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Original article

Helicobacter pylori Positivity by Serological and Stool Antigen Testing Among Patients Attending an Internal Medicine Clinic in Tripoli, Libya

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Helicobacter Pylori, Seropositivity, Stool Antigen, Libya, Tripoli, Active Infection.

ABSTRACT

Helicobacter pylori infection remains an important global health problem, but recent epidemiological data from Libya are limited. This cross-sectional study assessed *H. pylori* positivity among patients attending the Internal Medicine Clinic at Tripoli Medical Center, Libya, between 16 December 2025 and 15 April 2026. We tested 79 patients by serology (VIDAS® H. pylori IgG, bioMérieux) and 51 patients in a separate group by stool antigen testing (H. pylori Stool Ag cassette, SNIBE). We described results by age group and gender, and assessed associations with age group using chi-square and exact tests. Overall, 51/79 participants (64.6%; 95% CI 53.6–74.2) were seropositive, and 15/51 (29.4%; 95% CI 18.7–43.0) were positive by stool antigen testing. Seropositivity ranged from 75.0% in participants aged 0–19 years to 40.0% in those aged ≥60 years, and stool antigen positivity from 20.0% (0–19 years) to 50.0% (≥60 years). Age group was not significantly associated with serological status (χ^2 = 2.51, df = 3, Pearson p = 0.474; exact p = 0.489) or stool antigen status (χ^2 = 3.12, df = 3, Pearson p = 0.373; exact p = 0.358). Females made up 53.2% of the serology group and 72.5% of the stool antigen group. The two rates come from different patient groups and measure different things: IgG antibodies indicate exposure (current or past), whereas stool antigen indicates active infection, so the rates should not be compared directly. The findings show a high *H. pylori* positivity among clinic-attending patients in Tripoli and support larger multicenter studies using standardized tests for active infection in Libya.

Introduction

Helicobacter pylori is a spiral-shaped, Gram-negative bacterium that colonizes the human gastric mucosa and persists in the stomach despite its acidic environment. The discovery of *H. pylori* in the gastric mucosa and its association with gastritis and peptic ulcer disease represented a major advance in the understanding of gastric disorders [1]. Subsequent research established its role in gastric disease and showed that persistence is supported by bacterial characteristics including urease production, motility, adhesion, and virulence-associated mechanisms [2–4].

H. pylori infection is one of the most common chronic bacterial infections worldwide. Its prevalence varies considerably according to geographical region, age, socioeconomic conditions, and other demographic and environmental factors [5–7]. A systematic review and meta-analysis of 224 studies from 71 countries or regions, including nearly 3 million individuals, estimated that global prevalence decreased from 58.2% during 1980–1990 to 43.1% during 2011–2022. It also showed substantial heterogeneity between populations and found that studies using serological methods generally reported higher estimates than studies using non-serological methods [6]. Earlier global evidence likewise demonstrated considerable geographical variation [5].

The clinical importance of the infection lies in its capacity for long-term colonization and chronic gastric inflammation. It is associated with chronic gastritis and peptic ulcer disease and is an established risk factor for gastric cancer and other gastroduodenal complications [2,8,9]. Clinical outcome is influenced by bacterial virulence factors, host characteristics, environmental conditions, and the duration of colonization [3,8].

Accurate diagnosis is important for determining infection status and guiding management. Available methods include invasive tests based on gastric biopsy and non-invasive tests such as serology, urea breath testing, and stool antigen testing [10,11]. Serological assays detect antibodies and may therefore indicate previous exposure rather than active infection; serological positivity alone cannot reliably distinguish current infection from past infection or successful eradication [10,11]. Stool antigen testing detects bacterial antigen in fecal samples and is a non-invasive method for detecting active infection, with good diagnostic accuracy reported in systematic reviews, particularly for validated monoclonal-antibody-based assays [12,13]. Consensus guidelines accordingly recommend urea breath testing or monoclonal stool antigen testing for diagnosis and for confirming eradication [14,15].

Epidemiological information from Libya remains limited. A retrospective study of 707 participants in polyclinics in Tripoli during January–December 2021, based on serological testing, reported an overall seropositivity of 17.2% (122/707), with

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the highest seropositivity among participants aged 30 to <40 years and no significant difference between males and females [16]. Because that study used serology, its results reflect seropositivity rather than active infection.
The present study therefore aimed to provide recent laboratory-based data on *H. pylori* positivity among patients attending the Internal Medicine Clinic at Tripoli Medical Center between 16 December 2025 and 15 April 2026. Serological positivity and stool antigen positivity were assessed separately, in separate patient groups, in relation to age group and gender.

