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Clinical

T-bet$^+$ Cells Polarization in Patients Infected with *Helicobacter pylori* Increase the Risk of Peptic Ulcer Development

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Background

Peptic ulcer disease (PUD) is a common disease worldwide moreover known as stomach ulcer or peptic ulcer. Increased the number of T CD4$^+$ helper cells in response to gastric infection by Helicobacter pylori (*H. pylori*) play an important role in the development of PUD. The aim of this study was to determine the frequency of T-bet$^+$ cells in *H. pylori*-infection, its interaction with Th17/Treg cells and its association with the clinical consequences of the infection.

Methods

A total of 63 patients with PUD, 89 patients with gastritis and 48 *H. pylori*-negative subjects were enrolled in this study. The number of T-bet$^+$ cells were determined by immunohistochemistry.

Results

The numbers of T-bet$^+$ cells and INF-γ expression in infected patients were significantly higher than uninfected. Moreover, the number of T-bet$^+$ cells and INF-γ expression in infected patients with PUD were significantly higher than infected patients with gastritis. Additionally, the number of T-bet$^+$ cells and INF-γ expression were found to be inversely correlated with degree of *H. pylori* density and chronic inflammation score (CIS) in infected patients with gastritis disease, but this correlation was positive in the infected patients with PUD. The number of T-bet$^+$ cells was found to be positively correlated with the number of Th17 cells and inversely correlated with the number of Treg cells in infected patients with gastritis and PUD.

Conclusion

Abnormal hyper-activation of T-bet$^+$ cells during *H. pylori*-infection may lead to tissue damage caused by immunopathologic reactions.