Serum Levels of Thymic Stromal Lymphopoietin: A Possible Novel Biomarker in Primary Sjögren's Syndrome and Related Lymphoproliferation

Abstract #2880

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Background/Purpose:
Thymic stromal lymphopoietin (TSLP) has been demonstrated to be involved in B-cell lymphoproliferation and lymphoma mainly by tissue studies on salivary glands (SG) biopsies of patients with primary Sjögren's syndrome (pSS) (1). The aim of this work is to study serum TSLP as a possible novel biomarker in pSS.

Methods:
Ninety-one antiSSA-positive pSS patients (females n=86, 94.5%; mean age 57.2 years, range 25-80), fulfilling the 2016 ACR-EULAR classification criteria, were studied by ELISA for the expression of serum TSLP, in comparison with 80 matched healthy blood donors (HBDs) and with 21 patients with non-autoimmune sicca syndrome (nSS). pSS patients were then stratified according to the degree of lymphoproliferation (2) in available SG biopsies as follows: fully benign (fbSS), myoepithelial sialadenitis (MESA) and B-cell MALT lymphoma (NHL), and the difference in serum TSLP levels was evaluated between these three subgroups.

In addition, prospective serum samples, collected at the time of MESA diagnosis and also later at the time of NHL development, were studied in 3 pSS cases.

All the pSS patients were naïve to immunosuppressants, biotechnological drugs, chemotherapies and were not receiving steroids at the time of sample collection.

The most relevant clinical features of pSS linked to lymphoproliferation (i.e. persistent parotid swelling and mixed cryoglobulinemia), the presence of ectopic germinal centres (GCs) in SG, and the EULAR Sjögren's Syndrome Disease Activity Index (ESSDAI) were also collected.

Results:
Serum TSLP resulted significantly increased in pSS (mean 47.19 pg/mL, range 0-324.89) compared to nSS (mean 2.74 pg/mL, range 0-15.9) ($p<0.0001$) and to HBDs controls (mean 0.59

pg/mL, range 0-11.09: very low detectable levels only in 4/80) ($p<0.0001$). The significance was the same ($p<0.0001$) also after excluding NHL pSS patients.

Serum TSLP showed a progressive, significant increase from fbSS (n=65; mean 26.54 pg/mL; range 0-75.11) to MESA (n=14; mean 69.72 pg/mL; range 20.62-140.8) (MESA vs fbSS $p<0.0001$) and finally to NHL (n=12; mean 151.96 pg/mL; range 58.16-324.89) (NHL vs fbSS $p<0.0001$; NHL vs MESA $p=0.009$).

In prospective sera, TSLP levels increased in all the 3 pSS patients from MESA to NHL, from 3.76 times to 70.46 times (mean of serum TSLP increase: 30 times).

Benign pSS patients with persistent parotid swelling, mixed cryoglobulinemia and with GCs in SG biopsy showed significantly ($p<0.05$) higher TSLP serum levels compared to pSS patients without these features.

A significant correlation between higher TSLP serum levels and increasing ESSDAI was finally found ($R^2=0.51$; $p<0.0001$).

Conclusion:
Serum TSLP could represent a novel biomarker of pSS-related lymphoproliferation. The validation of present results is currently ongoing in independent pSS cohorts belonging to the EU Project HarmonicSS consortium (3).

References:

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Disclosure:
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