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FRI0160

THE CORRELATION BETWEEN PREGNANCY, DISEASE ACTIVITY AND ADVERSE PREGNANCY OUTCOMES IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Patients with systemic lupus erythematosus (SLE) can present with acute disease flares/exacerbations during pregnancy and postpartum period.¹ These flares can cause adverse pregnancy outcomes (APO).

Objectives: In this study, our pregnant SLE cohort, which was under medical surveillance of both our Rheumatology and Gynecology and Obstetrics departments was analyzed. We intended to determine the effects of pregnancy on disease activity and the correlation between disease flares and adverse pregnancy outcomes.

Methods: 168 pregnancy data involving 136 patients with SLE meeting the ACR criteria were examined. Cumulative clinical, laboratory and serological parameters were described and disease activity and flares were calculated using SLEDAI-2K disease activity index during preconceptional six month period, during all trimesters of pregnancy, and during postpartum six month period. Patients with low lupus disease activity scores (LLDAS) during each of these periods were identified. Fetal/neonatal death, premature birth due to preeclampsia, eclampsia or HELLP syndrome, neonates small for gestational age were determined as adverse pregnancy outcomes. Relationship of APO with disease activity was studied and patients with APO were compared to patients without APO.

Results: Mean SLEDAI-2K scores was 1.3±2.2 (0-16) during preconceptional six month period, 1.3±2.6 (0-16) during conception period, 1.7±3.2 (0-22) during first trimester, 1.4±2.7 (0-16) during second trimester, 1.5±3.3 (0-20) during third trimester and 3.5±5.4 (0-26) during postpartum six month period. Mean postpartum six month period SLEDAI-2K score was higher compared to the mean pregnancy SLEDAI-2K score (p<0.05). LLDAS was sustained in 79% of all pregnancies. 19% of pregnancies resulted in flares. 42% of these flares were severe and 58% were mild or moderate. 49% of severe flares occurred during the postpartum six month period and this percentage was significantly higher compared to each trimester (p<0.05). Most of the flares during pregnancy and postpartum period had mucocutaneous (37%), renal(35%) and hematological(25%) involvement.

APO was observed in 34% of pregnancies (n=57). APO (+) group was characterized by significantly longer disease duration and higher disease activity in all periods compared to APO (-) group (142±70 vs 170±88 months, p<0.05). In APO (-) group, the proportion of patients with severe disease activity during all pregnancy periods and postpartum period was significantly low (%18 vs 35, p<0.05), while the proportion of patients with sustained LLDAS was much higher (%88 vs 70).

Conclusion: Postpartum six-month period appears to have the highest risk for disease flares during SLE pregnancies. Disease activity during pregnancy increases the risk of APO. Patients with sustained LLDAS have significantly lower APO rates. In order to achieve a positive pregnancy outcome and lower maternal morbidity, regular follow up of patients during pregnancy and postpartum period by Rheumatology and Gynecology and Obstetrics Departments is necessary.

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PHENOTYPIC DIFFERENCES BETWEEN SJÖGREN'S SYNDROME PATIENTS WITH LOW AND HIGH-GRADE INFLAMMATION BASED ON SALIVARY GLAND FOCUS SCORE

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Background: Sjögren's syndrome (SS) is characterized by the presence of lymphocytic infiltration around the ductal epithelium of the salivary and lacrimal glands. The periepipithelial inflammatory lesions and the enclosed B cell component are responsible for the glandular and extraglandular manifestations of the disease. Previous studies have shown that the severity of inflammation observed within the salivary glands is correlated with the occurrence of extraglandular manifestations. However, in these studies either the number of patients is small or the SS criteria are not well defined. To explore the association between the degree of inflammation within the salivary glands and the phenotype of the disease, large and well characterized cohorts of SS patients is required.

Objectives: To compare the phenotypic features of SS patients with low and high degree of inflammation within the minor salivary glands as reflected by the focus score (FS).

Methods: From a total cohort of 1723 consecutive SS patients who fulfill the 2016 EULAR/ACR criteria and are followed up in 4 clinical centers ([Universities of Pisa, Athens, Harokopio and Ioannina, (PAHI)], those who had performed a lip biopsy and the focused score was available, were classified into low grade (FS<3) or high grade (FS≥3). Glandular (dry mouth, dry eyes, parotid gland enlargement) and extra-glandular manifestations (Raynaud's phenomenon, arthralgias/myalgias, arthritis, palpable purpura, liver involvement, kidney involvement, lung involvement, neurologic involvement, long standing lymphadenopathy and lymphoma) as well as serologic features (ANA, RF, anti-Ro/SSA, anti-La/SSB) were compared between the 2 groups. Statistical analysis for categorical variables was performed by Fisher exact or chi-square tests and for continuous variables with t test or Mann-Whitney accordingly.

