CONNECTIVE TISSUE DISEASES

Long-lived plasma cells in Sjögren's syndrome—a salivary survival niche?

Plasma cells with characteristics of long-lived cells, and factors necessary for long term survival, are present in the salivary glands of patients with primary Sjögren's syndrome (pSS), report Ewa Szyszkó *et al.* "Survival of plasma cells in the target organ would affect the production and presence of autoantibodies in pSS," says Szyszkó, adding that further understanding of the long-lived plasma cell subset—known to be resistant to immunosuppressive therapy—might improve treatment of this disease.

Pathology in pSS manifests primarily in the salivary glands, where infiltrating mononuclear cells gradually replace the secretory machinery. Activated, autoreactive T cells predominate in mild lesions, but autoreactive B cells and plasma cells outnumber them in severe lesions. Many patients with pSS are treated only to relieve the discomfort caused by loss of glandular function, but others receive immunosuppressive therapy in a bid to halt

serious, extraglandular manifestations; this effort could be undermined by long-lived plasma cells, which are resistant to B-cell depletion therapies.

Szyszkó and colleagues investigated the expression of the molecules necessary for persistence of long-lived plasma cells on sections of minor salivary gland tissue from patients with pSS. Secretory epithelia expressed factors including interleukin 6 and CXC chemokine ligand 12 (CXCL12), and plasma cells expressing markers of survival congregated around them. Unexpectedly, when infiltrating adipocytes—associated with hypertrophy—were present, they also expressed CXCL12 and were likewise surrounded by plasma cells. The most severely affected samples housed the most phenotypically long-lived plasma cells, suggesting that targeting this survival niche could be of therapeutic benefit.

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Plasma cells (brown) accumulate around adipocytes expressing CXCL12 (blue) in salivary gland tissue of a patient with pSS. Provided courtesy of E. A. Szyszkó.

Original article Szyszkó, E. A. *et al.* Salivary glands of primary Sjögren's syndrome patients express factors vital for plasma cell survival. *Arthritis Res. Ther.* doi:10.1186/ar3220

Further reading Hiepe, F. *et al.* Long-lived autoreactive plasma cells drive persistent autoimmune inflammation. *Nat. Rev. Rheumatol.* **7**, 170–179 (2011)