Materials and Methods

Study Design, Setting, and Participants

A descriptive cross-sectional study was conducted among patients attending the Internal Medicine Clinic at Tripoli Medical Center, Libya, from 16 December 2025 to 15 April 2026. Serological testing for *H. pylori*-specific IgG (n = 79) and stool antigen testing (n = 51) were performed in separate patient groups. Participants in the serology group were aged 0–79 years and those in the stool antigen group 0–89 years. Patients were eligible if they had not received antibiotic or eradication therapy for *H. pylori* within the two weeks before sample collection, or had never been treated for *H. pylori*; patients who had received such treatment within this period were excluded. Eligibility was confirmed for each patient at the time of sampling. This two-week exclusion period is shorter than the four-week antibiotic washout and two-week proton pump inhibitor washout recommended by the Maastricht VI/Florence consensus before stool antigen testing [14]; its implications are discussed under Limitations.

Sample Collection

For serology, venous blood was collected, allowed to clot, and serum was separated. For stool antigen testing, fresh stool (approximately 1–2 g, or 1–2 mL of liquid stool) was collected in clean, dry containers and tested within 6 h of collection or stored at 2–8 °C for up to 3 days before analysis; samples requiring longer storage were kept below −20 °C, according to the manufacturer's instructions.

Serological Detection of H. pylori IgG

Testing used the VIDAS® H. pylori IgG assay (Ref. 30192; bioMérieux, France) according to the manufacturer's instructions. Results were classified as positive or negative using the manufacturer's cut-off values.

Stool Antigen Detection

Antigen detection used a commercial H. pylori Stool Ag cassette (SNIBE, China) according to the manufacturer's instructions. For solid specimens, the sampling applicator was inserted into at least three different areas of the specimen to obtain approximately 50 mg of stool; for liquid specimens, approximately 80 µL was transferred to the collection tube containing extraction solution. The tube was shaken and left to stand for approximately 2 min, and two drops (approximately 80 µL) of the extract were applied to the sample well of a cassette brought to room temperature. A result was positive when both the control (C) and test (T) lines appeared, negative when only the control line appeared, and invalid when the control line did not appear, in which case the test was repeated with a new specimen.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 23. Age was recorded in 10-year groups (Supplementary Tables S1 and S2, provided as a separate file); because several of these groups contained very few participants, they were combined for analysis into four groups: 0–19, 20–39, 40–59, and ≥60 years. Categorical variables are presented as frequencies and percentages, and 95% confidence intervals for proportions were calculated using the Wilson method. Associations between test results and age group were assessed with Pearson's chi-square test; when more than 20% of cells had expected counts below 5, the exact p-value (Fisher–Freeman–Halton test) was also calculated. For consistency, both the Pearson chi-square p-value and the exact p-value are reported throughout the Abstract, Results, and tables in the same format (χ^2, df, Pearson p; exact p), and the exact p-value was used for statistical inference. A p-value <0.05 was considered statistically significant. Gender is reported as the composition of each test group; test results stratified by gender were not analyzed (see Limitations).

Ethical Considerations

Ethical approval for the study was obtained from the Research Administration Office of the Higher Institute of Medical Sciences and Technologies – Abu Salim, Tripoli, Libya (approval no. 452026, dated 10 April 2026). For participants under 18 years, laboratory staff contacted a parent or guardian at the time of sample collection and obtained their consent for the test result to be used for scientific research. Adult participants were informed of the study and agreed to the use of their results for research. Patient data were anonymized before analysis and kept confidential.

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Results

Serological Testing

Of 79 participants tested serologically (37 males, 46.8%; 42 females, 53.2%), 51 (64.6%; 95% CI 53.6–74.2) were seropositive, and 28 (35.4%) were seronegative. Seropositivity was 75.0% among participants aged 0–19 years, 65.5% at 20–39 years, 60.0% at 40–59 years, and 40.0% at ≥60 years (Table 1; Figure 1). The association between age group and serological status was not statistically significant (χ^2 = 2.51, df = 3, Pearson p = 0.474; exact p = 0.489; Table 2). In the original 10-year groups, the highest seropositivity was observed in the 0–9 and 10–19-year groups (75.0% each; Supplementary Table S1).

