THU0243 CAN THE INCREASE OF LOBULES / FOCI RATIO BE HISTOPATHOLOGICAL EVIDENCE OF PRIMARY SJÖGREN'S SYNDROME

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Background: Minor salivary gland biopsy from the lip region is commonly used for primary Sjögren's syndrome (SS) diagnosis. It is accepted that changes of histopathology is the most important component of diagnostic criteria. In this study, we analyzed the relationship between histopathological changes and laboratory findings/clinical features in SS patients and control group.

Objectives: The aim of this study was to determine the histopathological changes in minor salivary tissue for SS diagnosis

Methods: A total of 69 minor salivary gland biopsies (29 Sjögren's syndrome and 40 controls) were included in the study. Biopsies were evaluated by a blind pathologist unaware of the diagnosis. Histopathological findings were noted as ductal dilatation, fat tissue percentage (<10% or >10%), acinar atrophy, ductal/ acinar ratio and lobules/foci ratio. It was evaluated whether there was a relationship between histological changes and age, gender, ANA, anti-SSA, anti-SSB, RF and Chisholm scores.

Results: The lobules/foci ratio of patients with Sjögren's syndrome was significantly higher than the control group ($p<0.001$). The cutoff value of the lobules/foci ratio for SS diagnosis was 0.8. Furthermore, there was a significant correlations between the lobules/foci ratio greater than 0.8 and antibodies (ANA, RF, anti-Ro) positivity and Chisholm score ($p<0.01$). Other histopathological findings such as ductal dilatation, fat tissue percentage, acinar atrophy, and ductal/atherine ratio do not distinguish SS from non-SS.

Conclusions: The results of this study revealed that only the lobules/foci ratio from histopathological changes has a strong relation with SS diagnosis. It can be important for pathologists to distinguish SS.

Disclosure of Interest: None declared

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THU0244 THE ROLE OF STEM CELL-LIKE MEMORY T CELLS IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: The stem cell-like memory T (Tscm) cell, a special subset of memory T cell, has a potential to self-renew and differentiate into wide spectrum of T cells¹. However, the role of Tscm in autoimmune disease such as systemic lupus erythematosus (SLE) remains to be unknown.

Objectives: To investigate the levels of Tscm cells in SLE patients compared with healthy controls and to understand the functional characteristics of the Tscm cells from SLE patients.

Methods: Fifty two SLE patients and 57 healthy controls (HCs) were enrolled. To detect Tscm cells which are designated as CD3⁺ CD4⁺/CD8⁺ CD45RO⁺ CCR7⁺ CD62L⁺ CD45RA⁺ CD27⁺ CD28⁺ CD127⁺ CD122⁺ CD95^{hi}, flow cytometry was performed after staining peripheral blood mononuclear cells (PBMCs, 1×10^7 cells/mL) with fluorescence-conjugated antibodies. To ascertain the differentiation ability of Tscm cells, different subsets of T cells including naïve-like T, central memory T, effector memory T and follicular helper T cells (Tfh) were evaluated after stimulating the isolated Tscm cells with anti-CD3/CD28 antibodies for 6 days. To investigate the function of the Tfh cells derived from Tscm cells, secreted IgG antibodies were measured from the supernatants by ELISA after incubating Tfh-containing differentiated Tscm cells with autologous B cells and SEB for 6 days.

Results: Among the naïve-like T (CD3⁺ CD4⁺ CCR7⁺ CD45RO⁺ CD45RA⁺ CD62L⁺) cells, the proportion of CD4⁺ and CD8⁺ Tscm cells was significantly higher in SLE patients than HCs (for CD4⁺ T cells, 2.29 ± 0.22 (SLE) vs 1.11 ± 0.13

(HC), $p\text{-value} \leq 0.001$; for CD8⁺ T cells, 5.36 ± 0.63 (SLE) vs 3.41 ± 0.44 (HC), $p\text{-value} = 0.013$). Among the total CD4⁺ T cells, the ratio of Tscm to CD4⁺ T cells was higher in SLE patients than in healthy controls (0.63 ± 0.10 (SLE) vs 0.40 ± 0.04 (HC), $p\text{-value} = 0.035$) (Fig 1). SLE and HC Tscm cells could differentiate into naïve-like T, central memory T, effector memory T cells and renewed themselves in response to α -CD3/CD28 stimuli. In addition, in response to the same stimuli, SLE Tscm cells could differentiate into more Tfh cells than HC Tscm cells could (for CXCR5⁺ ICOS⁺ PD-1⁺ cells in CD4⁺ T cells, 9.30% (SLE) vs 5.41% (HC) and for Bcl-6⁺ cells in CD4⁺ T cells, 34.29% (SLE) vs 19.20% (HC)). Tscm-derived Tfh cells could help B cells produce antibodies *in vitro* (12007.81 ± 4457.54 (SLE) vs 2082.18 ± 517.82 (HC)).

Conclusions: Proportions of Tscm cells among T cells is increased in SLE patients compared with HCs and the Tscm cells may help maintain SLE by its ability to differentiate into Tfh cells.

References:

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THU0245 MAMMALIAN TARGET OF RAPAMYCIN PATHWAY MIGHT CONTRIBUTE THE MINOR SALIVARY GLAND CHANGES IN BOTH SJÖGREN'S SYNDROME AND SYSTEMIC SCLEROSIS PATIENTS

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Background: The Mammalian Target of Rapamycin (mTOR), a multiprotein complex, controls cell growth, proliferation, survival and plays an important role in immunity and inflammation. Transforming Growth Factor- β 1 (TGF- β 1) leads to an increase in mTOR levels by protein kinase B (PKB or Akt) pathway. Phosphatase and tensin homolog (PTEN) affects mTOR pathway by inhibiting Akt. Recently, increased activities of TGF- β 1 and mTOR were established in a mouse model of SSc. However the role of mTOR pathway, which might be a potential treatment target, in the human salivary gland inflammation is not evaluated systematically before.

Objectives: Therefore, we aimed to examine the activity of mTOR pathway and TGF- β 1 in human minor salivary gland biopsies of Sjögren's Syndrome (SjS) and systemic sclerosis (SSc) patients.

Methods: Immunohistochemical technique was used to analyze the expression of mTOR, PTEN and TGF- β 1 in human minor salivary gland biopsies of SjS, SSc and SjS-SSc overlap patients. Immunohistochemical staining was evaluated by light microscopy and staining intensity was scored semi-quantitatively (Figure 1). The biopsy specimens were also examined for the degree of fibrosis.

Results: Formalin fixed sections of minor salivary gland biopsies of 58 SjS (57 female [98.3%]), 14 SSc (13 female [92.8%]) and 23 SjS-SSc overlap patients (all female) were included in the study. All biopsy specimens of SjS and overlap patients had a focus score of ≥ 1 . There is no significant difference regarding mTOR expression between groups ($P=0.622$). mTOR expression was found in 94.4% in SjS group, 100% in overlap and 90% in SSc patients. PTEN protein was expressed in 87.2% of patients with SjS, 57.9% of overlap and 100% of SSc patients and the difference was statistically different ($P=0.023$). Although ductal epithelial TGF- β 1 expression was similar between groups ($P=0.345$), acinar

Figure 1. Minor salivary gland biopsy pictures with different stainings of mTOR [1 positive (a) and 3 positive staining (b)], PTEN [negative staining (c) and score 2 (d)] and TGF- β 1 [negative staining (e) and score 3 (f)].