indicating that microglia cells may carry out the antigen presentation process seen in transcriptomic data. Low levels of serotonin and noradrenaline were observed at both 3 and 6 months of age in lupus mice; these aberrancies were mainly attributed to decreased serotonin synthesis as evidenced by intact serotonin metabolism (no differences were observed at its metabolites: 5-hydroxyindoleacetic acid). Analysis of the remaining regions of the brain combined with studies of metabolic activities of various brain regions by PET-CT scanning is in progress.

**Conclusion:** Immune cell trafficking from the periphery combined with marked inflammatory response in the hippocampus underlie the neuropsychiatric phenotype in NZW/B6 murine lupus. Our data indicate increased expression of activated myeloid cells -including microglia- in the hippocampus of lupus mice culminating in increased antigen presentation and decreased neurotransmitter levels.

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**OP0041 SALIVA AND SERUM LEVELS OF CXCL13: ASSOCIATION WITH THE SEVERITY OF SALIVARY GLAND LESIONS AND LYMPHOMA IN PATIENTS WITH SJÖGREN’S SYNDROME (SS)**

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**Background:** CXCL13 has been implicated in the formation of ectopic germinai centers (GC) in minor salivary gland (MSG) inflammatory lesions of SS patients. Recent studies suggest that serum CXCL13 levels associate with disease severity and risk for non-Hodgkin’s lymphoma (NHL) development.

**Objectives:** To validate the clinical utility of CXCL13 by investigating potential associations of saliva and serum CXCL13 levels with various histopathologic (including severity of MSG autoimmune infiltrates and GC formation), serologic and clinical features of the disease, as well as NHL.

**Methods:** CXCL13 levels were measured by a commercially available ELISA (sensitivity: 1 pg/ml; Abcam, Cambridge, UK) in paired serum and saliva specimens from 25 SS patients (9 with NHL; SSL), 9 sicca controls (SC; sicca-complaining individuals with no infiltrates in diagnostic MSG biopsy and negative autoantibody profile) and 6 healthy controls (HC). From the 16 SS patients without evidence of NHL, 5 had mild, 6 intermediate and 5 severe lesions at MSGs, as arbitrarily defined by focus (FS) and Tarpley (TS) biopsy scores (mild: FS<1.7, TS<1, intermediate: FS:1.8-2.95, TS:2 and severe: FS: 3.0-11, TS: 3-4). Furthermore, the organization of the MSG infiltrates to GCs has been evaluated in 23 patients revealing 10 with GCs.

**Kruskal-Wallis analysis revealed that serum CXCL13 levels were significantly increased in SS patients without or with NHL (median: 94.83 pg/ml and 96.70 pg/ml, respectively), compared to SC and HC (35.44 and 40.92 pg/ml respectively; p<0.05), whereas saliva levels were only marginally increased (76.47, 84.10, 55.98 and 65.30 pg/ml in SS, SSL, SC and HC, respectively; p=0.051). Among SS patients with distinct MSG lesion severity, only those with severe lesions were found to express significantly higher serum CXCL13 levels (149.3 pg/ml from SC and HC; p: 0.0051 and 0.0166, respectively). Spearman’s Rank correlation analysis showed that both serum and saliva levels correlated with MSG biopsy focus score (r: 0.6889, p=0.0001 and r: 0.4222, p=0.01, respectively). Mann-Whitney test revealed that serum CXCL13 levels were significantly elevated in patients with GCs at MSG lesions (156.1 vs 69.64 pg/ml; p=0.0015), rheumatoid factor (105.0 vs 53.72 pg/ml; p=0.015) and marginally with anti-Ro/La antibodies (121.8 vs 65.05 pg/ml; p: 0.06) compared to those without. Furthermore, CXCL13 levels were significantly increased in SS patients at high risk to develop NHL compared to low risk (149.3 vs 71.54 pg/ml, respectively; p: 0.0275). Saliva levels were not found to associate with the studied features.

**Conclusion:** Serum and to a lesser extend saliva CXCL13 levels are increased in SS and SSL patients and associate with the degree of MSG infiltration, as assessed by focus score. Serum, but not saliva, CXCL13 associates with various disease features, including GC formation, and may have a clinical utility in identifying SS patients at high risk to develop lymphoma.

**Disclosure of Interests:** None declared

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**OP0042 BLOCKING OF CD103+ TISSUE RESIDENT MEMORY T CELLS (TRM) AS A THERAPEUTIC STRATEGY IN SJÖGREN’S SYNDROME**

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**Background:** Systemic lupus erythematosus is a chronic disease with a broad spectrum of autoantibodies and clinical manifestations. As much as 45% of patients with Sjögren’s syndrome develop lymphoma.

**Objective:** To validate the clinical utility of CXCL13 by investigating potential associations of saliva and serum CXCL13 levels with various histopathologic (including severity of MSG autoimmune infiltrates and GC formation), serologic and clinical features of the disease, as well as NHL.

**Methods:** CXCL13 levels were measured by a commercially available ELISA (sensitivity: 1 pg/ml; Abcam, Cambridge, UK) in paired serum and saliva specimens from 25 SS patients (9 with NHL; SSL), 9 sicca controls (SC; sicca-complaining individuals with no infiltrates in diagnostic MSG biopsy and negative autoantibody profile) and 6 healthy controls (HC). From the 16 SS patients without evidence of NHL, 5 had mild, 6 intermediate and 5 severe lesions at MSGs, as arbitrarily defined by focus (FS) and Tarpley (TS) biopsy scores (mild: FS<1.7, TS<1, intermediate: FS:1.8-2.95, TS:2 and severe: FS: 3.0-11, TS: 3-4). Furthermore, the organization of the MSG infiltrates to GCs has been evaluated in 23 patients revealing 10 with GCs.