Results: Eight hundred and eight minor salivary gland biopsies were available and evaluated based on focus score at the initial evaluation of SS patients, of whom 753 had low grade (FS<3) and 153 high grade (≥3) inflammation. The median disease duration after SS diagnosis was not statistically significant different for the 2 groups (median: 4 years, range: 0-36 years). SS patients with high grade inflammation displayed higher prevalence of salivary gland enlargement (SGE) (40% vs 25%, p=0.0002), long standing lymphadenopathy (22% vs 14%, p=0.02), ANA (97% vs 88%, p=0.0001), anti-La/SSB (52% vs 32%, p<0.0001), RF (61.5% vs 48%, p=0.003), peripheral neuropathy (PN) (5.3% vs 1.5, p=0.01) and of lymphoma (26% vs 8%, p<0.0001, OR=4.142, 95%CI=2.65 to 6.47) compared to those with low grade inflammation.

Conclusion: SS patients with FS ≥3 at the initial evaluation, display higher prevalence of lymphoma as well as higher B cell hyperactivity and certain clinical manifestations (SGE, PNS, lymphadenopathy) that constitute risk factors for lymphoma development.

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FRI0162

COMPARISON OF MUSCULOSKELETAL INVOLVEMENT OF WRIST AND HAND BY MRI IN TWO SYSTEMIC LUPUS ERYTHEMATOSUS GROUPS: HAND ARTHRITIS AND HAND ARTHRALGIA

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Background: Articular involvement can reach up to 95% within the multisystemic manifestations of SLE. Originally, a non-erosive pattern of articular inflammation was described, but the emergence of more sensitive imaging techniques, such as Magnetic Resonance Imaging (MRI), show synovitis (S), erosions (E), bone marrow edema (BME) and tenosynovitis (TS) in patients with systemic lupus erythematosus (SLE). Nowadays, a specific validated pattern of articular involvement associated with this disease does not yet exist, although it has begun to be studied (1,2).

Objectives: To assess the extent of structural joint involvement in proximal interphalangeal joints (PIP), hand and wrist: E, BME, S, TS and peritendinitis (PT) by MRI, in patients diagnosed with SLE with hand arthritis or arthralgia.

Methods: All patients with SLE who manifested hand pain and/or swelling in the prior 6 months were consecutively included in the study. They were divided into two groups: arthritis or arthralgia, according to the physical examination by an expert rheumatologist. All patients underwent an MRI with contrast injection on their non-dominant hand. The images obtained were evaluated following RAM-RIS criteria extended to PIP and Tenosynovitis score for RA by two expert musculoskeletal radiologists, blind to the groups.

Results: 32 patients were included: arthritis: n = 13, arthralgia: n = 19, with a mean age of 50.91 ± 13.37 years and a disease evolution time of 10.21 ± 8.26 years. The average SLEDAI score 6.30 ± 3.40 for the arthritis groups and 3.79 ± 2.14 for the arthralgia group. The average SLICC score was 0.23 ± 0.42 in the arthritis group and 0.1 ± 0.31 in the arthralgia group. E was found in 7 patients with arthritis (53.84%) (15.38% in PIP, 0% in hand and 53.84% in wrist) and in 13 patients with arthralgia (68.42%) (0% in PIP, 10.52% in hand and 68.42% in wrist). BME was observed in 4 patients with arthritis (30.76%) (7.69% in PIP, 0% in hand and 30.76% in wrist) and in 5 patients with arthralgia (26.31%) (5.26% in PIP, 10, 52% in hand and 15.78% in wrist). S was observed in 12 patients with arthritis (92.30%) (61.58 in PIP, 76.92% in hand and 84.61% in wrist) and in 8 patients with arthralgia (42.10%) (31.57% in PIP, 36.84% in hand and 36.84% in wrist). TS was observed in 6 patients with arthritis (46.15%) (38.46% in flexor tendons and 23.07% in extensor tendons) and in 8 patients with arthralgia (42.10%) (31.57% in flexor tendons and 21.05 % in extensor tendons). PT was found in 6 patients with arthritis (23.07%) and in no patient with arthralgia (0%).

Conclusion: MRI allows us to diagnose musculoskeletal involvement in SLE, morphologically similar to rheumatoid arthritis (erosion, bone marrow edema, synovitis and tenosynovitis), which usually are underestimated on plain radiography. This study also shows the important erosive burden of arthritis in SLE, which has not been well characterised yet. In addition, it demonstrates the underestimation of physical examination to diagnose active inflammatory damage, such as subclinical synovitis, in patients with inflammatory arthralgias.

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FRI0163 ANTIPHOSPHOLIPID PATTERNS PREDICT THE RISK OF THROMBOSIS IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: It is well known that Lupus anticoagulant (LAC) positivity is more strongly associated with both arterial and venous thrombosis than either anticardiolipin (aCL) or anti- β 2glycoprotein (aB2GPI) antibodies (1). An unanswered question is the contribution of which combinations of positive aPLs to thrombosis risk.

