Helicobacter pylori twenty years on...

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The year 2002 was the 20th anniversary of the discovery in Perth, Western Australia by Robin Warren and Barry Marshall of the gastric bacteria first known as *Campylobacter pyloridis*. As research into this intriguing bacteria progressed, it was found not to be a *Campylobacter* but rather the first of a new family of bacteria, which led to its name change to *Helicobacter pylori*. Twenty years later, basic and clinical scientists with an interest in *H pylori* infection gathered on the beautiful island of Maui for the 5th meeting in the series *Helicobacter pylori: Basic Mechanisms to Clinical Cure*.

Over this historic 20 year period, much has been learned about *H pylori* infection. The genome of the bacteria has been sequenced, offering novel approaches for future research into this organism and perhaps providing targets for treatment. At the more practical level, we have learned much about the epidemiology and behaviour of this infection in the community; that this is an infection occurring early in childhood, associated with poor socioeconomic status and, unless treated, is invariably lifelong (1). The consequences of this lifelong infection are determined by the pattern of gastritis associated with infection and acid secretory status of the host which is modulated by the bacteria colonizing in close apposition to surface epithelial cells of the stomach. When colonization is predominantly antral, the parietal cells of the acid secreting corpus are largely spared from inflammation and, under gastrin stimulation from the presence of the bacteria and bacterial products in the antrum, acid hypersecretion occurs. Duodenal ulcer is a likely outcome in this setting. When pangastritis occurs and inflammation involving the corpus acid secretion declines, gastritis worsens and the patient is at increased risk of gastric cancer (2).

The role of *H pylori* infection in increasing the risk of non-steroidal anti-inflammatory drug (NSAID)-related ulcer disease and bleeding from complicated ulcer disease is becoming more clear (3). The role of *H pylori* infection in dyspepsia has been controversial and there have been two schools of thought, with the European opinion (4) being in favour of a test and treat strategy based on a small benefit of about 9% and a number needed to treat of 15. The US opinion has been guarded, and a test and treat strategy is now seriously questioned as the first intervention (5). Here in Canada we have excellent data from our own studies, which have explored the role of test and treat in the primary care setting in patients with uninvestigated dyspepsia (6).

While clinical trials have shown high eradication rates with the currently advocated treatment regimens for the eradication of *H pylori* infection, there is increasing concern over antimicrobial resistance of this organism to the commonly used antibiotics. The last European *Helicobacter* Consensus Conference held in Maastricht recommended that the best proton pump inhibitor (PPI) triple therapy with which to start is a PPI plus clarithromycin and amoxicillin rather than the PPI with clarithromycin and metronidazole (7). This recommendation was based on the concern of using both of the most effective antibiotics in the first treatment, since any failure would be associated

with resistance to both antimicrobial agents. More recently, there has been a revival of interest in the use of a PPI combined with bismuth triple therapy, which is very effective and is valuable in patients who are resistant to clarithromycin. It is also remarkably effective in those patients who harbour metronidazole-resistant infections despite having metronidazole in the combination (8).

In this supplement, you will find a selection of clinical papers which were presented at *Helicobacter pylori: Basic Mechanisms to Clinical Cure* in Maui, November 2002. The full proceedings are published in book form and include papers on the new *Helicobacters* and their possible role in biliary tract disease and inflammatory bowel disease; further understanding of gastritis and its progression to atrophy and cancer; the role of ascorbate in gastric cancer and the new information on genetic polymorphisms and gastric cancer. Clinical issues include the role of *H pylori* and dyspepsia; eradication of the infection and the risk of gastroesophageal reflux disease; *H pylori* and NSAIDs; consideration of eradication of the infection before long term PPI treatment. There are also sections exploring differences and similarities between global, regional and national guidelines.

The papers reprinted here address several interesting aspects concerning gastric cancer, which remains one of our most important challenges for the future on a global basis. In addition, there are papers herein that address many of the questions asked by clinicians who manage this infection, such as treatment strategies, whether ulcer patients and dyspepsia patients should be treated differently, the implication of microbial resistance, re-infection rates, what constitutes treatment failure and, lastly, ethical issues in treating *H pylori* infection. It is our hope that you will find them useful as an update of information and also in your clinical practice.

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