazole resulted in a decrease in 24 acid reflux values from 23.4% (7.9–39.3) to 0% (0.0–2.9) in *H pylori* negative and from 17.3% (8.9–38.8) to 0.1% (0.0–1.7) in *H pylori* positive patients. Symptoms were also equally controlled in each group. Finally, Schenk and colleagues[19] showed that the dose of omeprazole required for maintenance after healing of erosive oesophagitis was similar in patients with and without *H pylori* infection.

In summary, most treatment trials with PPI do not find that *H pylori* status adversely affects symptom relief, healing of acute oesophagitis, or maintenance treatment of erosive oesophagitis. Therefore, clinicians should continue to eradicate *H pylori* infection when found and not be concerned about aggravating possible coexisting reflux disease which should easily respond to PPI therapy.

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