

Epidemiologic Assessment of Intestinal Metaplasia and H. pylori Infection in Shiraz, Iran: A Predictive Model for Metaplasia Occurrence

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Abstract

Background: Classified as a group 1 carcinogen by the World Health Organization, *Helicobacter pylori* (H. pylori) is implicated in the pathogenesis of gastric carcinoma and mucosa-associated lymphoid tissue (MALT) lymphoma. Given the high prevalence of H. pylori infection and its significant association with the development of gastrointestinal malignancies, the urgency to address this health issue has intensified.

Method: This cross-sectional study analyzed pathology reports of gastric samples collected from 2021 to 2023 at Faghihi Hospital in Shiraz, Iran. Chi-Square, Fischer's exact test, and bivariate logistic regression were employed to predict the likelihood of metaplasia and occult bleeding.

Results: The study included 1,954 cases, revealing a significant association between male gender and an increased incidence of metaplasia. Being male was linked to a 259% rise in the odds of testing positive for occult bleeding (OB), while each additional year of age contributed a 2% increase in the likelihood of a positive OB test. The strongest predictor of metaplasia was stomach mucosa inflammation (standardized beta: 1.45), with mild and moderate to severe inflammation elevating the chances of a positive OB test by 42% and 427%, respectively. Moreover, male gender and each additional year of age were positively correlated with a 40% and 3% increase in metaplasia occurrence, respectively. The severity of gastritis emerged as a significant predictor for metaplasia, with occurrences being 8 and 11 times higher for mild and moderate/severe gastritis, respectively.

Conclusion: Despite the availability of H. pylori eradication protocols and non-invasive testing methods in Iran and globally, the prevalence of active H. pylori infection and severe gastritis remains substantial. This study underscores the significant risk of chronic iron deficiency anemia associated with gastritis and occult bleeding. Notably, gastritis severity is a critical, modifiable factor influencing metaplasia development in patients.

Keywords: H. pylori, Intestinal metaplasia, Gastric cancer

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