Alterations of circulating B cells and follicular helper T cell subsets with low Ig M level in active non-segmental vitiligo

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Abstract

Although vitiligo is a multifactorial skin disease, accumulating data have strongly indicated that melanocytes are ultimately destroyed by a cascade of autoimmune responses. Contrast to widely accepted T cell-based cellular immunity, the role of B cell-based humoral immunity in vitiligo remains elusive. The present study investigated the changes of distributions and fucntions of circulating B cells and Tfh cells in patients with active non-segmental vitiligo. Compared with HC, the antibody secreting B cells in circulation were statistically increased along with high positive ratio of melanocyte specific antibodies in sera of patients. Meanwhile, the proportion of circulating Tfh cells was significantly elevated concomitant with increased Tfh17 cells and reduced Tfh2 subgroup as well as unchanged Tfh1 cells. The levels of IL-10 and IgM were greatly decreased while no statistical changes were found in IL-21, total IgG, IgE and IgA concentrations in sera of patients. Besides, vitiligo-derived circulating Tfh cells presented enhancement in inducing IgG production. Our study shed light on B cell-based humoral immunity in the pathogenesis of vitiligo and indicated that altered Tfh cells favored the differentiation of antibody secreting B cells and production of melanocyte-specific autoantibodies that may contribute to further progression of vitiligo.

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