AB0839

A STUDY OF SERUM COMPLEMENT AND SERUM CALPROTECTIN LEVEL IN SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Serum calprotectin, also known as MRP8/14 or S100A8/A9, has gained attention in recent years as a candidate biomarker in inflammatory diseases like SLE.1 Proteins of the complement pathway (serum C3 and C4) are linked to the pathogenesis of SLE and their levels have been measured as a means to assess the disease activity.2

Objectives:

[1] To study the relation of serum complement and serum calprotectin levels to disease activity in SLE

[2] To study the relation between serum complement and serum calprotectin levels in SLE.

Methods: Our study was a hospital-based observational study conducted in a tertiary care centre in North-East India during the period of June 2019 to May 2020. A total of 102 patients of SLE were taken up for the study. Disease activity was assessed using SLEDAI-2K scores and serum calprotectin level was measured by ELISA. Serum C3 level was assessed by Nephelometry and C4 level by Turbidimetric immunoassay. The statistical significance was fixed at 5% level of significance (p<0.05) for all analyses.

Results: Our study found a predominantly female population (Female:Male ratio 24.5:1) with majority of the patients (49.02%) in the 30-39 years age group. Higher calprotectin levels were seen in patients with higher disease activity (SLEDAI) and this relation was statistically significant (r=0.84, p<0.001). There was significant negative correlation between disease activity (SLEDAI) and serum C3 (r=-0.35, p<0.001) and serum C4 (r=-0.4, p<0.001) level. There was a significant negative correlation between complement levels and serum calprotectin levels (r=-0.53, p<0.001).

Conclusion: We found a significant positive correlation between serum calprotectin level and disease activity with a significant negative correlation between complement level and disease activity in SLE patients. There was a significant negative correlation between serum complement and serum calprotectin levels. These findings suggest serum calprotectin levels could be a substantial addition in the existing diagnostic array of tools in assessing lupus disease activity.

REFERENCES:


Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3531

AB0840

DIAGNOSIS VALUE OF INTERLEUKIN 23 IN SPONDYLOARTHROPATHIES

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Background: Interleukin 23 (IL-23) is a pivotal pro-inflammatory cytokine in the Th17/IL-23 axis which became the center of attention in researches during these last decades, especially during spondyloarthritides (1).

Objectives: We aimed to study the diagnosis value of IL-23 serum in spondyloarthritis.

Methods: We conducted a case-control study, including 144 diagnoses divided into two groups: -G1: 72 patients meeting the Assessment of SpondyloArthritis International Society (ASAS) criteria for spondyloarthritis (SA) -G2: 72 healthy controls matched for age and sex.

For each SA patient we collected the following parameters: BASDAI (Bath Ankylosing Spondylitis Disease Activity Index), ASDAS (Ankylosing Spondylitis Disease Activity Score), BASFI (Bath Ankylosing Spondylitis Functional Index), and BASRI (Bath Ankylosing Spondylitis Radiology Index).

The IL-23 level was measured using Enzyme-linked immunosorbent assay (ELISA). Erythrocyte Sedimentation rate (ESR) and C-reactive protein (CRP) were also measured.

We performed a ROC analysis and computed the area under the curve (AUC) at IL-23 to diagnose SA patients.

Statistical analysis was performed using “IBM SPSS Statistics” software version 25.
REFERENCES:

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Results: The study included 57 men and 15 women. The mean age was 44.8 ± 13.42 years. The mean age at the onset of the disease was 35.97 ± 12.88 years. The disease duration was 8.54 ± 7.7 years. Seventy-nine per cent of our patients had axial radiographic spondyloarthritis (n=57). Peripheral involvement was found in 45.6% (n=33). Eighteen patients had both axial and peripheral involvement concomitantly. Psoriasis was found in 36.1% of the cases (n=26).

The mean BASDAI and ASDAS-CRP were 3.21 ± 1.64 and 3.05 ± 1.51, respectively.

The mean BASFI was 3.88 ± 2.69. The mean was BASRI 5.26 ± 4.14. The mean ESR and CRP were 36.74 ± 29.38 mm/hr and 20.45 ± 25.19 mg/dL, respectively.

IL-23 level was significantly higher in patients compared to healthy controls (23.1 ± 2.72 pg/mL and 0.52 ± 0.59 pg/mL, respectively, p<0.0001). As shown in Figure 1, the AUC value to distinguish between spondyloarthritis and healthy control was 0.705 (p<0.0001). IL-23 cut-off was 7.96 pg/mL (Sensitivity= 69.4%, specificity=98.6%).

Conclusion: As reported to previous studies, our study showed that IL-23 is significantly higher in SA patients (2).