Table 1. Serology cohort (N = 79): demographic composition by age group and gender, and H. pylori serological results by age group

Age group (years)	Male, n (%)	Female, n (%)	Total, n (%)	Positive, n (%)	Negative, n (%)
0–19	9 (45.0)	11 (55.0)	20 (25.3)	15 (75.0)	5 (25.0)
20–39	12 (41.4)	17 (58.6)	29 (36.7)	19 (65.5)	10 (34.5)
40–59	13 (52.0)	12 (48.0)	25 (31.6)	15 (60.0)	10 (40.0)
≥60	3 (60.0)	2 (40.0)	5 (6.3)	2 (40.0)	3 (60.0)
Total	37 (46.8)	42 (53.2)	79 (100.0)	51 (64.6)	28 (35.4)

Percentages for male, female, positive, and negative are row percentages; percentages in the Total column are of N = 79. Male and female columns describe the demographic composition of the serology cohort and are not a cross-tabulation of gender against test positivity.

Table 2. Statistical analysis of the association between age group and test result

Test group	Test	χ^2	df	p-value	Exact p-value	Interpretation
Serology (n = 79)	Pearson chi-square	2.51	3	0.474	0.489	Not statistically significant
Stool antigen (n = 51)	Pearson chi-square	3.12	3	0.373	0.358	Not statistically significant

Exact p-values were obtained with the Fisher–Freeman–Halton test because more than 20% of cells had expected counts below 5. The p-value column gives the Pearson chi-square p-value and the exact p-value column the Fisher–Freeman–Halton p-value; both are reported identically in the Abstract and Results, and the exact p-value was used for inference.

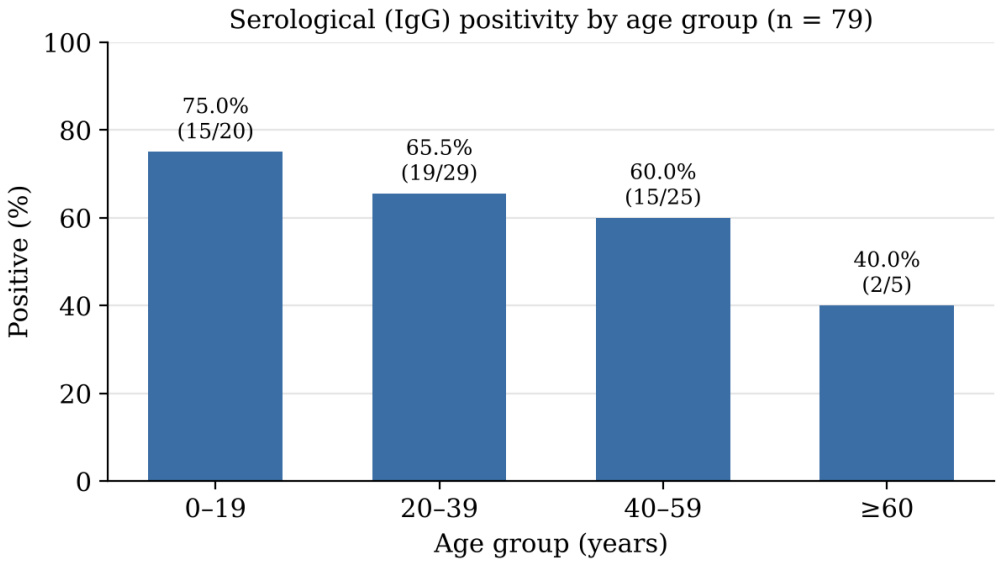


Figure 1. Serological (IgG) positivity for H. pylori by age group (n = 79). Labels show the percentages and positive/tested counts.

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Stool Antigen Testing

Of 51 participants tested by stool antigen (14 males, 27.5%; 37 females, 72.5%), 15 (29.4%; 95% CI 18.7–43.0) were positive, and 36 (70.6%) were negative. Positivity was 20.0% among participants aged 0–19 years, 22.2% at 20–39 years, 42.9% at 40–59 years, and 50.0% at ≥60 years (Table 3; Figure 2), although the oldest group included only four participants. Age group was not significantly associated with stool antigen status (χ^2 = 3.12, df = 3, Pearson p = 0.373; exact p = 0.358; Table 2).

