PO.4.81 VARIABILITY OF XANTHINE OXIDOREDUCTASE ACTIVITY PATTERNS IN SYSTEMIC LUPUS ERYTHEMATOSUS AND RHEUMATOID ARTHRITIS

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Purpose Characterization of activity patterns of several mutually converting xanthine oxidoreductase subtypes, xanthine oxidase (XO) and xanthine dehydrogenase (XDG), within plasma and the blood cell compartments in systemic lupus erythematosus as compared with rheumatoid arthritis patients.

Methods The research was carried out in agreement with the WMA Declaration of Helsinki principles. 56 SLE patients and 77 RA patients were enrolled in this study. Diagnosis of SLE was verified using the ACR criteria (1997). RA was verified according to ACR/EULAR criteria (2010). Disease activity was assessed according to SLEDAI-2K and DAS28 indices, respectively. The reference group consisted of 35 healthy controls. Lymphocytes and erythrocytes were separated by means of density gradient centrifugation (1077 g/ml). XO and XDG activities were measured in plasma, lysed lymphocytes and lysed RBC using previously published kinetic techniques. Results were expressed as median and quartiles. Correlations were analyzed using Spearman's correlation coefficient. Differences were considered significant when $p<0.05$.

Results Mean age of SLE patients was 35 (31; 42) years, mean duration of disease was 8 (5; 11) years. Mean age of RA patients was 45 (37; 49) years, mean RA duration was 8 (6; 10) years. 15 (26.8%) SLE patients had mild disease activity, 26 (46.4%) had moderate activity, and 15 (26.8%) had high activity. 16 (20.8%) RA patients had mild disease activity, 49 (63.6%) had moderate activity, and 12 (15.6%) had high activity. Both xanthine oxidoreductase subtypes had various activity shifts in plasma and lysed blood cells in RA as well as in SLE. Both SLE and RA patients had high plasma XO activity in combination with low plasma XDG activity (all $p<0.05$), while low XO and XDG activities were demonstrated in lysed lymphocytes for these two groups (all $p<0.001$). Lysed red blood cells in RA had high XO activity in combination with low XDG activity (all $p<0.001$). SLE patients were revealed low XDG activity without significant shift of XO activity in red blood cells. When comparing SLE and RA, SLE patients had lower plasma XDG ($p=0.012$), higher lymphocyte XO ($p<0.001$), lower erythrocyte XO ($p<0.001$), and lower erythrocyte XDG ($p<0.001$) activities. There was positive correlation between plasma XO activity and the disease activity index as well as negative correlations between plasma XDG activity, lymphocyte XO activity, lymphocyte XDG activity and the disease activity index both in SLE and RA (all $p<0.001$). Red blood cells in SLE had negative XO correlation and positive XDG correlation with disease activity; such correlation pattern in RA was inverse (all $p<0.001$).

Conclusion The imbalance between oxidase and dehydrogenase subtypes of xanthine oxidoreductase in SLE was expressed in higher levels of circulating XO activity that is responsible more for free radicals generation. A decrease of lymphocytic XO and XDG activities could be an indirect evidence of purine metabolism disturbance in SLE and RA. Increase of XO/XDG ratio in erythrocytes may affect the lifespan of these cells both in SLE and RA.

PO.4.82 CORRELATION BETWEEN ANTI DS-DNA AND SYSTEMIC LUPUS ERYTHEMATOSUS DISEASE ACTIVITY

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Objectives To determinate the correlation between serum anti-dsDNA titer and Systemic Lupus Erythematosus Disease Activity

Introduction Lupus is a chronic autoimmune inflammatory disease which affects more women with a peak in incidence of reproductive age. Serological tests are used to determine the activity of the disease and predict the precipitation of the disease. Anti ds-DNA antibodies are found in high levels, on patients serum with LES flare, but not in normal person serum and in patients with other autoimmune disease such as discoid lupus erythematosus, chronic hepatitis or rheumatoid arthritis. Usually during the activation of the disease we have a decrease of complement and increase of anti ds-DNA.

Methods The patients included in the study are 42, with an average age of 25–35 years and with the highest percentage of patients being female (40 females and 2 males). The double stand ds-DNA antibody serum was measured. The disease activity was evaluated by SLEDAI evaluation. The SLEDAI is a global index that was developed and introduced in 1985 as a clinical index for the assessment of lupus disease activity in the preceding 10 days. It consists of 24 weighted clinical and laboratory variables of nine organ systems.

Results The growth of anti-ds DNA was observed in all patients with a flare of disease. Positive correlation was observed between SLEDAI and anti-dsDNA levels. It was observed that this correlation was significant between the anti-ds-DNA titer and the SLEDAI activity $r = 0.52$ ($p < 0.0001$).

Conclusion The implementation of SLEDAI is a clinically important tool for evaluating patients with LES. Serial measurement of anti-ds DNA can help us diagnose lupus flare and make the right therapeutic decision for patients with SLEDAI high points.

PO.4.83 ANEMIA AS AN OBTAINABLE MARKER OF SYSTEMATIC LUPUS ERYTHEMATOSUS ACTIVITY ASSESSMENT

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Purpose Anemia is frequent manifestation of SLE. Numerous reasons for anemia are well recognized including chronic disease anemia, iron deficiency anemia, autoimmune hemolytic anemia, anemia due to chronic renal failure, anemia caused by the treatment and others. On the other hand, correlation of anemia severity with SLE disease activity and with particular clinical manifestations is not yet satisfactory examined. The aim of this study is to investigate anemia grade in patients with SLE and propose it as a potential severity and prognostic marker.