

Helicobacter Pylori-Associated Iron-Deficiency Anemia and Interleukins Effect

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Abstract

Helicobacter pylori (*H. pylori*) is a highly prevalence microbial infection, that acts as an iron stressor in susceptible individuals the relationship between ferritin and cytokine levels in individuals infected with *H. pylori* remains controversial. Based on serology testing for anti-*H. pylori* IgG, participants (70 seropositive and 70 seronegative aged 30-60 years) were enrolled. Serum iron profiles including iron, ferritin, and total iron-binding capacity, were measured. IL-1 β and IL-6 serum levels were compared. The mean value of interleukin 1beta (IL-1 β) level of patients and controls revealed that *H. pylori* patients had a significantly higher at ($P < 0.001$) mean of (IL-1 β) when compared to the controls, as shown in this study there is positive correlation between gastric interleukin 1beta (IL-1 β) and iron deficiency anemia (IDA) blood parameters observed in resent study could be due to the powerful capability of IL-1 β in inhibiting gastric acid secretion. The mean value of Interleukin-6 (IL-6)) level of patients and controls revealed that *H. pylori* patients had a significantly higher at ($P < 0.001$) mean of (IL-6) when compared to the controls.

Keywords: *Helicobacter pylori*, iron deficiency anemia, interleukins.

Introduction

Helicobacter pylori is a spiral-shaped, Gram-negative bacterium that is responsible for infections affecting more than half of the world's population and is currently known to play a causative role in the pathogenesis of chronic gastritis, peptic ulcer diseases, gastric cancer and mucosa-associated lymphoid tissue lymphoma⁽¹⁾. *H. pylori* is recognized as the most common cause of chronic active gastritis and is also an important pathogenic factor in peptic ulcer disease. The outcome of infection is thought to be related to severity and distribution of *H. pylori*-related inflammation⁽²⁾.

Biological factors that affect clinical outcome in *H. pylori* infection have been widely studied. In addition to bacterial virulence determinants in *H. pylori* strains, immunological factors in the host are likely to play a crucial role in different clinical expression of *H. pylori*-infection⁽³⁾. *H. pylori* infection first induces neutrophilic gastritis, which progresses to chronic gastritis in most people. Activation and migration of these inflammatory cells into the gastric mucosa is related to increased production of proinflammatory cytokines, including IL-8, IL-1 β , TNF- α and IL-6 which are believed to contribute to maintaining the gastric inflammation and causing epithelial cell damage⁽⁴⁾. The inflammation that may happen in the stomach and proinflammatory cytokines lead to anemia, Anemia induced by digestive diseases refers to anemia due to iron deficiency. Conventional gastrointestinal diagnostic workup fails to establish the cause of iron deficiency in about one third of patients⁽⁵⁾. Recent meta-analyses indicates *H. pylori* eradication results in improved iron status of children and adults with ID/IDA compared with iron therapy alone, this suggests underlying changes in gastric inflammation,

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