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RESEARCH ARTICLE

Severity Correlation Between Helicobacter pylori Infection and Gastritis: A Cross-Sectional, Sex-Stratified Study in a Primary Care Hospital, in Mexico City

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Hernandez Lozada Victor Hugo, Buendia Santiago Luis Ricardo, Julio Cesar Meza Sanchez, Ledesma Santos Juan Martin (2025) Atypical Presentation of Coeliac Disease: An Ascites Revealing a Coeliac Disease in Systemic Lupus Erythematosus: A Case Report World J Case Rep Clin Imag. 2025 June; 4(1)1-3.

Abstract:

Background: *Helicobacter pylori* (*H. pylori*) is a major cause of chronic gastritis and is associated with the progression of gastric pathology. The present study aimed to examine the relationship between gastritis severity and the presence of *H. pylori*, considering sex-based differences, in a clinical population from Mexico City. **Methods**: A cross-sectional study was conducted on 348 patients (139 men and 209 women) who underwent endoscopy in a hospital in Mexico City. Gastritis severity was categorized into four levels (1 = mild, 2 = moderate, 3 = severe, 4 = diffuse). The presence of *H. pylori* was confirmed through standard diagnostic tests. Pearson correlation coefficients were calculated to assess the association between gastritis severity and *H. pylori* infection separately by sex. Chi-square tests were used to evaluate associations between categorical variables. **Results**: Among all patients, 219 (62.9%) tested positive for *H. pylori*. A statistically significant correlation was found between gastritis severity and *H. pylori* positivity in both sexes: women ($r = 0.395$, $p < 0.001$) and men ($r = 0.177$, $p = 0.029$). The chi-square test showed no significant association between sex and *H. pylori* infection ($Chi2 = 1.30$, $p = 0.255$). **Conclusion**: There is a positive correlation between the severity of gastritis and the presence of *H. pylori*, particularly among women. These findings suggest that *H. pylori* infection may play a more pronounced role in the pathogenesis of severe gastritis in female patients.

Keywords:

H. pylori, Gastritis, Cross-Sectional Study, Mexico City, Correlation, Sex Differences

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Introduction:

Helicobacter pylori (*H. pylori*) is a gram-negative bacterium that colonizes the human stomach and is recognized as a key etiological factor in chronic gastritis, peptic ulcers, and gastric cancer. While many infected individuals remain asymptomatic, the bacterium can induce a spectrum of gastric inflammation leading to mucosal damage. Identifying correlations between *H. pylori* infection and the severity of gastritis is crucial for targeted therapeutic interventions, particularly in high-prevalence regions such as Latin America.

This study aims to explore the association between gastritis severity and *H. pylori* infection in a hospital-based sample from Mexico City, and to investigate whether sex influences this relationship.

Materials and Methods:

Study Design and Population

This cross-sectional study included 348 patients who underwent diagnostic endoscopy at a hospital in Mexico City between March 2021 to May 2025. Data were collected from patient records including sex, endoscopic pathology gastritis severity, and *H. pylori* infection status. The study population comprised 139 men and 209 women.

Variables

- Gastritis severity was classified on a 4-point ordinal scale: mild [1], moderate [2], severe [3], and diffuse [4].
- *H. pylori* infection status was recorded as either positive or negative.
- Sex was used for subgroup analysis.

Statistical Analysis:

Pearson correlation coefficients were used to assess the relationship between gastritis severity and *H. pylori* positivity in male and female subgroups. Chi-square tests were conducted to evaluate the association between sex and *H. pylori* infection. All analyses were performed using Python's SciPy and Pandas libraries. A p-value of <0.05 was considered statistically significant.

Results:

Out of the 348 patients, 219 tested positive for *H. pylori* (62.9%), and 129 tested negative (37.1%). Of the men, 93 (66.9%) were positive, while 126 women (60.3%) tested positive.

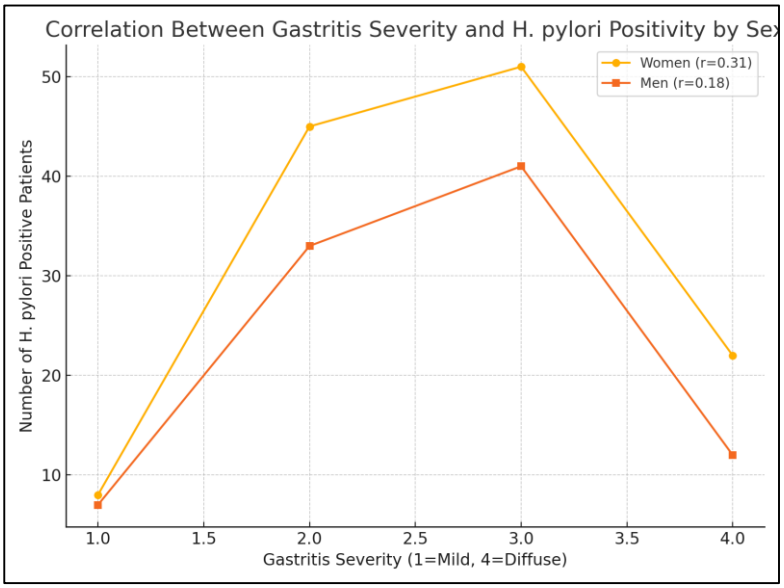
A positive correlation was observed between gastritis severity and *H. pylori* status:

- Women: $r = 0.395$, $p < 0.001$
- Men: $r = 0.177$, $p = 0.029$

The chi-square test for association between sex and H. pylori status yielded:

- $Chi2 = 1.30$, $p = 0.255$

These findings indicate a statistically significant relationship between gastritis severity and *H. pylori* presence in both sexes, with a stronger correlation in women.



Discussion:

The study demonstrates a statistically significant association between increasing gastritis severity and the presence of *H. pylori*, confirming the bacterium's known role in gastric pathology. Interestingly, the stronger correlation in women suggests possible sex-related differences in gastric mucosal response or susceptibility.

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The lack of a significant difference in infection prevalence between sexes supports the idea that severity, rather than prevalence, may be more influenced by host factors such as hormonal or immunological differences.

Limitation:

Limitations of this study include its single-center design and lack of longitudinal follow-up to assess causality.

Conclusion:

This cross-sectional analysis found that H. pylori infection is positively correlated with increased gastritis severity, especially in female patients. These findings support the need for early detection and management of H. pylori in patients with moderate to severe gastritis.

Helicobacter pylori infection is hyperendemic in Mexico, with a prevalence that ranks high on a global scale. Its distribution is heavily influenced by socioeconomic and geographic factors, creating pockets of extremely high prevalence in the southern and rural regions of the country. The infection, primarily acquired in childhood, drives a significant burden of gastroduodenal pathology, from chronic gastritis to peptic ulcer disease and gastric cancer.

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Conflict of Interest: No potential conflict of interest was reported by all the authors. All authors agree to be accountable for all aspects of the work.

Ethical Approval: Not applicable

References

1. Suerbaum, S., & Michetti, P. *Helicobacter pylori* infection. New England Journal of Medicine, 2002;347(15), 1175-1186.
2. Malfertheiner, P., Megraud, F., O'Morain, C. A., *et al.* Management of Helicobacter pylori infection—the Maastricht V/Florence Consensus Report. Gut, 2017;66(1), 6-30.
3. Correa, P., & Houghton, J. Carcinogenesis of Helicobacter pylori. Gastroenterology, 2007;133(2), 659-672.
4. Goh, K.L., & Navaratnam, P. Epidemiology of *Helicobacter pylori* infection and public health implications. Helicobacter, 2011;16(s1), 1-9.