

Original Article

PREVALENCE OF HELICOBACTER PYLORI INFECTION AMONG SUSPECTED PEPTIC ULCER DISEASE PATIENTS ATTENDING BAZE UNIVERSITY HOSPITAL, ABUJA

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Abstract

Background: *Helicobacter pylori* is a spiral-shaped gram negative micro-aerophilic bacterium that has been implicated as the causative organism of chronic gastritis, gastric and duodenal ulcer. About 50% of the world population are infected with *H. pylori*. Many epidemiologic studies have shown consistent evidence that people with chronic *H. pylori* infections have an increased risk of developing non-cardia gastric adenocarcinoma and gastric MALT lymphoma. The prevalence in Nigeria varies between 50% and 87%, with high prevalence observed in the Northern and Southwest of the country.

Objectives: To determine the prevalence of *Helicobacter pylori* infection among suspected peptic ulcer disease patients attending Baze University Hospital, Abuja.

Materials and Method: This was a retrospective, cross-sectional study done at the department of Medical Microbiology and Parasitology, Baze University Hospital, Abuja, Nigeria, from October 2022 to October 2025. The study involved the review of the medical microbiology laboratory data of both *H. pylori* stool antigen and serology tests results of suspected peptic ulcer disease patients' samples.

Results: A total of 316 suspected PUD patients were included in the study with females accounting for 71.2% of the participants. The prevalence rate of *H. pylori* infection (serology and stool antigens combined) was 50.0% (158/316). The prevalence in the females (36.4%) was three times higher than in the males (13.6%). The age group ≤20 years, accounted for the highest prevalence (30.3%) of *H. pylori* infection, followed closely by age group 21 – 30 years with 26.6%.

Conclusion: *H. pylori* infection is prevalent among symptomatic adults in this locality. Screening for *H. pylori* is recommended for detection, prompt treatment and eradication of the infection to prevent long-term complications.

Keywords: *H. pylori* prevalence, Baze University Hospital, Abuja

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INTRODUCTION

Helicobacter pylori (*H. pylori*) is a spiral-shaped gram negative micro-aerophilic bacterium that causes chronic gastritis and currently affects about 50% of the world population. The infection is mostly asymptomatic however, it causes gastritis and has been implicated in about 70% – 90% of all cases of gastric and duodenal ulcers. [1] Many epidemiologic studies have shown consistent evidence that people with chronic *H.*

pylori infections have an increased risk of developing gastric adenocarcinoma and gastric mucosa associated lymphoid tumour (MALT) lymphoma. [2, 3] World Health Organization (WHO) classified *H. pylori* as a class I carcinogen for gastric cancer. [4]

The prevalence of *H. pylori* varies between countries and even among racial groups resident within the same country. Children and adults in developing countries are

most affected than in the developed countries. This may be due to factors such as poor sanitation and lack of potable water supply in developing countries. [5] Various studies in Nigeria showed a prevalence rate of 73% to 95% among patients with dyspepsia. [6] Northern and Southwest Nigeria have a higher prevalence of *H. pylori* infection when compared to other regions with also an increased infection rate in females.

The prevalence rate of *H. pylori* infection in Nigeria has in several cases been associated with risk factors such as, low socioeconomic status, poor personal hygiene, poor environmental hygiene, and lack of treated or safe water, household overcrowding, alcoholic drink addiction, cigarette smoking, and poor knowledge of *H. pylori* infection. [7] The aim of this study is to determine the prevalence of *Helicobacter pylori* (*H. pylori*) infection among suspected peptic ulcer disease patients in a tertiary hospital in Baze University Hospital, Abuja.

MATERIALS AND METHODS

This was a retrospective, cross-sectional study done at the Medical Microbiology Laboratory, Department of Medical Microbiology and Parasitology, Baze University Hospital, Abuja, Nigeria, from October 2022 to October 2025. The study involved the review of the medical microbiology laboratory data of both *H. pylori* stool antigen and *H. pylori* serology tests results of suspected peptic ulcer disease patients' samples. The data extracted from the records included; sample ID, age, gender (male/female), date of testing, results of *H. pylori* test (negative/positive), method of testing (stool antigen/serum antibody).

