



HELICOBACTER PYLORI INFECTION-A GROWING CONCERN IN NORTH INDIA

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ABSTRACT

Helicobacter pylori (*H. pylori*) is a very common infection in India. Nevertheless there remain a lot of challenges with relation to this infection in this country. The lack of good clinical studies and absence of guidelines pertaining to the Indian sub continent makes dealing with this infection difficult. There is a lot of confusion whether to "test and treat" for *H. pylori* even in patients of peptic ulcer disease (PUD), uninvestigated dyspepsia, and those with high risk for gastric malignancy. Invasive and costly methods such as gastroscopy, rapid urease test (RUT) and biopsy are used to test *H. pylori*. The noninvasive and cheap diagnostic tools such as breath tests and stool tests are not easily available in India. Once the diagnosis of *H. pylori* infection is made, the next challenge is to determine the most effective antibiotic regimen in Indian context. Issues of antibiotic resistance and re infection make the management even more difficult. The Indian enigma of high *H. pylori* infection and low gastric cancer (GC) rates makes the case against eradication even more strong. It is also important to consider the genetic diversity of *H. pylori* in India. More long term prospective studies are required from India before we can take the eradication at community levels. Improvement of hygiene and sanitation and providing proper drinking water is a challenge that needs to be taken up by the health administration to deal with the *H. pylori* problem.

KEYWORDS : *Helicobacter pylori*, diagnosis; eradication; antibiotic resistance.

INTRODUCTION

Helicobacter pylori (*H. pylori*) is a gram negative bacterium. It colonises the mucosal lining of the human digestive tract. It has special affinity for stomach and duodenum (1,2). Right from its discovery by Warren and Hastings in the early eighties; research on *H. pylori* is voluminous (3,4). It is considered to be one of the most common chronic bacterial infections which affect almost two thirds of the worldwide population (5). The transmission of this bacteria is from person to person and through contaminated water. It causes inflammation in the gut especially in the stomach and duodenum (1). Most of these inflammatory changes are silent and clinical manifestations occur in around one fifth of the patients after a long latent period (6). *H. pylori* causes chronic active gastritis as a rule in almost all the patients. Studies have shown that this infection has a role in causing peptic ulcer disease (PUD), atrophic gastritis, gastric neoplasm, and "mucosa-associated lymphoid tissue (MALT)" lymphoma (1,7,8). There is a steady decline in the incidence of *H. pylori* infection. This has been attributed to the facts that there has been improvement in hygiene and sanitation and also due to development of antibiotic regimens which can successfully eradicate the infection. Nonetheless in a country like India; a lot of challenges remain. The need of the hour is to consider *H. pylori* is a serious transmissible infectious disease, to discuss the pros and cons of treating this infection as a whole or in a select group of patients.

Eradication of *H. pylori* in India

Although the clinical implication of this infection is huge; the most significant being gastric malignancies; yet it is improbable to screen and eradicate *H. pylori* on mass population especially in a country like India. Ramakrishna BS in an excellent review article has discussed elaborately the points why *H. pylori* infection should not be eradicated in India (9). "Maastricht V/Florence Consensus Report" recommend that "*H. pylori* eradication for gastric cancer prevention is cost-effective in communities with a high risk for gastric cancer" (10). The "Second Asia-Pacific consensus guidelines for *H. pylori* infection" also advocates similar strategy of universal eradication of *H. pylori* at community levels (11). These recommendations are based on the community based economic studies that have evaluated the cost-effectiveness of "screen and-treat" policies in general population for the

prevention of gastric neoplasms (12). This approach will benefit those communities, who have a high prevalence of gastric cancer (GC). Almost all the randomized trials favouring mass eradication were conducted in these areas. However in countries like India where the prevalence of GC is low; long term longitudinal studies are required to gauge the cost effectiveness of such a strategy of mass eradication. Indian authors argue that adopting such a practice in India is challenging and not viable (9,12). The estimated population of the country is just about 1.3 billion people. If we keep the *H. pylori* prevalence at 60%, roughly around 8 hundred million individuals will have *H. pylori* infection (13). This huge task of treating this infection at community levels is discouraging and might dissuade doctors and the government from aggressively managing the infection.

Diagnosis of *H. pylori* infection: A challenge in India

The initial stage in the management is to establish the diagnosis of *H. pylori* infection. The challenges that doctors face in India are issues of accessibility and expenditure with regards to the diagnostic tests of *H. pylori* infection. Worldwide, non invasive tests for active infection are preferred (e.g., "urea breath test" or "stool antigen test") over tests that require endoscopy. Although, the ¹⁴C-urea breath test is probably the cheapest test, yet it is not readily available. Endoscopy is available at tertiary care centres, but is high-priced. The cost can range from Rs 300 at a government hospital or medical college to between Rs 500 and Rs 5000 at corporate hospitals and diagnostic centres (14). The advantage of endoscopy is that patients can be evaluated for mucosal disease such as peptic ulcers, gastritis and early malignancy. Endoscopy also allows one to take biopsy specimens that can be examined by histopathology, "rapid urease test (RUT)", or culture for antibiotic sensitivity. RUTs are inexpensive, accurate and easily available. Sakseena et al showed that "the rapid urease test (RUT) and brush cytology had the highest degree of agreement whereas histology was the most specific diagnostic test" (15). Another major issue with endoscopy is that most of the hospitals and diagnostic centres do not follow the standard protocol of disinfection of the endoscope. Essentially, the endoscope, the biopsy forceps, and other parts of the endoscopy system can easily become infected with *H. pylori* and can spread the infection. Thus it is essential to maintain high-level disinfection of all endoscopic

equipments in order to prevent the iatrogenic spread of the infection. Serologic testing for *H. pylori* antibodies has > 80 per cent sensitivity and > 90 per cent specificity. This test is easily available but is costly. Another limitation of the test is that even after successful eradication of *H. pylori*, it can remain positive for many years. All the recommendations do not advocate serologic testing for diagnosing this infection.

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H. Pylori Eradication In India.

There are two important reasons why *H. pylori* treatment is a challenge in the Indian subcontinent. First, the surroundings and water is contaminated and the gut infections are very widespread. This may make the task of eradication of this infection futile if there is going to be reinfection with the same bacteria sooner or later. Secondly, antibiotic use is widely prevalent. In India, antibiotics are easily available, even without a prescription and this easy access can lead to overuse or misuse. Even doctors are sometimes at fault as antibiotics are commonly wrongly prescribed or dispensed erroneously due to lack of apt awareness, desire to meet patient demands and maybe for economic incentives. This results in high frequency of antibiotic resistance.

CONCLUSION

There remain a lot of challenges with relation to *H. pylori* infection in India. There is lack of good clinical studies from India and absence of guidelines pertaining to the Indian subcontinent. There is a lot of confusion whether to "test and treat" for *H. pylori* even in patients of peptic ulcer disease, uninvestigated dyspepsia, and those with high risk for gastric malignancy. Invasive and costly methods such as gastroscopy and RUT and biopsy are used to test *H. pylori*. Once the identification of *H. pylori* infection is made, the next challenge is to determine the most effective antibiotic regimen in Indian context. Issues of antibiotic resistance and re infection make the management even more difficult. More long term prospective studies are required from India before we can take the eradication at community levels. Improvement of hygiene and sanitation and providing proper drinking water is a challenge that needs to be taken up by the health administration to deal with the *H. pylori* problem.

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