

Correspondence

Prevalence of *Helicobacter pylori* and parasites in symptomatic children examined for *Helicobacter pylori* antibodies, antigens, and parasites in Yemen

To the Editor

I read with interest the study by Bin Mohanna et al¹ on the prevalence of *Helicobacter pylori* (*H. pylori*) and parasites in symptomatic children examined for *H. pylori* antibodies, antigens, and parasites in Yemen. Bin Mohanna et al¹ addressed that the prevalence of *H. pylori* among the studied symptomatic cohort was 65%. I presume that such prevalence ought to be cautiously taken. This is based on the presence of an important limitation related to the methodology employed in the study. Bin Mohanna et al¹ stated that patients were considered to be infected with *H. pylori* if they were positive in both blood and stool, or one of the 2, either blood or stool test if there is a relevant complaint related to the abdomen. They did not support those diagnostic criteria by references or guidelines. It is noteworthy that the current reference standard for investigating *H. pylori* associated disease in children remains upper intestinal endoscopy and biopsies for histology and culture or rapid urease test. Non-invasive tests should be used to confirm *H. pylori* eradication following treatment. Currently there is insufficient evidence to recommend them over invasive tests in symptomatic children, because they cannot be used reliably in children to diagnose, or distinguish *H. pylori*-associated diseases from conditions that are not *H. pylori* related.² Despite that limitation, I presume that the reported high prevalence of *H. pylori* infection (65%) among symptomatic children in Bin Mohanna et al's study¹ together with its substantial prevalence among asymptomatic healthy Yemeni children (9%)³ necessitates considering the implementation of the following 2 measures: 1) as low personal hygiene and contact with animals were found to be important predictors for intestinal infections in Yemen, preventive public health measures involving good sanitary practices, good animal husbandry practices, and heightened provision of educational health programs and health services in all Yemeni governorates, particularly rural areas deem essential to implement,⁴ and 2) screening for *H. pylori* infection should be considered, particularly among school-aged children who have gastrointestinal complaints, especially those who complain of recurrent abdominal pain. It involves using a C-urea breath test

(C-UBT), and in patients with positive C-UBT, the diagnosis ought to be confirmed by demonstrating *H. pylori* in biopsy specimens obtained by gastrointestinal endoscopy. Due to limited financial resources and technical difficulties in Yemen, the aforementioned screening protocol is difficult to implement. Recently, positive saliva *H. pylori* antigen has been noticed to be an important indicator in C-UBT-asymptomatic patients. Since the saliva might be a reservoir from where *H. pylori* bacterium is transmitted to the stomach, positive saliva *H. pylori* antigen might be strongly associated with stomach infection.⁵ Hence, saliva *H. pylori* antigen detection might be adopted as a simple, practical, and better alternative tool for screening program, particularly in developing countries like Yemen.

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Reply from the Author

We are grateful to Prof. Al-Mendalawi for his interest in our study and we read with interest his comments on our article,¹ and we appreciate the opportunity to respond. We would like to clarify the following: 1) The objective of our study was to estimate the prevalence of *H. pylori* and parasites in symptomatic children examined for *H. pylori* antibodies, antigens, and parasites in Specialized Sam Pediatric Center in Sana'a city Yemen.¹ There were 675 children with age ranging from 3-15 years. They had different types of gastric complaints (recurrent, chronic abdominal pain, gastritis, dyspepsia, nausea, vomiting, and chronic diarrhea), and suspected of having *H. pylori*. In this situation, the best procedure for diagnosing *H. pylori* infection, or other parasite disease was the non-invasive methods, which included serology and stool antigen testing. Andrews et al⁶ reported that the serology testing is the best method in difficult situations where bacterial density may be low due to gastric atrophy or due to previous treatment with antibiotics, and stool tests have the advantage of being direct non-invasive tests because they detect either the bacteria, or part of it (DNA, antigen) or other parasite in a specimen, which is easily obtained. The stool antigen test (SAT) is an enzyme immunoassay designed to detect *H. pylori* in fecal specimens by measuring *H. pylori* antigen released from organisms lining the stomach wall. As antigen is only detected if *H. pylori*

is present, the SAT can be used as an accurate tool to diagnose active *H. pylori* infection, and to establish eradication of the organism following treatment;⁶⁻⁸ and 2) Patients were considered to be infected with *H. pylori* if they were positive in both blood and stool, or one of the 2, either blood or stool test if there is a relevant complaint related to the abdomen. Many researchers from Iraq, such as, Alsaimary et al, Twaij, Al-Yas, and from other countries⁹⁻¹³ depend on one or 2 tests only for the diagnosis of *H. pylori*, and any test that would give positive results for *H. pylori* was regarded positive for final diagnosis. However, every diagnostic method has a percentage of false positive or negative result; therefore, if at least 2 methods for *H. pylori* gives positive result at the same time for the same patient, this indicates that the patient has really been infected with *H.pylori*.⁹⁻¹³

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