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Gastric histopathological severity and serum TNF alpha and IL-1 beta cytokine expression among a dyspeptic population attending the endoscopy clinic at Colombo South Teaching Hospital

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Background: Inflammation in the gastric mucosa is a complex biological response which results from different stimuli such as pathogens, damaged cells, or irritants. While *Helicobacter pylori* (*H. pylori*) has been recognized as an important gastric pathogen causing gastric inflammation and recent studies suggested that the incidence of *H. pylori* is declining. The chronic gastric mucosal inflammation induces several histopathological changes in the gastric epithelium and maintains a constant release of cytokines.

Objective: To investigate the association between severity of histopathological changes and serum cytokine (IL-1 β and TNF- α) concentrations in a dyspeptic population based on the *H. pylori* status.

Method: A total of hundred dyspeptic patients were enrolled for the study. State of the *H. pylori* were assessed either by In-house Biopsy Urease Test (IBUT) or histology. Severity of gastric mucosal inflammation were determined according to the updated Sydney classification system. Serum concentration of cytokine IL-1 β and TNF- α were measured using ELISA technique.

Results: Study group had a mean age of 49 years. Fifty three were males and forty seven were females. *H. pylori* was positive in 18 patients out of 100. The majority of the patients had mild chronic gastritis (66%), 26% had active chronic gastritis with moderate severity, and 8% of patients had a normal gastric pathology. Circulating levels of IL-1 β and TNF- α in *H. pylori* positive group were 2.3 \pm 0.3 pg/ml and 5.9 \pm 2.0 pg/ml respectively, while *H. pylori* negative group had 2.6 \pm 1.3 pg/ml and 6.1 \pm 2.5 pg/ml respectively. However, there was no statistically significant differences in the serum levels of these cytokines or the severity of histopathological changes in the gastric mucosa with respect to the presence or absence of *H. pylori* ($p > 0.05$).

Conclusion: Serum cytokine levels of IL-1 β and TNF- α did not show any correlation with histopathological changes in gastric mucosa and the presence of *H. pylori* in the present study.

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