Both type 2 allergen-specific CD4 and CD8 T lymphocytes are decreased in asthmatic children receiving immunotherapy

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摘要

Abstract

Allergen-specific immunotherapy (IT) has been used for the treatment of atopic diseases since the turn of this century. The precise working mechanisms, however, remain to be clarified. The aim of this study was to investigate the role of particular subsets of allergen-specific T cells in the non-atopic individuals, untreated asthmatic children and the asthmatic children receiving immunotherapy. We collected peripheral blood from 16 untreated asthmatic children and 17 asthmatic children receiving immunotherapy over one and half years. All the patients were sensitive to mite allergen . Peripheral blood mononuclear cells (PBMC) were isolated and, in vitro , stimulated with crude mite extract to enrich the mite- specific T-cell population. After 14 days, the enriched mite-specific T cells were stimulated with phorbol- 12-myristate-13-acetate (PMA) and ionomycin for intracellular detection of cytokines such as IFN-gamma, IL-4 in CD4(+) and CD8(+) T lymphocytes. The data here demonstrated that the levels of mite-specific IgG4 and IgA increased significantly in asthmatic children after immunotherapy. In addition, both IL-4 expressing CD4(+) and CD8(+) T cells were significantly lower in asthmatic children after immunotherapy compared with those of before treatment and the normal control ($p < 0.05$). In contrast, the frequency of IFN-gamma expressing CD4 (+) and CD8(+) T cells did not significantly differ between untreated and SIT -treated groups. All these data suggested that decreased Type 2 CD4(+) and CD8(+) T cells might be closely correlated with the regulatory mechanisms of immunotherapy.