Inclusion criteria: All medical microbiology laboratory records of *H. pylori* stool antigen and *H. pylori* serology tests results from October 2022 to October 2025.

Exclusion criteria: All medical microbiology laboratory records of *H. pylori* stool antigen and *H. pylori* serology tests results that were incomplete from October 2022 to October 2025.

Data Analysis: The collected data were entered and analysed using Microsoft Excel 2013. Descriptive statistics, including frequencies and percentages, were used to summarise the prevalence of

Helicobacter pylori infection and the gender distribution of the study participants.

Ethical Clearance: Ethical approval was obtained from the Federal Medical Center (FMC) Jabi, Abuja, Health Research Ethics Committee (HREC) before the commencement of this study. Data was anonymized and handled with confidentiality in compliance with ethical standards for secondary data use.

RESULTS

A total of 316 suspected PUD patients were included in the study with females accounting for 71.2% (255) of the participants. The prevalence rate of *H. pylori* infection (serology and stool antigens combined) was 50.0% (158/316). The infection was higher in the female (72.8%) than in the male participants (27.2%). The prevalence in the females (36.4%) was three (3) times higher than in the males (13.6%). The age group ≤ 20 years, accounted for the highest prevalence (30.3%) of *H. pylori* infection, followed closely by age group 21 – 30 years with 26.6%.

Table 1. *Helicobacter pylori* test distribution according to Age groups

Age groups (years)	<i>H. pylori</i> Serum Ab positive	<i>H. pylori</i> Stool Ag positive	Total (Ab + Ag)
<20	23	25	48
21 - 30	24	18	42
31 - 40	18	3	21
41 - 50	6	6	12
51 - 60	3	2	5
>60	2	0	2
Unspecified	21	7	28
Total	97	61	158

Table 2. *Helicobacter pylori* test distribution according to method and gender

Gender	<i>H. pylori</i> Ag positive	<i>H. pylori</i> Ab positive	<i>H. pylori</i> test negative	Total no of participants
Males	13	30	48	91
Females	67	48	110	225
Total	80	78	158	316

