Peptic ulcer disease and helicobacter pylori infection at kano, nigeria.

B Tijjani, A Umar

Citation

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Abstract

Background.
Helicobacter pylori infection has been identified as an important risk factor for the development of peptic ulcer disease and is probably the most important cause of relapse in those previously treated for peptic ulcer disease. The aim of this study was to determine the prevalence of Helicobacter pylori infection in patients with peptic ulcer disease at the Aminu Kano Teaching Hospital (AKTH), Kano, North-Western Nigeria.Methods. The study was cross sectional and conducted between December 2004 and May 2006. Consecutive patients with endoscopic diagnosis of peptic ulcer disease at the Endoscopy Unit of Aminu Kano Teaching Hospital, Kano were recruited. Other patients who had endoscopy within the study period for dyspepsia but with normal endoscopic findings were recruited as controls. Three gastric antral and two body biopsies were taken from each patient, and histological evaluation for presence of Helicobacter pylori was done using haematoxilin/eosin and modified Giemsa stains.Results. The Prevalence of Helicobacter pylori infectionin all the study subjects was found to be 81%. Helicobacter pylori were found present in 93.3% of patients with peptic ulcer disease. Presence of H. pylori infection in patients with duodenal ulcer and gastric ulcer were 95.8% and 90.9% respectively. However 80% of those with normal endoscopic findings also had Helicobacter pylori infection.Conclusion.
Helicobacter pylori infection is very common among patients with peptic ulcer disease in Kano Nigeria. Patients with non-ulcer dyspepsia also have, to a lesser extent a high prevalence of Helicobacter pylori infection.

INTRODUCTION

Helicobacter pylori (H. pylori) is a gram negative, micro aerophilic, spiral shaped, flagellated, bacillus which colonizes the mucus layer of the gastric epithelium.1 It is a common infection world wide with prevalence rates in the general population ranging from 30-40% in United States, 80-90% in South America and 70-90% in Africa.2-6 It is more common in developing countries, and its prevalence increases with age from 20% among teenagers to 50-60% of subjects in the 6th and 7th decades of life.

Although spirochetes have been described in gastric mucosa of humans since the early 1900, it was Robin Warren and Barry Marshall who in 1982 first characterized H. pylori and described its association with histologic gastritis and subsequent peptic ulcer disease (PUD).7 This agent is now regarded as the most important risk factor for developing PUD. To a large extent, the epidemiology of PUD reflects that of H. pylori infection, increasing dramatically with age.8 Estimates of annual incidence of PUD in H. pylori infected individuals is about 6-10 fold higher than that for uninfected individuals.4 In Europe, Australia and United States, 95% of duodenal ulcers and 60 – 70% of gastric ulcers are associated with H. pylori.9 In Nigeria, almost 100% of duodenal ulcers and 82% of gastric ulcer patients are H. pylori positive.6 Further evidence that links H. pylori to the development of PUD is the low recurrence rate of peptic ulcers, (less than 20%) following eradication of H. pylori compared to about 70% if H .pylori is not eradicated.10

Methods available for diagnosis of H .pylori include; invasive (via endoscopic biopsy specimens) and non invasive tests. The most reliable non invasive test is the urea breath test with specificity and sensitivity approaching 100 %.11, 12 It is however costly and not readily available in most developing countries. Other non invasive tests like serological detection of serum antibodies to H. pylori infection and the stool antigen test are also not widely available. Histology of endoscopically taken gastric biopsy has a very high sensitivity (96%) and specificity (98.8%) and

is also cheap, albeit it requires expertise.11,12 Other invasive methods of detecting H. pylori are Gram stain and culture with sensitivities of 92.2% and 98.4% respectively.11-13.

The extent of association of H. pylori with peptic ulcer disease is not well ascertained in North-Western Nigeria. The aim of this study was to determine the prevalence of H. pylori infection in patients with peptic ulcer disease at the Aminu Kano Teaching Hospital Kano, North-Western Nigeria.

