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Can We Consider H. Pylori as A Risk Factor for Acute Coronary Syndrome? A Proposal Study for A Sample of Egyptian **Population**

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Abstract: Helicobacter pylori (H. pylori) is a Gram negative spiral bacterium which colonizes gastric mucosa of nearly half of human populationwas described by Marshall and Warren in 1984 . A characteristic feature of H. Pylori infection is an excessive inflammatory response. The majority of H. pylori infections remain asymptomatic. However, still it leads to the development of histological gastritis with the recruitment of immune cells. About 10% of infected subjects develop symptomatic gastritis, erosions or peptic ulcer. Gastric cancer is the most severe consequence of H. pylori infection. Recently, a possible association between chronic infections with H. pylori and extragastric disorders - including coronary heart disease, has been intensively investigated. Here we will shed light on a possible association between chronic H.Pylori infection and one of the commonest Heart disease; Acute Coronary Syndrome (ACS).

Keywords: H.Pylori, ACS, Heart diseases, stomach.

1 Introduction

Coronary artery diseases (CADs) are leading cause of mortality and morbidity in the modern world, a major public health problem. Acute coronary syndrome is a crucial stage of the clinical manifestation of CAD and results in substantial morbidity and mortality [1-10]. However, research in ACS has propelled the field from one driven by anecdote to one guided by scientific evidence. For instance, pioneer findings identified the relationship of chronic infections influence on ACS and CADs [10-19]. The role of virus and bacterial pathogens including *helicobacter pylori* (*H.pylori*) are now considered as factors implicated in development of ACS [20-25].Recently, possible association between H.pylori infection and extragastric disorders has been suggested. Knowledge on the etiology of atherosclerosis together with current findings in the area of H. pylori infections constitute the background for the newly proposed hypothesis that those two processes may be related. Many research studies confirm the indirect association between the prevalence of H. pylori and the occurrence of CHD. According to majority of findings the involvement of H. pylori in this process is based on the chronic inflammation which might facilitate the CHD related-pathologies. It needs to be elucidated, if the infection initiates or just accelerates the formation of atheromatous plaque. *H.pylori* is the most common chronic bacterial infection of the human upper gastrointestinal tract. Recent evidence from Taiwan's national retrospective cohort study identified a greater relationship between *H.pylori* and ACS. However, a higher percentage of 91.7% seropositive *H.pylori* antibodies identified among Egyptian population [26-45]. Similarly, a national representative survey in Egypt found an adjusted overall prevalence of CAD of 8.3% [9]. Further investigating this among Egyptian sample may provide an interesting insight to clarify the relationship between *H.pylori* and ACS. Therefore, we aimed to investigate the correlation between ACS and chronic infection of *H.pylori* in a sample of Egyptian population.

2 Patients & Methods

100 patients presented with ACS with Positive H.Pylori test both by Eliza; IgM and IgGand Stool antigenicity will be enrolled to the current study.
Smearing from infected coronaries or even thrombi aspirates will be examined for detection of Gram negative H.Pylori bacterium.
Another 20 patients with ACS without H.Pyloriinfection, their coronaries 'thrombi will be examined for presence of other bacteria (Control group).

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3 Goals

1-If there is a direct correlation between Chronic H.Pylori infection and ACS (Dysfunction of coronary vascular endothelium by H.Pylori)
2-If there is cross antigenicity that make ACS related-chronic H.Pylori infection
3-Considering remodeling of risk factors related-ACS in the presence of H.Pylori.

4 Conclusions

Since classic risk factors do not explain all cases of ACSit has been suggested that chronic infections andeven commensal microorganisms may affect thedevelopment or maintenance of ACS. Among variouspathogens possibly involved in atherogenesis H. pyloriis particularly interesting, since it induces chronic longterminfection within gastric epithelium which leadsto not only local but systemic inflammation. Recentknowledge on the pathogenesis of atherosclerosistogether with current findings in the field of H. pylorirelated diseases constitute the background for thenewly proposed hypothesis that those two processesmay berelated, cross antigenicity or remodeling or risk factors would be new risk factors for ACS.

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