Helicobacter pylori infection and gastroduodenal disease in children undergoing upper GI endoscopy

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Background: The prevalence of Helicobacter pylori infection among children has been shown to be high, with estimates ranging from 20% to 70% in some studies. Its role in the pathogenesis of various gastrointestinal disorders, including peptic ulcer disease, gastritis, and gastric cancer, is well established in adults. However, the prevalence and clinical significance of H. pylori infection in children are not well defined.

Objective: To determine the prevalence of H. pylori infection and to compare the symptoms and endoscopic findings in children found to be infected with H. pylori with the same variables in H. pylori negative children.

Design: A prospective study involving 225 children who underwent upper GI endoscopy and antral biopsy at the GI Unit over a 4-year period. H. pylori status was determined in a prepared form. Material and methods: One hundred and eighty-four children (ages 3 months to 18 years) were included in the study. Two hundred and twenty-five endoscopic procedures were performed, and 102 antral biopsies were taken from 102 children with symptoms suggestive of upper GI disease. The prevalence of H. pylori infection was 68% in children with symptoms suggestive of upper GI disease and 58% in asymptomatic children. Patients with symptoms of H. pylori infection were more likely to have clinical, endoscopic, and symptomatic features than those without infection.

Results: H. pylori infection was associated with gastritis, duodenal ulcer, and esophagitis. The prevalence of H. pylori infection varied with age, with the highest prevalence seen in children aged 7-12 years.

Conclusion: H. pylori infection is a significant risk factor for upper GI disease in children, and its prevalence is significantly higher in children with clinical symptoms of upper GI disease.

Keywords: Helicobacter pylori, endoscopy,痞积症, Jordanian children, prevalence, gastrointestinal disease.
below the age of 6 years and Olympus XQ10 was used in older children. Children between 1 and 12 years of age were sedated by intravenous midazolam or diazepam. The endoscope and biopsy forceps were thoroughly cleaned and disinfected in 2% glutaraldehyde before each procedure. In most children a complete esophagogastroduodenoscopy was performed and two biopsies were taken from the antral mucosa. One hundred and sixty-six biopsies were considered satisfactory for analysis and study. Presence of *H. pylori* was confirmed by culture.

**Microbiological examination.** Biopsies were transferred into sterile bottles containing brain-heart infusion broth, and were subsequently cultured on the surface of blood agar plates. The plates were incubated under microaerophilic conditions at 37°C for up to 14 days. Developing colonies were identified on the basis of colonial morphology. Gram stain and biochemical tests for catalase, oxidase and urease activity.

**Results.** *H. pylori* was detected in 62 (39%) of the 160 children. *H. pylori* was present in 43 (42%) of 102 children with symptoms related to the upper GI tract but was also found in 19 (33%) of 58 asymptomatic children (NS). The prevalence of *H. pylori* infection increased with age.
may reflect differences in eating patterns as well as cultural factors. A similarly high prevalence was found in Saudi, (40%) Israeli, (35%) and Kuwaiti (31%) children. In the group as a whole, and in each individual symptom, the prevalence of \textit{H. pylori} infection was not significantly different from that in asymptomatic children. This finding is consistent with many recent reports which failed to show a strong relation between the presence of \textit{H. pylori} and abnormal symptoms. Sherman et al revealed that symptoms referable to the gastro-intestinal tract did not correlate with \textit{H. pylori} status in teenagers with eating disorders and dyspepsia. In children who have ingested caustics or had dysphagia the prevalence of \textit{H. pylori} infection was low (33\% and 20\% respectively). These children, however,