SUMMARY

The immunopathogenesis of pSS and SLE are highly complex and are associated with both the adaptive and innate branches of the immune system. Pronounced B-cell hyperactivity appears to be the hallmark of diseases. T_{FH} cells have a crucial role in regulating immune responses within secondary lymphoid follicles by directing B cell differentiation toward memory B cells and plasma cells. Since abnormal humoral responses are key features in both diseases, the aim of this study was to profile the pathological connection between peripheral T_{FH} cells and B cells. We observed higher percentages of naive B cells in both diseases, while non-switched and switched memory B cells showed decreased frequencies. The proportions of DN B cells and plasmablasts were elevated in SLE and decreased in pSS. The percentages of transitional B cells and mature-naive B cells were higher in SLE. Patients with more severe disease course had elevated ratio of T_{FH}-like cells and increased IL-21 production. Moreover, expansion of T_{FH}-like cells correlated positively with parameters related to antibody secretion, including serum IgG, ICs and autoantibodies. Our observations on the profound expansion of circulating T_{FH}-like cells and their IL-21 production along with the characteristic aberrant peripheral B cell distribution in both pSS and SLE indicate the prominent role of T_{FH} cell in the regulation of B cell selection. Furthermore, we examined the composition of lymphocyte infiltration in labial salivary gland (LSG) biopsies from patients with pSS, focusing on the presence of B and T_{FH} cells. T_{FH} cell markers are predominantly occurred in more organized lymphocyte infiltrates with higher focus scores. Interestingly, upon assessing the clinical data of patients retrospectively, we found association between the presence of T_{FH} cells in LSGs at onset and the severity of clinical course. Our results suggest that T_{FH} cells play important role in the generation of autoreactive B cells in glandular infiltrations and may contribute to the subsequent systemic manifestations as well.