

Helicobacter Pylori Infection Among Dyspeptic Patients At A Tertiary Hospital In Northern Nigeria

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Citation

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Abstract

Aim: To determine the prevalence of *H. pylori* and associated upper gastrointestinal lesions among dyspeptic patients seen at a tertiary health centre in northern Nigeria. **Methods:** One hundred and ninety two (192) dyspeptic patients undergoing upper gastrointestinal endoscopy at the Federal Medical Centre Gombe were retrospectively studied. Gastric mucosal biopsy specimens were stained with haematoxylin and eosin. Modified Giemsa stain was employed to demonstrate the presence of *H. pylori*. **Results:** Ninety eight (51.9%) of the patients were males while 94 (48.1%) were females. Their ages ranged from 20 to 73 years with a mean of 40.4 (\pm SD 12.5) years. A total of 148 (77.1%) patients were positive for *H. pylori*. The most commonly identified lesion was gastritis which was seen in 42.2% of the patients followed by oesophagitis (34.9%) and duodenitis (21.9%), duodenal ulcer (6.3%), gastric ulcer (5.2%) and gastric cancer (3.2%). The frequency of *H. pylori* was 91.4% among patients with gastritis while it was 85.5%, 83.3% and 100% among patients with duodenitis, duodenal ulcer and gastric cancer respectively. **Conclusion:** There is a high prevalence rate of *H. pylori* among dyspeptic patients in northern Nigeria, particularly among those with significant gastrointestinal pathology on endoscopy. It is rational therefore to empirically treat these patients for *H. pylori* to save cost.

INTRODUCTION

Helicobacter pylori (*H. pylori*) is a helix-shaped Gram-negative microaerophilic bacterium. It is the principal cause of chronic gastritis and peptic ulcer disease and a major contributor to gastric carcinoma and mucosa-associated lymphoid tissue (MALT) lymphoma. Approximately 50% of the world population is infected, making it the most widespread infection in the world¹. However, only about 10-20% of infected persons become symptomatic². Although infection with *H. pylori* occurs worldwide, prevalence varies greatly among nations and among population groups in the same nation. It is more common in developing countries where the prevalence is over 80% among middle-aged adults as compared to 20- 50% in developed countries³. In Nigeria, *H. pylori* prevalence rates of 73-84% were reported among dyspeptic patients⁴⁻⁶. The overall prevalence of *H. pylori* is strongly correlated with socioeconomic conditions and prevalence tends to increase with age¹. The lower rate of infection in developed countries is largely attributed to higher hygiene standards and widespread use of antibiotics. Although the exact route of transmission of *H. pylori* is uncertain, person to person transmission by either the oral-oral or faecal-oral route is most likely. Consistent with

transmission by these routes, the organism has been isolated from faeces, saliva and dental plaque of some infected people⁷.

H. pylori infection can be diagnosed by non-invasive methods or by endoscopic biopsy of gastric mucosa. The non-invasive methods include the urea breath test, serologic tests, stool antigen assays and urine ELISA. However, the most reliable method for detecting *H. pylori* infection is through testing of endoscopically obtained gastric mucosal biopsy with rapid urease test, histology and culture⁸.

Dyspepsia is a common presenting complaint in clinical practice, and since most of the diseases associated with *H. pylori*, such as peptic ulcer disease, gastritis and gastric cancer commonly present with dyspepsia, it is imperative to investigate patients presenting with dyspepsia for *H. pylori* infection. The aim of this study, therefore, was to determine the common upper gastrointestinal lesions and the prevalence of *H. pylori* among dyspeptic patients seen at the Federal Medical Centre, Gombe in north-eastern Nigeria.

MATERIALS AND METHODS

This retrospective study was carried out at the Federal

Medical Centre Gombe in north-eastern Nigeria. Records of 192 dyspeptic patients who underwent upper gastrointestinal endoscopy were reviewed. Endoscopy was performed using Pentax FG-29W forward-viewing flexible oesophagogastroduodenoscope. At least three antral mucosal biopsies were taken using endoscopic biopsy forceps. The specimens were preserved in 10% formalin and sent to the Histopathology Department where routine tissue processing and paraffin embedding were done. The specimens were then cut into 3µm sections and stained with routine haematoxylin and eosin. Modified Giemsa stain was employed to demonstrate the presence of *H. pylori*.

The SPSS statistical package (version 15.0) was used for statistical analysis. Chi-square test was used to compare means of proportions and a *p* value of ≤ 0.05 was considered significant.

