

## H PYLORI ERADICATION AND GORD: VIEWPOINT 2

# *Helicobacter pylori* eradication does not exacerbate gastro-oesophageal reflux disease

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The reciprocal influence of *Helicobacter pylori* infection and gastro-oesophageal reflux disease (GORD), if both conditions occur concomitantly, has been an issue of debate for many years. The critical question is whether eradication of *H pylori* has a more beneficial, harmful, or simply no effect on the course of GORD.

Most of the pathologies of the upper digestive system are either related to *Helicobacter pylori* infection or gastro-oesophageal reflux disease (GORD). The reciprocal influence if both conditions occur concomitantly has been an issue of debate for many years.<sup>1,2</sup> Presentation of data with the aim of solving this intriguing issue has been considerable but the results are conflicting and so are the interpretations.<sup>3-5</sup> The relationship between *H pylori* and GORD has been professed from virtually none to a protective role of *H pylori* against GORD development. The fact is that both conditions coexist in a considerable number of patients and the association varies according to the background prevalence of the infection in the populations studied. The average reported prevalence of *H pylori* infection in patients with GORD from a world perspective is 38%.<sup>6</sup>

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### CONSIDERATIONS ON HOW H PYLORI COULD EXACERBATE GORD

The common playground on which *H pylori* and GORD establish their relationship is acid secretion. *H pylori* has an important role in the regulation of acid secretion, which is variable and depends on the phenotypic expression of gastritis.

GORD results from abnormal oesophageal acid exposure and therefore acid secretion is an essential prerequisite. In the presence of corpus predominant or atrophic pangastritis, acid production is decreased, and in the absence of a critical amount of acid output the oesophagus is less likely exposed to acid reflux. Several studies reported a lower prevalence of erosive GORD in the presence of atrophic gastritis,<sup>7,8</sup> and a protective role of the corpus predominant gastritis has been emphasised.<sup>9</sup> In a further retrospective study, the risk of severe GORD was found to be decreased in patients infected with *CagA* carrying strains while the overall prevalence of *H pylori* in this study was not different between patients with GORD and controls.<sup>10</sup>

According to these studies, the premise for inducing or aggravating GORD is the presence of a gastritis phenotype with low acid output that is postulated to be reversed by *H pylori* eradication.

There is one study that found a marked increase in acid secretion following *H pylori* eradication in a small subset of patients who also developed erosive GORD.<sup>11</sup> However, the condition necessary for this to occur is most likely pre-existing impairment of the gastro-oesophageal reflux barrier, as shown by other authors.<sup>12</sup> These studies comprised a very selected group of patients and did not indicate how often and to what extent atrophic changes in the gastric mucosa were restored to the point of reassuming a normal (or even increased?) acid secretory function. In contrast with the findings from Japan,<sup>11,12</sup> studies from Europe did not find a different pattern in 24 hour pH metry among *H pylori* positive and negative patients with GORD, and *H pylori* eradication was not found to increase the reflux parameters.<sup>13-16</sup>

We have to state that all of the studies in this area have important limitations as they are either retrospective, lacking an adequate control group, or have inadequate assessment of the gastritis pattern.

### WHAT ARE THE CLINICAL FACTS ON H PYLORI ERADICATION AND EVOLUTION OF GORD?

Although the widely propagated misconception that *H pylori* is a major risk factor for the development of GORD can be rejected, the question of whether GORD can be aggravated following *H pylori* eradication deserves more consideration.<sup>17-21</sup>

There are two aspects we should consider: (a) the enhanced efficacy of proton pump inhibitors (PPI) in the presence of *H pylori*; and (b) trials in patients with GORD, who underwent *H pylori* eradication therapy.

The enhanced efficacy of acid suppressant agents has extensively been shown in 24 hour pH metry studies in asymptomatic individuals and patients with duodenal ulcer disease.<sup>22-24</sup> This effect has also been found to translate into clinical reality as healing of severe forms of erosive GORD during PPI therapy was slightly, although significantly, better in *H pylori* infected patients.<sup>25</sup>

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

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## Summary

- In the majority of patients, *H pylori* eradication does not induce GORD.
- Approximately one third of patients with GORD are infected with *H pylori*—the prevalence varies little among groups with different severities of GORD.
- *H pylori* eradication does not aggravate the course of GORD.
- The effect of acid suppressants is increased in the presence of *H pylori*—but this has, if any, a marginal clinical effect. Long term clinical efficacy of PPI is not dependent on *H pylori* persistence.
- *H pylori* eradication is recommended in patients who are candidates for long term PPI treatment.

The clinical impact of the enhanced potency of PPI in the presence of *H pylori* is marginal as the majority of patients have mild to moderate severity of GORD and in these patients a difference in the efficacy of PPI is not detectable.<sup>26</sup> Moreover, a dose increase in PPI for adequate disease control on long term is rarely required.<sup>27</sup>

Clinical trials available to date do not support deterioration of GORD following *H pylori* eradication. In a prospective controlled trial, relapse of GORD occurred in 83% of all patients within one year of follow up, independent of whether they were cured of *H pylori*, had persistent *H pylori* infection, or were *H pylori* negative at study entry.<sup>28</sup> A benefit was reported in another study during a six month follow up in which patients with GORD and persistent *H pylori* infection relapsed earlier than patients in whom *H pylori* had been eradicated.<sup>29</sup>

This is not surprising as GORD in *H pylori* positives coexists normally with a gastritis pattern that is functionally linked to normal or increased acid secretion, similar to the condition of duodenal ulcer. If any change can be expected then it is a reversal to lower acid output following eradication, as shown for patients with duodenal ulcer and antrum predominant gastritis.<sup>30</sup>

“Watch the risk!” In a recent debate, the arguments of whether long term use of PPI in GORD may accelerate the development of atrophic changes in the presence of *H pylori* and thereby promote the gastritis phenotype related to gastric cancer have been solidly exchanged.<sup>31–32</sup> Why should we take the risk? There are more reasons that favour *H pylori* eradication to prevent possible long term complications.<sup>33</sup>

In summary, the relationship of *H pylori* to GORD appears sophisticated due to a complex interaction in which essentially *H pylori* modulates and GORD gets exposed to gastric acid. There are several nuances of this “affair” due to many variables interfering with both *H pylori* infection and GORD, and certainly complicated by studies with contrasting results.

Finally, *H pylori* eradication is not a relevant clinical risk in the development of GORD and definitely does not exacerbate pre-existing GORD.

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