**Kruskal-Wallis analysis revealed that serum CXCL13 levels were significantly increased in SS patients without or with NHL (median: 94.83 pg/ml and 96.70 pg/ml, respectively), compared to SC and HC (35.44 and 40.92 pg/ml respectively; p<0.05), whereas saliva levels were only marginally increased (76.47, 84.10, 55.98 and 65.30 pg/ml in SS, SSL, SC and HC, respectively; p=0.051). Among SS patients with distinct MSG lesion severity, only those with severe lesions were found to express significantly higher serum CXCL13 levels (149.3 pg/ml from SC and HC; p: 0.0051 and 0.0166, respectively). Spearman’s Rank correlation analysis showed that both serum and saliva levels correlated with MSG biopsy focus score (r: 0.6889, p=0.0001 and r: 0.4222, p=0.01, respectively). Mann-Whitney test revealed that serum CXCL13 levels were significantly elevated in patients with GCs at MSG lesions (156.1 vs 69.64 pg/ml; p=0.0015), rheumatoid factor (105.0 vs 53.72 pg/ml; p=0.015) and marginally with anti-Ro/La antibodies (121.8 vs 65.05 pg/ml; p: 0.06) compared to those without. Furthermore, CXCL13 levels were significantly increased in SS patients at high risk to develop NHL compared to low risk (149.3 vs 71.54 pg/ml, respectively; p: 0.0275). Saliva levels were not found to associate with the studied features.

**Conclusion:** Serum and to a lesser extend saliva CXCL13 levels are increased in SS and SSL patients and associate with the degree of MSG infiltration, as assessed by focus score. Serum, but not saliva, CXCL13 associates with various disease features, including GC formation, and may have a clinical utility in identifying SS patients at high risk to develop lymphoma.

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of SLE patients were reported to suffer from severe infections. However, due to the high cost of recruiting patients, we still do not have a holistic picture of the SLE-infection association. Administrative data which encompass all provincially funded healthcare services and administrative databases provides promising opportunities to advance the knowledge and management of the SLE patients which cannot be evaluated by the conventional clinical setting with small sample size and selective samples.

**Objectives:** To evaluate the risk of severe infection and infection-related mortality among patients with newly diagnosed systemic lupus erythematosus.

**Methods:** We conducted an age- and gender-matched cohort study of all patients with incident SLE between January 1, 1997 and March 31, 2016 using administrative health data from British Columbia, Canada. Primary outcome was the first severe infection after SLE onset necessitating hospitalization or occurring during hospitalization. Secondary outcomes were total number of severe infections and infection-related mortality.

**Results:** We identified 5,169 SLE patients and matched them with 25,845 non-SLE individuals from the general population, yielding 95% CI, 1.86-1.98 first severe infections during 48,367 and 260,712 person-years follow-up, respectively. The crude incidence rate ratios for first severe infection and infection-related mortality were 2.59 (95% CI, 2.39-2.80) and 2.20 (95% CI, 1.76-2.73), respectively. The corresponding adjusted hazard ratios were 1.82 (95% CI 1.66-1.99) and 1.61 (95% CI, 1.24-2.08). SLE patients had an increased risk of a greater total number of severe infections with crude rate ratio of 3.24 (95% CI, 3.06-3.43) and adjusted rate ratio of 2.07 (95% CI, 1.82-2.36).

**Conclusion:** SLE is associated with increased risks of first severe infection (1.8-fold), a greater total number of severe infections (2.1-fold) and infection-related mortality (1.6-fold).

**References:**


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**NLRP12 INVOLVES IN THE LUPUS WITH POSITIVE INTERFERON SIGNATURE**

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**Background:** Systemic lupus erythematosus (SLE) is a systemic autoimmune disease with diverse etiological factors. It was recognized that interferon (IFN) signature involved in the progression of SLE. NLRP12 (NOD-like receptor family (NLR) pyrin domain containing 12) is a pyrin containing NLR protein that we had linked its new biological function to the cross-regulation of Toll like receptor (TLRs) and Rig-I like receptor (RIG-I) pathways. NLRP12 acts as an innate immune check-point in regulating type I IFNs expression during TLRs and RIG-I activation. The importance of NLRP12 in lupus disease activity remained to be elucidated.

**Objectives:** To clarify the role of NLRP12 in regulating the interferon signature.

**Methods:** Peripheral blood mononuclear cells (PBMCs) were collected from SLE patients and healthy donors for analysis of NLRP12 and IFN-γ gene expression by RT-qPCR. PBMCs were applied for Chromatin immunoprecipitation (ChIP) assay and electrical mobility shift assay (EMSA) to determine the putative transcription factor that regulates NLRP12 expression. An involvement of epigenetic regulation of NLRP12 expression in SLE patients was also analyzed. Bone marrow derived dendritic cells (BMDCs) were collected from wild type mouse and Nlrp12 knockout mice. Another CD14+ monocytes were isolated from 10 cases of lupus patients and 8 cases of healthy control, following by stimulating different type of nucleic acids, and IFN-α and IL-6 were measured with ELISA assay.

**Conclusion:** Clinically benign ANA positivity is a complex immune state with many features seen in active SLE, including pDC exhaustion, keratinocyte interferon production and strong skin interferon score, increased blood interferon score, and disturbance of B cell subsets. These findings suggest that other factors are necessary for clinical disease, or that regulatory mechanisms stabilise autoimmunity. Further work in this cohort will address these questions.