Table 3. Stool antigen cohort (N = 51): demographic composition by age group and gender, and H. pylori stool antigen results by age group

Age group (years)	Male, n (%)	Female, n (%)	Total, n (%)	Positive, n (%)	Negative, n (%)
0–19	2 (13.3)	13 (86.7)	15 (29.4)	3 (20.0)	12 (80.0)
20–39	9 (50.0)	9 (50.0)	18 (35.3)	4 (22.2)	14 (77.8)
40–59	2 (14.3)	12 (85.7)	14 (27.5)	6 (42.9)	8 (57.1)
≥60	1 (25.0)	3 (75.0)	4 (7.8)	2 (50.0)	2 (50.0)
Total	*14 (27.5)*	*37 (72.5)*	*51 (100.0)*	*15 (29.4)*	*36 (70.6)*

Percentages for male, female, positive, and negative are row percentages; percentages in the Total column are of N = 51. Male and female columns describe the demographic composition of the stool antigen cohort and are not a cross-tabulation of gender against test positivity.

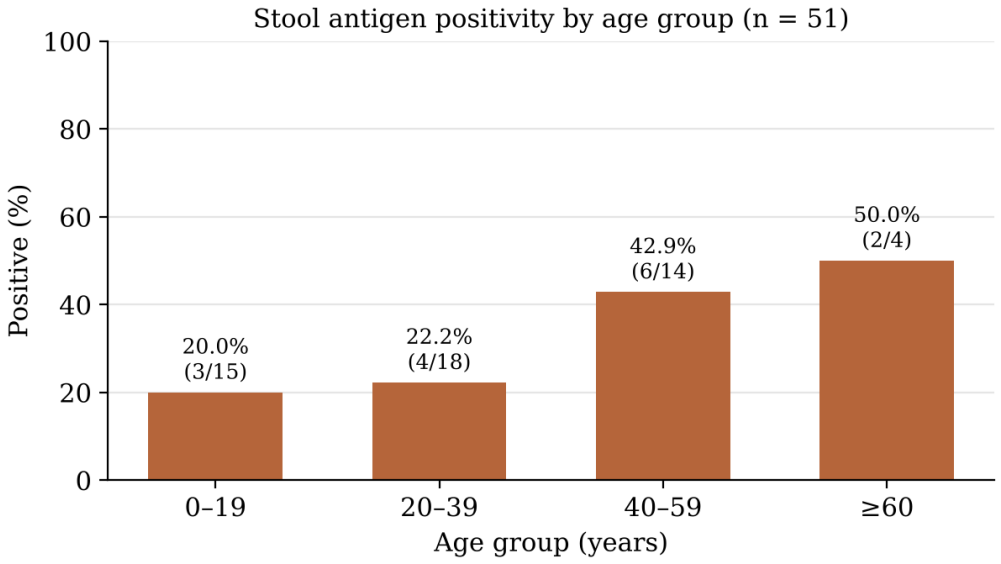


Figure 2. Stool antigen positivity for H. pylori by age group (n = 51). Labels show percentages and positive/tested. Figures 1 and 2 represent separate groups of patients.

Discussion

This study provides recent laboratory-based data on *H. pylori* positivity among patients attending an Internal Medicine Clinic in Tripoli. Overall seropositivity was 64.6% (95% CI 53.6–74.2) and stool antigen positivity was 29.4% (95% CI 18.7–43.0). These figures come from two different groups of patients and from tests with different biological targets. Antibodies may persist after bacterial clearance and cannot distinguish active from past infection, whereas stool antigen detection is more closely related to current infection [10–13]. The two percentages are therefore not equivalent estimates of active infection, and they cannot be used to calculate diagnostic agreement or the proportion of seropositive patients with active infection.

The 64.6% seropositivity is much higher than the 17.2% reported in a previous Tripoli study of 707 participants [16]. The two studies differ in setting (an internal medicine clinic versus polyclinics), recruitment, sampling period, and probably in the serological assay and cut-off used, as the earlier study used ELISA for IgG/IgA antibodies [16]. The present sample is a small, clinic-based group that may include patients referred for gastrointestinal complaints, so the difference should not be read as a change in prevalence in the general population of Tripoli. Global estimates also vary widely with population and diagnostic method [5,6].

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Seropositivity declined with age, from 75.0% in participants aged 0–19 years to 40.0% in those aged 60 years or older, whereas stool antigen positivity tended to rise with age, from 20.0% to 50.0%. Neither trend was statistically significant, and both extreme estimates rest on few participants: only five participants aged ≥60 years were tested serologically and four by stool antigen. With 4 to 29 participants per age group, the study had limited power to detect differences. The high seropositivity in the youngest group (9 of 12 children aged 0–9 years, a breakdown taken from Supplementary Table S1; these children form part of the 0–19-year group, of whom 15/20 were seropositive in Table 1) also requires caution, because the group is heterogeneous and, in infants, maternal antibodies may affect serological interpretation.

