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Crohn's disease and upregulated IL-12R?2

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Keywords

Crohn's disease, IL-12R, gastrointestinal inflammatory disease

Context

Much evidence indicates that activated Th1 cells play an important role in the pathogenesis of tissue damage in Crohn's disease (CD). Interleukin (IL)-12 is known to direct Th cells toward a Th1 pathway. Th1 cells express both the ?1 and the ?2 subunits of the IL-12 receptor (IL-12R). IL-12R?2 chain is the signaling component of IL-12R, and it directly interacts with STAT4. Knowing that neutralization of IL-12 leads to complete recovery of an experimental colitis model resembling CD, the authors studied IL-12R expression in human gastrointestinal mucosa of patients with various gastrointestinal diseases, including CD.

Significant findings

Expression of IL-12R?2 mRNA expression was increased in active CD, *Helicobacter pylori* (HP)-associated gastritis, and salmonella colitis when compared with expression in inactive CD, ulcerative colitis, noninflammatory controls, and celiac disease. In contrast, IL-12R?1 expression was identical in these gastrointestinal diseases. In CD, IL-12R?2 expression strictly correlated with tyrosine phosphorylation of STAT4 and interferon (IFN)-? expression. Finally, IL-12 enhanced IL-12R?2 mRNA expression in normal lamina propria mononuclear cells. Taken together, these results suggest that an increase of IL-12R?2 mRNA expression may contribute to the polarization of the Th1-type cytokine profile in CD.

Comments

These results suggest that an increase of IL-12R?2 expression induced by IL-12 may be responsible for the maintenance of the inflammatory process in CD. Moreover, the increase of IL-12R?2 expression in bacterial gastrointestinal disease such as HP-associated gastritis or salmonella colitis suggests that

bacteria and bacterial components may contribute to modulation of IL-12R?2 levels. This observation adds further support to a link between inflammatory diseases and bacterial infection.

Methods

PCR

References

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