Abstract:

Helicobacter pylori is the most widespread chronic bacterial agent in humans and is well recognized for its association with ulcer disease and gastric cancer, with both representing major global health and socioeconomic issues. Given the high level of adaptation and the coevolution of this bacterium with its human host, a thorough and multidirectional view of the specific microbiological characteristics of this infection as well as the host physiology is needed in order to develop novel means of prevention of therapy. This review aims to pinpoint some of these potentially important angles, which have to be considered mutually when studying H. pylori's pathogenicity. The host's biological changes due to the virulence factors are a valuable pillar of H. pylori research as are the mechanisms by which bacteria provoke these changes. In this context, necessary adhesion molecules and significant virulence factors of H. pylori are discussed. Moreover, metabolism of the bacteria, one of the most important aspects for a better understanding of bacterial physiology and consequently possible therapeutic and prophylactic strategies, is addressed. On the other hand, we discuss the recent experimental proofs of the “hygiene hypothesis” in correlation with Helicobacter's infection, which adds another aspect of complexity to this infection.