The gender composition differed between the two test groups: females made up 53.2% of the serology group and 72.5% of the stool antigen group, and only 14 males were tested by stool antigen. This imbalance may reflect healthcare-seeking behaviour or referral patterns in the clinic. Positivity by gender was not analyzed in this report, and future studies with larger, balanced samples should examine whether *H. pylori* positivity differs between males and females in Libya.

The findings confirm that both specimen types, blood and stool, can be used to detect *H. pylori* in clinical practice and in epidemiological work, provided each result is interpreted according to what the test measures. Serology on blood is simple, inexpensive, and well suited to large-scale screening of exposure, but it cannot show whether infection is present now. Stool antigen testing with validated assays detects active infection and can be used to confirm eradication after treatment [12–15]. Using both approaches therefore supports continued case finding in Libyan clinical settings and provides a practical basis for a national survey. For such a survey, molecular detection by polymerase chain reaction (PCR) on stool or gastric biopsy specimens is preferable where resources allow, because it identifies the organism directly with high accuracy and can simultaneously detect mutations associated with clarithromycin resistance, which is important for selecting eradication therapy [14].

Limitations

The sample sizes were small, especially for stool antigen testing, and the confidence intervals are wide; several age groups contained very few participants. The study was conducted at a single center, and the patients may not represent the wider population of Tripoli or Libya. The two tests were performed in different patients, preventing direct comparison. Patients treated with antibiotics for *H. pylori* within the previous two weeks were excluded. This exclusion period is shorter than that recommended by international guidelines: the Maastricht VI/Florence consensus advises an antibiotic-free interval of at least four weeks and an interval of two weeks without proton pump inhibitors before stool antigen testing, because both can suppress the bacterial load and cause false-negative results [14]. Patients who had received antibiotics two to four weeks before sampling may therefore have been included, and proton pump inhibitor use and presenting symptoms were not recorded. Consequently, some false-negative stool antigen results cannot be excluded, and the stool antigen positivity of 29.4% may underestimate the true frequency of active infection in this group. The stool test was a rapid cassette assay, which may be less accurate than laboratory-based monoclonal ELISA tests on which much of the cited accuracy evidence is based [12,13]. Test results were not analyzed by gender, because a reliable cross-tabulation of gender by test result was not available for this report. The cross-sectional design prevents causal inference.

Despite these limitations, the study contributes recent data from a Libyan clinical population using both a serological method and a test for active infection, and supports larger multicenter studies with standardized diagnostic methods and relevant demographic and clinical variables.

Conclusion

In this sample of patients attending the Internal Medicine Clinic at Tripoli Medical Center, 64.6% were seropositive for *H. pylori* IgG and 29.4% were positive by stool antigen testing, in two separate groups of patients. Serology reflects exposure whereas stool antigen indicates active infection, so the two rates should not be compared directly. Age group was not significantly associated with either result, and females predominated in both test groups. Both blood and stool testing can be used to detect *H. pylori* and should continue to support case finding; larger, more representative studies from different regions of Libya, ideally a national survey using PCR-based detection, are recommended.

Recommendations

Larger multicenter studies should be conducted in different regions of Libya. Future epidemiological studies should preferentially use standardized tests capable of identifying active *H. pylori* infection, such as stool antigen testing or urea breath testing, when estimating current infection; serology on blood remains useful for large-scale screening of exposure.

A national survey of *H. pylori* infection in Libya should be undertaken, using PCR-based molecular detection where possible, both to confirm infection and to determine clarithromycin resistance. Studies should collect socioeconomic, environmental, behavioural, and clinical information (including proton pump inhibitor and antibiotic use) that may influence transmission [7] and test performance. Test kits, manufacturers, assay types, cut-off values, and quality-control procedures should be documented clearly to improve reproducibility. Larger samples should be used to allow reliable age- and gender-specific analyses, with results recorded for each patient in a structured database.

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Declarations

Ethics approval and consent to participate

Approved by the Research Administration Office of the Higher Institute of Medical Sciences and Technologies – Abu Salim, Tripoli, Libya (approval no. 452026, 10 April 2026). Consent for participants under 18 years was obtained from a parent or guardian.