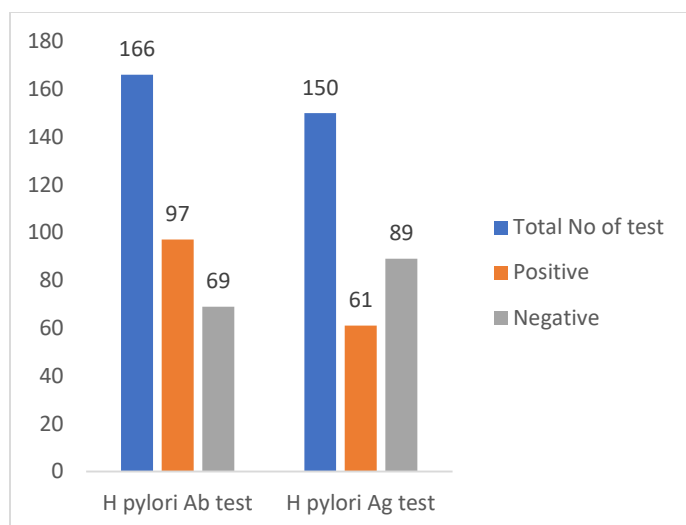


Fig. 1: Helicobacter pylori test distribution

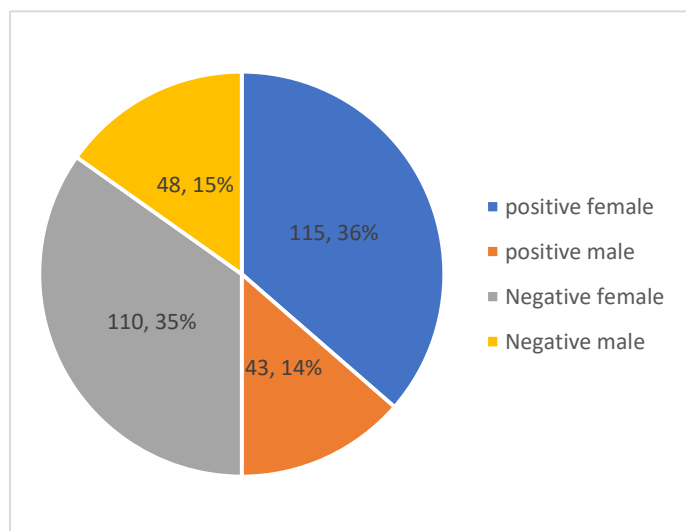


Fig. 2: Helicobacter pylori test distribution according to gender

DISCUSSION

Many epidemiologic studies have shown consistent evidence that people with chronic *H. pylori* infections have an increased risk of developing non-cardia gastric adenocarcinoma and gastric MALT lymphoma. [2, 3]

A retrospective, cross-sectional study done at Baze University Hospital, Abuja, Nigeria, aimed at determining the prevalence of *Helicobacter pylori* amongst 316 patients. The prevalence of *H. pylori* infection (serology and stool antigens combined) was as high as 50.0% of all presenting cases. This is comparable to the prevalence rates of 51.96% by Gide et al., and 50.7% by Okoroiwu et al. [8, 9] This is also comparable with the 50% projected prevalence of *H. pylori* infection in the world population.

[10] The prevalence in our study was slightly lower than that of Irabor et al., (59.7%), Okezie et al., (58.8%) and Mynepalli et al., (59%) respectively. [11, 12, 13]

The prevalence of *H. pylori* infection in Nigeria varies with higher prevalence observed mostly in the Northern and Southwest Nigeria compared to other regions. [7] The prevalence of *H. pylori* observed in our study was in contrast with some studies in Nigeria. Bello et al., reported a prevalence of 81.7% in Kano [13], while Olokoba et al., reported a prevalence of 93.6% by serology and 80.0% by histology among Nigerians in the Northcentral. [14] Aje et al., and Jemilohun et al., reported prevalence rates of 67.4% and 63.5% respectively, in southwest Nigeria. [6, 16]

Our study had the highest prevalence in the under 20-year age group, accounting for 30.3% of the participants with *H. pylori* infection. The high prevalence in under 20 years being the school age group, is attributed to poor hygiene usually observed especially in children and adolescents. This is similar to the report of 27.2% observed among children age 3 to 18 years by Ikobah et al. [16] While a previous study by Okoroiwu et al., observed the most affected age groups were 31-40 years (58.5%), 41-50 years (57.3%) respectively. [9] It has also been reported that there is an increase in the rate of infection with age and that some people may harbor the infection for a long period without any clinical symptoms. [17]

The infection Prevalence was thrice as high in the females (36.4%) as in males the (13.6%) of our study participants. This is similar to reports by Okoroiwu et al., [9] where the prevalence in female was 53.0% vs 47.3% in male and 64.0% rate by Mynepalli et al., [13].

