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The Th17 response triggered by Helicobacter pylori involves the cytokine BAFF

Marina de Bernard

University of Padova, Italy

Abstract

Helicobacter pylori (HP) is the etiological agent of many gastric disorders such as chronic gastritis, ulcers, gastric cancer and gastric MALT lymphoma. The bacterium is generally considered to induce a Th1 host response; however, other pro-inflammatory cytokines, such as IL-17 and TNF-α are involved. Different studies reveal that the cytokine BAFF (a trophic factor for B-lymphocytes) plays a pivotal role in the induction of the Th17 response. However, the fact that this cytokine might be involved also in the Th17 response triggered by HP has never been addressed. Therefore, the aim of our study was to verify whether HP promotes the accumulation of BAFF in the gastric mucosa of the host and whether the cytokine triggers the development of the Th17 immune profile. We demonstrated that the gastric mucosa of patients with HP-induced chronic gastritis, a condition that represents a risk for the development of gastric cancer, is enriched in BAFF and the expression profile of the cytokine is identical to that of IL-17. The expression of both the two cytokines strictly depends on the presence of the bacterium: indeed, the eradication of HP results in their significant down-modulation. We found that macrophages are the main source of BAFF in vivo and the latter promotes the accumulation of pro-Th17 cytokines by acting on monocytes, one of the most abundant infiltrating cells in gastritis.

Collectively, our data demonstrate the existence of a BAFF/Th17 axis in the HP-associated gastric disorders.

Biography

Graduated in Biology with honors at the University of Padova, Marina de Bernard has carried out her researches mainly in this Institution, with stages at the Universities of Geneva at the Universitè Libre in Bruxelles and at the EMBL in Heidelberg. Since 2010, she is Associate Professor of General Pathology at the Science Faculty of the University of Padova. She is group leader of the “Host-pathogen interaction” research unit at the Venetian Institute of Molecular Medicine, in Padova, where she studies the immunomodulatory activity of factors produced by pathogenic bacteria. She has published 65 papers in peer-reviewed journals.