

Epidemiology & Public Health 2020: Investigation and Analysis of *Helicobacter Pylori* Infection among Adults in Zhongwei District of Ningxia**Tian Yonggang**

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Abstract

Objective: To investigate the *Helicobacter pylori* infection and its related risk factors in adult population in Zhongwei area of Ningxia.

Methods: Hp detection was performed on 730 adults using the ¹⁴C-urea breath test. The negative test value is <100 dpm and the positive test value is ≥100 dpm. Subjects who used antibiotics, proton pump inhibitors, and other Hp-sensitive drugs within 1 month were excluded. *H. pylori* is one of the most widely recognized bacterial contaminations in people, and its revelation 20 years prior modified the analysis and treatment of gastroduodenal malady. *H. pylori* infection represents a key factor in the etiology of various gastrointestinal diseases, ranging from chronic active gastritis without clinical symptoms to peptic ulceration, gastric adenocarcinoma, and gastric mucosa-associated lymphoid tissue lymphoma. Disease outcome is the result of the complex interplay between the host and the bacterium. This audit thinks about current information regarding the study of disease transmission and transmission of *H. pylori*, just as the job of this irresistible specialist in the pathogenesis of upper gastrointestinal tract infection. Demonstrative methodologies, signs for treatment, and proportions of helpful adequacy are audited. Host immune gene polymorphisms and gastric acid secretion largely determine the bacterium's ability to colonize a specific gastric niche. Bacterial virulence factors such as the cytotoxin-associated gene pathogenicity island-encoded protein CagA and the vacuolating cytotoxin VacA aid in this colonization of the

gastric mucosa and subsequently seem to modulate the host's immune system. This review focuses on the microbiological, clinical, immunological, and biochemical aspects of the pathogenesis of *H. pylori*. *H. pylori* infection is probably the most important factor that has been associated with the development of gastric cancers in human populations. Since its isolation in 1982, evidence for its substantial casual role in the pathogenesis of gastric cancer has substantially increased. *H. pylori* is a gram-negative bacillus that colonizes the stomach and is probably the most common chronic bacterial infection worldwide. Evidence suggests that communities with a high prevalence of stomach cancer commonly have a high rate of infection with *H. pylori* infection and it has been suggested that the observed decrease in the incidence of gastric cancer parallels the decreasing rate of the prevalence of *H. pylori* infection, especially in the developed countries. In adjusted analysis the level of education of the father was inversely associated with the infection, whereas number of siblings and attendance to day-care centre in childhood were directly associated with it. Non-white skin colour remained significantly associated with increased prevalence even after allowing for past and current socio-economic characteristics, age and sex. Compared to non-symptomatic individuals, those reporting dyspeptic symptoms presented a higher prevalence of the infection even after allowing for current and past socio-economic conditions, ethnicity, age, and sex. Currently, the *H. pylori* infection has posed a serious challenge to public health in China. Even though accumulating evidence has illustrated the

incidence of *H. pylori* in many regions, few large-scale cross-sectional studies recruiting asymptomatic subjects have been carried out in average-risk community. Jidong community is a relatively enclosed area in Hebei Province. Local residents are mainly composed of employees working for the Jidong Oilfield Inc. and their family members. Within this community, there is considerable homogeneity concerning the high socio-economic levels, gradual population shifts and limited communication with the people outside of this community. On the other hand, in the largest study with the most powerful methodology on the subject, a prospective cohort of 1526 Japanese patients with non cancerous gastric and duodenal pathologies was conducted by Uemura et al. which demonstrated that patients who were positive for *H.pylori* infection in the study initiation was significantly more likely to develop gastric cancers (mean follow up of 7.8 years). The Middle East is an intermediate prevalent region regarding stomach cancers, but the rate of *H.pylori* infection in this region is high. Nevertheless, several risk factors associated with this infection have been identified as predictors of gastric cancers in this region. There are several studies investigating *H.pylori* infection and its surrounding issues by Iranian or Middle Eastern researchers. Unfortunately, in the current literature, there is not a comprehensive literature review representing our evidence-based knowledge on the prevalence of *H.pylori* infection and its potential associations with dyspeptic symptoms in Iran and in the Middle Eastern countries. In this literature review, we aimed to evaluate the situation of Iran and the Middle Eastern countries regarding *H.pylori*- related gastric diseases.

Results: (1) The HP infection rate was 45.34% (331/730) in the subjects; the male Hp infection rate was 50.91%, and the female Hp infection rate was 41.98%. There was no significant difference

between male and female ($P < 0.05$). Compared with Hp infection in different age groups, the infection rate in the old age was 58.14%, followed by the infection rate in the elderly patients was 50.00%; (2) There were significant differences in Hp infection rates between Hui nationality and Han nationality in different sociological characteristics ($P < 0.05$). The higher the education level and the non-farm payrolls, the lower the Hp infection rate. The difference between the two was statistically significant. ($P < 0.05$); (3) There were differences between the two groups ($P < 0.05$); (3) In terms of different eating habits and lifestyles, there was no statistically significant difference ($P < 0.05$) between those who had no or accidental smoking, drinking and sharing of tableware, and those who regularly smoked, drank, and shared tableware, while raw vegetables, fruits, and tea were eaten. There was no significant difference in frequency ($P > 0.05$). There was no significant difference between the drinking water and the bottled water ($P > 0.05$); (4) There was a statistically significant difference between those who had chronic gastritis, peptic ulcer, chronic obstructive pulmonary disease, and coronary heart disease and those who did not. ($P < 0.05$). *H. pylori* infection was diagnosed in 62.0% (329/530) of patients screened. There was no statistically significant difference in sex and age related distribution (<50 year age group and >50 year age group) of *H. pylori* infection. However, a statistically significant association of *H. pylori* infection with the presence of endoscopic abnormalities, peptic ulcer, and dysplasia/cancer was seen.

Conclusion: The *Helicobacter Pylori* infection rate in the adult population of Zhongwei area in Ningxia is within the national infection range. Good eating habits, lifestyle and education level have certain influence on Hp infection rate.