Interestingly, IL-23 was able to distinguish between SA patients and healthy controls with a cut-off of 7.96 pg/mL. This finding suggests that IL-23 may be practical in the development of new therapeutic approaches for the treatment of ankylosing spondylitis.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3637

AB0842

ALTERED XANTHINE OXIDASE AND XANTHINE DEHYDROGENASE ACTIVITIES IN RED BLOOD CELLS AS A CONTRIBUTION TO AUTOIMMUNE ANEMIA APPEARANCE IN RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is severe autoimmune joint disease, accompanied by a wide variety of extra-articular manifestations. Anemia is one of the most common organ involvements in RA, being diagnosed in 36-65% patients. Iron metabolism alterations, shortened RBC lifespan, and impaired erythropoiesis in bone marrow are believed to play a leading role in RA-related anemia development. These processes in RA can be mediated by increased effect of proinflammatory cytokines, including IFNγ and TNFα, and similar mechanisms could contribute to high xanthine oxidoreductase (XOR) expression. This enzyme makes multiple pathophysiologic effects, some of which can be related to the development of anemia in RA. Reactive oxygen species generated by XOR are capable, in particular, of damaging cell membranes, exerting influence on iron mobilization from ferritin in liver, and inducing changes in intestinal iron absorption.

Objective: Evaluation of changes in XOR interconvertible forms (xanthine oxidase and xanthine dehydrogenase) activities in RBC of RA patients.

Methods: The research was carried out in agreement with the WMA Declaration of Helsinki principles. 75 RA patients with verified RA were enrolled in the study. The diagnosis was verified using the ACR/EULAR criteria (2010). The reference group consisted of 35 healthy individuals. Xanthine oxidase (XO, EC 1.17.3.2) and xanthine dehydrogenase (XDG, EC 1.17.1.4) activities were measured in lysed red blood cells by spectrophotometric method as previously described [1]. The enzymatic activities were expressed as nmol/min/ml and normalized to 1×10⁹ cells/ml. Statistical comparison tests were selected in accordance to common guidelines. Central tendencies were expressed as means±SEM. Differences were considered significant when p<0.05.

Results: Mean age of RA patients was 43.9±0.97 years, and mean RA duration was 8.5±0.3 years. Extra-articular manifestations were diagnosed in 32 (42.7%) RA patients and 17 (53.1%) of them had anemia. We revealed substantial changes in XO and XDG activities in lysed RBC of RA patients with anemia. Increased XO activity and decreased XDG activity were observed in comparison with healthy controls (p<0.001 for both enzymes). In parallel with the increase in enzymatic activities of XOR interconvertible forms and their ratio. Transformation of XDG into KO ultimately leads to significant increase in the generation of reactive oxygen species that have a damaging effect on lipids, proteins and other cellular components, and specifically in RBC. This fact may be one of the reasons for their premature damage and development of anemia in RA.

REFERENCES:


Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3639

AB0848

CESAREAN SECTION IN MEXICAN WOMEN WITH AUTOIMMUNE RHEUMATIC DISEASES

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Background: Rheumatic diseases occur among women of childbearing age, adverse events during pregnancy in rheumatic diseases have been frequently reported. Mexico has one of the largest prevalence of cesarean section in women which negatively impacts the product.

Objective: The objective of this study is to describe the frequency of cesarean section in women with autoimmune rheumatic diseases compared to a control group.

Methods: We conducted a cross-sectional and retrospective study in patients from the pregnancy and rheumatic diseases clinic, and the Obstetrics department form the University Hospital “Dr. José E. González” in Northeast Mexico. Women with autoimmune rheumatic diseases that gave birth between August 2017 to December 2020 were included. All the data, including the way of birth was retrieved from the clinical files.

Results: One hundred and twelve patients were included (56 in the rheumatic disease group and 56 women without rheumatic diseases), two of them suffered miscarriage (one from the rheumatic disease group and 1 from the control group) giving a total of 110 products. The mean age was 29.6±0.97 years for the rheumatic disease group and 56 women without rheumatic diseases, 22 of them were 18-30 years old (39.2%), 22 between 30-40 years (39.2%) and 22 between 40-50 years (39.2%). The mean was BASFI 3.88 ± 2.69. The mean was BASRI 5.26 ± 4.14. The mean ESR and CRP were 36.74 ± 29.38 mm/hr and 20.45 ± 25.19 mg/dL, respectively.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3637

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Figure 1. AUC at IL-23 between SA patients 0.705 (p<0.0001) Nevertheless, no correlation was found between serum IL-23 levels and the following parameters: ESR, CRP, BASDAI, ASDAS-CRP, BASFI and BASRI.