Circulating levels of interleukin (IL)-١٢ and IL-١٣ in Helicobacter pylori-infected patients, and their associations with bacterial CagA and VacA virulence factors.

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Source

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Abstract

OBJECTIVE:

The aim of this study was to determine the association of the Helicobacter pylori virulence factors, cytotoxin-associated gene A (CagA) and vacuolating cytotoxin A (VacA) antibodies, with serum levels of interleukin (IL)-١٢ and IL-١٣ in H. pylori-infected duodenal ulcer (DU) patients and H. pylori-infected asymptomatic (AS) carriers in order to elucidate any correlation between them.

METHODS:

A total of ٦٧ DU patients, ٤٨ AS individuals, and ٢٦ healthy H. pylori-negative subjects were enrolled in this study. Serum concentrations of IL-١٢ and IL-١٣ were determined by enzyme-linked immunosorbent assay (ELISA) method. Patient sera were tested by Western blot method to determine the presence of serum antibodies to bacterial virulence antigens p١٢٠ (CagA) and p٩٥ (VacA). Serum concentrations of IL-١٢ and IL-١٣ were compared in ٩ groups, including ٤ AS phenotypes ($CagA^+VacA^+$, $CagA^+VacA^-$, $CagA^-VacA^+$, $CagA^-VacA^-$), ٤ DU phenotypes ($CagA^+VacA^+$, $CagA^+VacA^-$, $CagA^-VacA^+$, $CagA^-VacA^-$), and ١ control group.

RESULTS:

The results revealed that DU patients positive for CagA, independent of the anti-VacA antibody status, showed drastically elevated levels of IL-١٢ (٢٥١ ± ٤٣ pg/ml) when compared with the other groups ($p = ٠.٠٠٠١$). No significant difference was found between groups regarding levels of IL-١٣ ($p > ٠.٠٥$).

CONCLUSIONS:

Our findings indicate that in the DU group, the serum concentrations of IL-١٢ but not of IL-١٣ were influenced by bacterial CagA, independent of the VacA status, suggesting that high IL-١٢ levels may contribute to susceptibility to DU in CagA-positive individuals. These findings could possibly be considered to improve the predictive or prognostic values of inflammatory cytokines for DU, and also to design possible novel therapeutic approaches.