

# Determination of *H. pylori*-related disease

A novel test panel enables a range of *H. pylori*-related diseases to be diagnosed.

Dr Osmo Suovaniemi, Biohit Oyj

Australian doctors Barry J Marshall and J Robin Warren isolated *Helicobacter pylori* in 1982; this bacterium lives protected from gastric acids on the mucous membrane of the stomach. Infection with *H. pylori* usually occurs in childhood – rarely in adulthood; the infection spreads orally (oral-oral transmission) plus via the contents of the stomach (for example, by vomiting) and possibly also via the faeces. If untreated, the infection lasts for a lifetime and causes inflammation of the stomach, otherwise known as gastritis. In fact, virtually all cases of gastritis are caused by *H. pylori* infection. In a small number of cases, gastritis may develop as a result of an autoimmune disease. Over half of the global population suffers from infection with *H. pylori* and related gastritis (around 3,000 million people). In around half of the infected cases, the gastritis develops over the years into atrophic gastritis – that is, inflammation and atrophy of the mucous membrane of the stomach.

The isolation of *H. pylori* changed our understanding of the causes of gastric cancer and peptic ulcer. Today, it is known that *H. pylori* infection and gastritis are nearly always related to gastric cancer and peptic ulcer. Prior to 1982 and even for a long time after that – it was believed that peptic ulcer developed primarily as a result of hypersecretion of acid, stress and anxiety.

In reality, in 70–90% of cases of peptic ulcer, the primary cause is gastritis or atrophic gastritis resulting from *H. pylori* infection. Other causes are anti-inflammatory analgesics (NSAID drugs) and aspirin. In 1994, a research unit operating under the WHO (the IARC – International Agency for Research on Cancer) presented a consensus statement, based on available research results, that gastric cancer was caused by *H. pylori* infection. Such infection was considered to be related to the development of gastric cancer (carcinogenicity class I) in a similar way to the link between smoking and lung cancer. According to the consensus statement, *H. pylori* infection launches a chain of events, such as the development of atrophic gastritis, which in certain cases leads to gastric cancer.

Approximately 30% of the global population (nearly 2,000 million people) suffer from dyspepsia – that is, occasional or continuous pain or discomfort in the upper part of the stomach. The only method of determining whether a patient with dyspepsia or *H. pylori* infection is suffering from atrophic gastritis has, until now, been the histological (microscopic) examination of biopsies taken via gastroscopy. This invasive examination is often expensive, uncomfortable for the patient and limited in its availability; consequently, the patient is usually treated only on the basis of anamnesis,

*The isolation of H. pylori changed our understanding of the causes of gastric cancer and peptic ulcer*