

URTICARIA, ANGIOEDEMA

DECREASED INTERLEUKIN-35 SERUM LEVELS IN PATIENTS WITH CHRONIC SPONTANEOUS URTICARIAL

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Background: IL-35 is a newly anti-inflammatory cytokine which belong to the IL-12 family. Mast cells, as one of the major effector cells in the immune response system, play important roles in the pathogenesis of chronic spontaneous urticarial (CSU).

Objective: The aim of our study is to explore the role of IL-35 in the pathogenesis of CSU.

Methods: In this study, the serum levels of IL-35 in patients with CSU and controls were detected by sandwich enzyme-linked immunosorbent assay (ELISA). The effects of IL-35 on cell proliferation, cytokine expression and histamine release in human mast cell line (HMC1) were investigated by CCK8 or RT-PCR. The phosphorylation of ERK1/2, p38 and JNK1/2, in PMA and A23187 induced HMC-1 cells were detected by Western Blot.

Results: We found that the serum IL-35 levels were significantly decreased in patients with CSU compared with those in healthy controls and CSU patients after conventional treatment. Moreover, IL-35 significantly inhibited the proliferation of HMC-1 cells stimulated by PMA and A23187. IL-35 also down-regulates the mRNA expression of IL-6 and IL-17 in activated HMC-1. Furthermore, IL-35 markedly inhibited the phosphorylation of ERK1/2, p38 and JNK1/2, in PMA and A23187 induced HMC-1 cells.

Conclusions: This study provides first observations on the association of IL-35 and CSU, and showed the inhibitory and anti-inflammatory effect of IL-35 on activated HMC-1 cells. We suggest that IL35 may play a role in the pathogenesis of CSU.