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Conflicts of interest

The authors declare no conflicts of interest.

Author contributions

All authors participated in sample collection. S.E. wrote the manuscript. M.R. performed the statistical analysis. All authors read and approved the final manuscript.

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Data availability

The data supporting the findings of this study are available from the corresponding author on reasonable request.

References

1. Marshall BJ, Warren JR. Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. *Lancet*. 1984 Jun 16;1(8390):1311-1315.
2. Blaser MJ. Helicobacter pylori and gastric diseases. *BMJ*. 1998 May 16;316(7143):1507-1510. doi: 10.1136/bmj.316.7143.1507.
3. Kusters JG, van Vliet AHM, Kuipers EJ. Pathogenesis of Helicobacter pylori infection. *Clin Microbiol Rev*. 2006 Jul;19(3):449-490.
4. Malfertheiner P, Camargo MC, El-Omar E, Liou JM, Peek R, Schulz C, et al. Helicobacter pylori infection. *Nat Rev Dis Primers*. 2023 Apr 20;9(1):19. doi: 10.1038/s41572-023-00431-8.
5. Hooi JKY, Lai WY, Ng WK, Suen MMY, Underwood FE, Tanyingoh D, et al. Global prevalence of Helicobacter pylori infection: systematic review and meta-analysis. *Gastroenterology*. 2017 Aug;153(2):420-429. doi: 10.1053/j.gastro.2017.04.022.
6. Li Y, Choi H, Leung K, Jiang F, Graham DY, Leung WK. Global prevalence of Helicobacter pylori infection between 1980 and 2022: a systematic review and meta-analysis. *Lancet Gastroenterol Hepatol*. 2023 Jun;8(6):553-564. doi: 10.1016/S2468-1253(23)00070-5.
7. Brown LM. Helicobacter pylori: epidemiology and routes of transmission. *Epidemiol Rev*. 2000;22(2):283-297. doi: 10.1093/oxfordjournals.epirev.a018040.
8. Suerbaum S, Michetti P. Helicobacter pylori infection. *N Engl J Med*. 2002 Oct 10;347(15):1175-1186. doi: 10.1056/NEJMra020542.
9. Chen YC, Malfertheiner P, Yu HT, Liou JM, Wu MS, Lin JT, et al. Global prevalence of Helicobacter pylori infection and incidence of gastric cancer between 1980 and 2022. *Gastroenterology*. 2024 Apr;166(4):605-619. doi: 10.1053/j.gastro.2023.12.022.
10. Patel SK, Pratap CB, Jain AK, Gulati AK, Nath G. Updates to the diagnosis and clinical management of Helicobacter pylori infections. *Clin Chem*. 2023 Aug 2;69(8):869-880.
11. Sun Q, Yuan C, Zhou S, Zhang Y. Helicobacter pylori infection: a dynamic process from diagnosis to treatment. *Front Cell Infect Microbiol*. 2023 Oct 12;13:1257817. doi: 10.3389/fcimb.2023.1257817.
12. Gisbert JP, Pajares JM. Stool antigen test for the diagnosis of Helicobacter pylori infection: a systematic review. *Helicobacter*. 2004 Aug;9(4):347-368. doi: 10.1111/j.1083-4383.2004.00235.x.
13. Gisbert JP, de la Morena F, Abraira V. Accuracy of monoclonal stool antigen test for the diagnosis of H. pylori infection: a systematic review and meta-analysis. *Am J Gastroenterol*. 2006 Aug;101(8):1921-1930. doi: 10.1111/j.1572-0241.2006.00668.x.
14. Malfertheiner P, Megraud F, Rokkas T, Gisbert JP, Liou JM, Schulz C, et al. Management of Helicobacter pylori infection: the Maastricht VI/Florence Consensus Report. *Gut*. 2022 Sep;71(9):1724-1762. doi: 10.1136/gutjnl-2022-327745.
15. Chey WD, Howden CW, Moss SF, Morgan DR, Greer KB, Vakil N, et al. ACG Clinical Guideline: Treatment of Helicobacter pylori Infection. *Am J Gastroenterol*. 2024 Sep 1;119(9):1730-1753. doi: 10.14309/ajg.0000000000002968.
16. Atia A, Abuagela MO, Abdulwahed E, Jerbi R. Seroprevalence of Helicobacter pylori infection in Tripoli, Libya. *Mustansiriya Med J*. 2023;22(1):68-70. doi: 10.4103/mj.mj_57_22.

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