Role of the frequency of blood CD4+ CXCR5+ CCR6+ T cells in autoimmunity in patients with Sjögren's syndrome

ABSTRACT

The blood CXCR5+ CD4+ T cells, known as "circulating" Tfh,have been shown to efficiently induce naïve B cells to produce immunoglobulins. They play an important role in certain autoimmune diseases.In the present study, we show for the first time that the frequency of CD4+ CRCR5+ T cells is increased in pSS patients and positively correlated with autoantibodies in the blood. The concentration of Th17-like subsets (CD4+ CXCR5+ CCR6+) in pSS patients was found to be significantly higher thanin healthy controls. Functional assays showed that activated Th17-like subtypes in the blood display the key features of Tfh cells, including invariably coexpressed PD-1, ICOS, CD40L, and IL-21.Th17 subsets were found to highly express Bcl-6 protein and Th1 and Th2 were not. Bcl-6 is believed to be a master transforming factor for Tfh cell differentiation and facilitate B cell proliferation and somatic hypermutation within the germinal center. These data indicate that Th17 subsets of CD4+ CXCR5+ T cells in the blood may participate in the antibody-related immune responses and that high frequency of CD4+ CXCR5+ CCR6+ Tfh cells in blood may be suitablebiomarkers for the evaluation of the active immune stage of SS patients.It might provide insights into the pathogenesis and perhaps help researchers identify novel therapeutic targets for SS.

1. Introduction:

Primary Sjögren's syndrome (pSS) affects almost 0.5% of the general population

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