RESULTS

A total of 192 patients underwent endoscopy. Ninety eight (51.9%) were males while 94 (48.1%) were females. Their ages ranged from 20 to 73 years with a mean of 40.4 (\pm SD 12.5) years, the age group with the highest frequency being 20-39 years (Table 1). One hundred and forty eight patients (77.1%) were positive for *H. pylori*. There was no significant difference between the *H. pylori* status of male and female patients (77.3% versus 75.4%) [*p* > 0.05]. Table 2 shows the age-wise distribution of *H. pylori* infection among the patients. The most common endoscopic lesion was gastritis which was seen in 81 (42.2%) of the patients, followed by oesophagitis (34.9%) and duodenitis (21.9%). Duodenal ulcer was recorded in 12 (6.3%) of the patients, while 10 (5.2%) and 6 (3.2%) had benign gastric ulcer and gastric cancer respectively (Table 3). The frequency of *H. pylori* among patients with gastritis was 91.4%, while it was 85.7%, 83.3% and 70% respectively among patients with duodenitis, duodenal ulcer and gastric ulcer respectively, and 100% among patients with gastric cancer.

Table 1: Age and sex distribution of dyspeptic patients who had endoscopy at FMC Gombe

Table 2: Frequency of *H. pylori* infection among different age groups of dyspeptic patients seen at FMC Gombe

Table 3: Endoscopic Findings and *H. pylori* status of dyspeptic patients seen at FMC Gombe

DISCUSSION

Since *H. pylori* was first cultured by Warren and Marshall in

1983, much has been learned about its clinical aspects and its epidemiology.⁹ Knowledge of the epidemiology of this infection comes mainly from prevalence studies.

Investigation of the incidence of *H. pylori* infection has been limited due to difficulties in identifying the case at the onset. In general, *H. pylori* infection is more frequent in developing countries than in developed nations. In developed countries, *H. pylori* infection is acquired at fairly constant rate of 2–6% per year with prevalence 20–40% in adults.¹⁰

In this study the prevalence rate of 77.1% for *H. pylori* was relatively high. The finding is consistent with other similar studies in Africa.^{4,6,11} Jemilohun et al¹² in Ibadan, Nigeria, reported the common abnormalities at endoscopy which favorably compares with the findings in this study i.e. prevalence rate of 60.5% and 18.6% respectively for gastritis and duodenitis. Gastric ulcer (GU) was recorded in 9.3% of the patients, 8.1% had oesophagitis, while 3.5% and 2.3% of them had gastric cancer and duodenal ulcer (DU), respectively. In a similar study in the United States, a *H. pylori* prevalence rate of 93% was reported among symptomatic East African Immigrants.¹³ This finding is consistent with a similar hospital based study conducted in the gastrointestinal outpatient unit at Rift Valley Hospital in Nakuru, Kenya, where anti-*H. pylori* IgG rate was reported to be 71% and 51%, respectively, among symptomatic and asymptomatic patients.¹⁴ In addition, the commonest identifiable lesion at endoscopy in this study was gastritis which had a frequency of 42.2%. This is comparable to the frequency of 60% obtained in a previous study conducted in north-eastern Nigeria¹¹.

Our study showed that despite the high prevalence of *H. pylori* infection in this part of Nigeria, the prevalence of serious gastroduodenal pathologies (GU, DU and gastric cancer) was low as these lesions were documented in only 14.7% of all the patients. This is consistent with findings of previous studies conducted in the same region^{4,11}. This indicates that other factors, possibly genetic and dietary, also play a role in the pathogenesis of these disorders in this environment.

However, similar studies conducted in developed countries reported low prevalence rate for *H. pylori* at endoscopy.¹⁵ In a large Canadian trial of 1,040 dyspeptic patients in primary care conducted between 1999 and 2001, ulcer disease due to *H. pylori* was uncommon, with a prevalence of 5.3%, whereas oesophagitis was present in 43%¹⁶ In another recent study, conducted in many countries (primarily in North

America and Western Europe), 2,741 dyspeptic patients without alarm symptoms underwent endoscopy¹⁷. The most common findings were reflux oesophagitis with erosions (15%). Peptic ulcer disease was uncommon: gastric ulcers were found in 2.7% and duodenal ulcers in 2.3% of the subjects. The prevalence of upper gastrointestinal malignancy was 0.22%¹⁷. The low prevalence of these diseases reflects the changing epidemiology of *H. pylori* infection in the developed countries. In 1980s, before the widespread eradication of *H. pylori* was instituted, peptic ulcer disease was very prevalent in Western countries¹⁸. In the United Kingdom, peptic ulcer disease was found in 18% of cases, and an additional 12% had evidence of pyloro-duodenal disease, such as scarring. In a study of dyspeptic patients undergoing endoscopy in Sweden in the late 1980s, peptic ulcer disease was present in 13% of patients¹⁹.

CONCLUSION

This study examined the prevalence of *H. pylori* infection in a group of symptomatic Nigerian patients. It begs a practical question: Is the infection rate high enough to treat symptomatic patients empirically? We believe the answer is yes. This strategy saves money, time, and clinic resources. It avoids the problems of patients not returning for appointments, which is very common in a setting like ours.

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