CONCLUSION

H. pylori infection is prevalent among symptomatic adults and children in this locality. Hence, screening for *H. pylori* is recommended for detection, prompt treatment and eradication of *H. pylori* infection to prevent long-term complications.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Pizzorno JE, Murray MT, Joiner-Bey H. Peptic ulcers. In: *The clinician's handbook of natural medicine*. St Louis (MO): Churchill Livingstone/Elsevier; 2008. p. 778–9.
- Morais S, Costa A, Albuquerque G, Araújo N, Tsugane S, Hidaka A, et al. True *Helicobacter pylori* infection and non-cardia gastric cancer: a pooled analysis within the Stomach Cancer Pooling (StoP) Project. *Helicobacter*. 2022;27(2).
- Han Z, Liu J, Zhang W, Kong Q, Wan M, Lin M, et al. Cardia and non-cardia gastric cancer risk associated with *Helicobacter pylori* in East Asia and the West: a systematic review, meta-analysis, and estimation of population attributable fraction. *Helicobacter*. 2023;28(2).
- IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, International Agency for Research on Cancer. *Schistosomes, liver flukes and Helicobacter pylori*. Geneva: International Agency for Research on Cancer; 1994.
- Emerenini FC, Nwolis EC, Iregbu FU, Eke CB, Ikefuna AN. Prevalence and risk factors for *Helicobacter pylori* infection among children in Owerri, Nigeria. *Niger J Clin Pract*. 2021;24(8):1188–93.
- Aje AO, Otegbayo JA, Odaibo GN, Bojuwoye BJ. Comparative study of stool antigen test and serology for *Helicobacter pylori* among Nigerian dyspeptic patients: a pilot study. *Niger J Clin Pract*. 2010;13(2):120–4.
- Smith S, Ajayi A, Jolaiya TF, Essiet U. Prevalence, diagnosis and treatment of *Helicobacter pylori* infection in Nigeria. *Niger J Gastroenterol Hepatol*. 2022;14(1):2.
- Gide S, Ibrahim Y, Anas G, Alegbe SD. Prevalence of *Helicobacter pylori* infection in patients with dyspeptic symptoms in Damaturu Metropolitan. *J Adv Microbiol*. 2019;1–8.
- Okoroiwu GIA, Toluh FG. Prevalence and associated risk factors of *Helicobacter pylori* among residents of Abuja Municipal Area Council (AMAC), FCT Abuja. *Sokoto J Med Lab Sci*. 2025;10(1):162–73.
- Magalhães Queiroz DM, Luzzi F. Epidemiology of *Helicobacter pylori* infection. *Helicobacter*. 2006;11 Suppl 1:1–5.
- Irabor M, Ugwu RO, George IO, Jaja TC. Prevalence and risk factors of *Helicobacter pylori* infection among secondary school adolescents in Port Harcourt Metropolis, Nigeria. *Int J Trop Dis Health*. 2025;46(5):69–80.
- Okezie G, Nwobu RAU, Mgbowula I. Prevalence of *Helicobacter pylori* among clients attending private medical laboratory diagnostic center in Karshi, Abuja, Nigeria. *Int J Sci Res Publ*. 2020;10(11):489–93.
- Mynepalli SKC, Maureen O, Mumuni A. Prevalence of *Helicobacter pylori* and hygiene practices among public secondary school students in Ikeja Local Government Area, Lagos, Nigeria. *Health*. 2014;6(4):250–8.
- Bello AK, Borodo MM, Yakasai AM, Tukur AD. *Helicobacter pylori* antibiotic sensitivity pattern in dyspeptic patients in Kano, Nigeria. *S Afr J Infect Dis*. 2019;34:125.
- Olokoba AB, Gashau W, Bwala S, Adamu A, Salawu FK. *Helicobacter pylori* infection in Nigerians with dyspepsia. *Ghana Med J*. 2013;47(2):79–81.
- Jemilohun AC, Otegbayo JA, Ola SO, Oluwasola OA, Akere A. Prevalence of *Helicobacter pylori* among Nigerian patients with dyspepsia in Ibadan. *Pan Afr Med J*. 2010;6:18.
- Ikobah JM, Uhegbu K, Ikwuagwu E, Adedokun F, Akpan FM, Okwong EE, et al. Prevalence and associated risk factors for *Helicobacter pylori* infection using stool antigen test among children presenting to the outpatient clinic of a tertiary hospital in Nigeria. *Calabar J Health Sci*. 2023;7:75–83.