Objectives: We aimed to evaluate which aPL combinations increase the risk of future thrombosis in patients with Systemic Lupus Erythematosus (SLE).

Methods: This prospective analysis included SLE patients who had been tested for all 3 aPLs in Hopkins Lupus Cohort. We constructed a dataset with one record per month of follow up for each patient. Rates of thrombosis for each aPL or each combination of aPL were calculated as the number of thromboses divided by the number of person months at risk and the results are converted to rates per 1000 person-years.

Results: There were 805 patients with a complete profile of 7 aPLs with a total of 73417 person months of follow up. LAC was the most predictive of any [3.47 (1.96, 6.14) $p < 0.0001$], venous [4.3 (1.99, 9.25) $p = 0.0002$], and arterial [3.37 (1.51, 7.53) $p = 0.0029$] thrombosis. In individual models, aB2GPI positivity was a significant risk factor for any [1.90 (1.16, 3.13) $p = 0.0113$] and venous [2.3(1.23, 4.61) $p = 0.0103$] thrombosis. When we

looked at patients who were LAC positive, and asked if having another positive aPL increase the risk ratio for any/venous/arterial thrombosis, we found that having aB2GPI IgA appeared to add significant risk to any [1.68 (1.01, 2.79) $p = 0.044$], and venous [2.01 (1.02, 3.97) $p = 0.043$] thrombosis among those with or without LAC (Table 1).

Table 1. Additive effect of other aPLs adjusting for LAC

	ANY thrombosis		VENOUS thrombosis		ARTERIAL thrombosis	
	age adjusted RR 95%(CI)	P-value	age adjusted RR 95%(CI)	p-value	age adjusted RR 95%(CI)	p-value
Model 1: LAC + aCL-G						
LAC (+) vs (-)	3.78 (2.08, 6.85)	<.0001	5.03 (2.25, 11.24)	<.0001	3.32 (1.43, 7.73)	0.0053
aCL-G (+) vs (-)	0.64 (0.22, 1.83)	0.4045	0.48 (0.11, 2.14)	0.3351	1.09 (0.31, 3.77)	0.8962
Model 2: LAC + aCL-M						
LAC (+) vs (-)	3.82 (2.13, 6.87)	<0.0001	4.57 (2.07, 10.08)	0.0002	3.69 (1.61, 8.46)	0.0021
aCL-M (+) vs (-)	0.51 (0.16, 1.65)	0.2576	0.68 (0.16, 2.93)	0.6019	0.61 (0.14, 2.64)	0.5075
Model 3: LAC+ aCL-A						
LAC (+) vs (-)	3.34 (1.88, 5.96)	0.0001	4.14 (1.9, 9)	0.0003	3.29 (1.47, 7.38)	0.0038
aCL-A (+) vs (-)	2.33 (0.56, 9.70)	0.2459	2.44 (0.32, 18.4)	0.3858	2.2 (0.29, 16.49)	0.4415
Model 4: LAC+ aB2GPI-G						
LAC (+) vs (-)	3.52 (1.94, 6.39)	0.0001	4.21 (1.85, 9.57)	0.0006	3.4 (1.48, 7.79)	0.0038
aB2GPI-G (+) vs (-)	0.91 (0.32, 2.61)	0.8655	1.1 (0.31, 3.88)	0.8849	0.96 (0.22, 4.18)	0.957
Model 5: LAC+ aB2GPI-M						
LAC (+) vs (-)	3.53 (1.97, 6.31)	0.0021	4.17 (1.9, 9.14)	0.0004	3.58 (1.58, 8.1)	0.0023
aB2GPI-M (+) vs (-)	0.91 (0.49, 1.73)	0.7782	1.17 (0.51, 2.68)	0.7101	0.74 (0.29, 1.9)	0.5285
Model 6: LAC+ aB2GPI-A						
LAC (+) vs (-)	3.16 (1.77, 5.65)	0.0001	3.68 (1.68, 8.08)	0.0012	3.19 (1.41, 7.2)	0.0052
aB2GPI-A (+) vs (-)	1.68 (1.01, 2.79)	0.0441	2.01 (1.02, 3.97)	0.0434	1.4 (0.67, 2.91)	0.3738

Conclusion: Our study shows that LAC is still the best predictor of risk of any, arterial and venous thrombosis in SLE. Moreover, aB2GPI IgA positivity appeared to add also a significant risk to any and venous thrombosis. Therefore, the clinical significance of IgA anti- β 2GPI deserves further investigation in SLE patients.

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FRI0164 BANFF INFLAMMATORY INDICES MAY BE SUPERIOR TO THE NIH SCORING IN PREDICTING CKD PROGRESSION IN LUPUS NEPHRITIS

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Background: Chronic kidney disease/end stage renal disease (CKD/ESRD) from lupus nephritis (LN) is a major cause of morbidity and mortality.