METHODS

The study was conducted at the Gastroenterology Unit of Aminu Kano Teaching Hospital (AKTH) Kano between December 2004 and May 2006. All patients found to have peptic ulcer disease at endoscopy were recruited for the study. Those with normal endoscopic findings were also recruited as controls. Three gastric antral and two body biopsies were taken using endoscopic biopsy forceps. Routine tissue processing and paraffin embedding of the specimens were done. Five micrometer sections were then cut and stained with routine haematoxilin and eosin, and modified Giemsa stains to demonstrate H .pylori. Chi-square test was used to compare means of proportions and $P < 0.05$ was considered significant.

RESULTS

Three hundred and sixty one (361) patients had endoscopy during the study period for various indications. The mean age of the combined study subjects was 37.75 ± 13.5 years with 30-34 years age group having the highest frequency. Peptic ulcer disease was found in 117 (32.4%) of the patients and 134 (37.1%) had normal endoscopic finding. The mean age of patients with peptic ulcer disease was 38.53+ 17.5 years while that of patients with normal endoscopic finding was 35.9± 9 years. There was no significant age difference between the PUD cases and those with normal findings. Although more males had PUD than females, there was no significant gender difference among the PUD patients. Sixty eight (58.1%) of patients with PUD had duodenal ulceration, 44 (37.6%) had gastric ulcerations while the remaining 5 (4.3%) had both duodenal and gastric ulcers. About one third of patients with PUD had various degrees of associated gastro duodenitis. 95.6 % of the patients with duodenal ulcer were H. pylori infection positive compared to 90.9% of those with gastric ulcer. Although only 80.6% of those with normal endoscopic findings were also H.pylori positive, there was no significant difference between prevalence of H. pylori in those with PUD compared to those with normal findings, $\chi^2 = 0.03$, P value > 0.05.

Figure 1

Table1. PREVALENCE IN PUD

TYPE OF ULCER	*H. PYLORI* INFECTION				TOTAL
	PRESENT	%	ABSENT	%	
DUODENAL ULCER (DU)	65	95.6	3	4.4	68
GASTRIC ULCER (GU)	40	90.9	4	9.1	44
BOTH DU AND GU	5	100	-	-	5

DISCUSSION

Our study shows that PUD is quite common in our environment, accounting for about a third of all patients who had upper GI endoscopy during the study period. The study also showed that PUD is quite common in young age groups with most patients being less than forty years. This is in contrary to what was found in Europe, where most peptic ulcer disease patients were usually more than forty years of age, (14,15).

The result of this study noted that 95.8% of patients with duodenal ulcer were infected with H. pylori as well as 90.9% of those with gastric ulcer. This is similar to reports from other studies in Nigeria and other parts of Africa, where H. pylori prevalence of 90 – 100% and 60 – 90% were quoted for duodenal and gastric ulcers, respectively. 5, 6,

The report is also similar to the experience in Asia where H. pylori prevalence in duodenal ulcer patients was reported to be 81.5%. Although rather lower prevalence was reported in gastric ulcer patients than the African experience .16 It is noteworthy that even patients who had normal findings on endoscopy had a very high prevalence of H.pylori (80.6%).The association between H. pylori and PUD compared to non-ulcer dyspepsia was not found to be statistically significant. This is probably because of the very high prevalence of H. pylori infection of about 80 – 85% even in the healthy population of Nigeria.17 The lack of non invasive screening tests for H. pylori, and the paucity of endoscopy facilities in Nigeria would result in a lot of patients being empirically treated for PUD based on rational clinical evaluation, there may thus be need to treat for H pylori in patients with suspected PUD in our environment in view of the established high rate of recurrence of PUD in the presence of H. pylori 10

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Author Information

Bashir Mohammed Tijjani, FMCP
Gastroenterology Unit/ Department of Medicine, Aminu Kano Teaching Hospital Kano, Nigeria

Ali Bala Umar, MD
Department of Pathology, Aminu Kano Teaching Hospital, Kano Nigeria