

117. **The Association between Down's Syndrome and Systemic Lupus Erythematosus: A Case Report And Review Of Literature**

Bokalyan M*, Rezaieyazdi Z

Rheumatic disease research center, Mashhad University of Medical sciences

Background: Down's syndrome (DS) is a genetic disorder associated with trisomy of chromosome 21. There is a raised incidence of autoimmune diseases among DS patients. However it seems that association between DS and systemic lupus erythematosus (SLE) is not common. We reviewed 4 previous case reports and discussed if the immune disorders in Down's syndrome patients can predispose them to SLE as an autoimmune disease. Case presentation: A 17 year old male with Down's syndrome (DS) who had systemic lupus erythematosus(SLE) is described. His first presentation was chest pain causing by pericardial effusion. This patient fulfilled 6 of the revised criteria for the classification of SLE: malar rash, arthritis, pericarditis, leucopenia, positive ANA and positive anti ds DNA. He is on remission under treatment with prednisolon. Discussion: According to our literature review in medical sources, 4 Down's syndrome cases with SLE presentation had been reported. Characteristics of these 4 cases are compared. Considering this fact that enhanced autoantibody production and apoptosis have very important roles in pathogenesis of SLE may lead us to conclude that DS patients have some immune disorders that predispose them to develop SLE more than healthy population. To prove this claim more clinical and immunological studies are needed.

Keywords: Down's Syndrome, Systemic Lupus Erythematosus

118. **The Beneficial Effects of Therapeutic Plasma Exchange on the Frequency, Proportion and Function of the Most Important Subsets of CD₄+ T Lymphocytes in the Immuno-Pathogenesis of Multiple Sclerosis: Regulatory T Cells and Th17 Cells**

Jamshidian A

Isfahan University of Medical Sciences, Immunology, Isfahan, Iran

Plasma exchange is used increasingly as an individual therapeutic decision in the treatment of severe, steroid resistant relapses of Multiple Sclerosis (MS). However, its mechanism of action in this CD₄+T cell mediated autoimmune disease remained unknown. Clarifying the effects of therapeutic plasma exchange on Regulatory T cells as the major controllers and Th17 cells as the main promoters of MS, may help us to use this procedure as a disease modifying treatment in remission phase for reducing the rate and severity of future attacks. In this regard, we hypothesized that plasma exchange provides the immune system an exceptional break for de novo recognizing of myelin auto-antigens in a tolerogenic manner, by depleting the body of inflammatory mediators that acts as providers of co-stimulatory signals for the adaptive immune system. This may lead to an increase in the frequency and function of regulatory T cells and in contrast, a decrease in the frequency and function of Th17 cells. To investigate the reality of this hypothesis, for the first time in the world, we are going to compare the frequency, proportion and function of these cells before the first and after the last session of therapy in a group of 20 Relapsing-Remitting MS patients under the course of therapeutic plasma exchange. The plan of techniques for investigating this issues will be flowcytometric assays for the frequency and ratio of lymphocyte subsets, Real-time PCR for the assessment of the expression levels of lymphocyte subsets specific transcription factors, and co-culture inhibition assays for evaluation of the inhibitory function of regulatory T cells on the autologous responder T lymphocytes. We are now at the beginning of this study. So the results and conclusion about our hypothesis will be reported in the future.

119. **The Relation between Some Biochemical Parameters by Balancing Pro-Oxidant-Antioxidant in Rheumatoid Arthritis Disease**

Shakeri F^{1*}, Ghodrati azadi H², Hamidi alamdari D³, Parizadeh M.R³, Sahebari M⁴

¹Graduted from the Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, ²Department of Basic Sciences School of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, ³Department of Basic Sciences, School of Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, ⁴Rheumatic Diseases Research Center, Mashhad University of Medical Sciences

Background: Rheumatoid arthritis is mainly characterized with non-exclusive inflammation of local joints or joints inflammation, morning stiffness. In rheumatoid arthritis patients, increased free radicals of oxygen (ROS) act as mediators of tissue damage. This point emphasizes on the necessity of applying appropriate methods for examining tissual oxidative condition and antioxidant compounds capabilities in patients with rheumatoid arthritis. Then, we considered its relation with biochemical parameters. Materials and Methods: In surveying 100 patients with rheumatoid arthritis, the index rate of oxidant was compared in case group and control group using independent T Test. Results: Due to the fact that P Value <0. 001, we observed a meaningful difference, and the result of misbalancing oxidant-antioxidant in the group with rheumatoid arthritis favored the increase of oxidant. In examining biochemical parameters in patients with rheumatoid arthritis, urea has decreased while uric acid content has increased. By examining the relationship between biochemical parameters and oxidant-antioxidant balance we observed that

Effect of Binding Antibodies to Therapeutic IFN- β in Multiple Sclerosis Patients: A Comparison between Three IFN- β Products, Interferon, Rebif and Betaser

Shahin Ghannadi ¹, Shamsoddin V², Ghannadifar M³

¹Immunology Department, Tabriz University of Medical Sciences (TUMS), Immunology Department, Tabriz, Iran, ²Tabriz University of Medical Sciences (TUMS), Immunology Department, Tabriz, Iran, ³Tabriz University of Medical Sciences (TUMS), Department of Neurology, Khatam Hospital, Tabriz University of Medical Sciences (TUMS), Iran, ⁴Tabriz University of Medical Sciences (TUMS), Immunology Department, Tabriz, Iran

Background: Multiple sclerosis (MS) is a demyelinating disease of the central nervous system, which mainly affects young adults. Interferon-beta (IFN- β) is the first disease modifying drug to be approved for the treatment of multiple sclerosis (MS). Some MS patients treated with IFN- β develop antibodies to the drug. Anti-interferon-beta antibodies can reduce both bioactivity and clinical efficacy of IFN- β . **Objective:** Evaluation of immunological effects of therapeutic IFN- β in Multiple Sclerosis Patients treated with Copaxone[®], Rebif[®], Betaser[®]. **Method:** Serum samples of 30 patients with relapsing-remitting MS. Patients were treated with IFN- β (Betaser, n = 40; IFN- β 1a (Copaxone, n = 40; Rebif, n=40) for One & Six months. IFN- β Binding antibodies were tested by Enzyme-Linked Immunosorbent Assay (ELISA). **Results:** Serum anti-interferon positive for Betaser, Rebif had a positive sample with an optical density (OD) ≥ 1.2 . Betaser was found in 30 patients (75%) and Rebif, Betaser was positive for 35.7% for Betaser, 26.3% for Copaxone, and 21.07% for Rebif. **Conclusion:** The three IFN- β preparations have different degrees of immunogenicity and IFN- β 1a molecule is more immunogenic than the IFN- β 1b molecule.

Correspondence: Shamsoddin Ghannadi, Immunology, TUMS, Azad St.

Interleukin-17F mRNA Concentration with Atherosclerosis in Patients with Systemic Lupus Erythematosus

Shahin Ghannadi ¹, Shamsoddin V², Shalabyan M³

¹Immunology Department of Medical Sciences, Rheumatic Disease Research Center

Background: Systemic lupus erythematosus (SLE) is associated with atherosclerosis as an important cause of morbidity and mortality in patients. Interleukin-17 (IL-17) is the higher concentration of circulating interleukin (IL)-17 in SLE patients than in healthy population. IL-17 acts as a proinflammatory and angiogenic cytokine. Our aim was to evaluate the relationship of plasma interleukin-17 concentration with atherosclerosis in patients with SLE. **Materials and Methods:** 40 patients and 30 healthy controls (age and sex matched) were selected. Plasma interleukin-17 concentration was measured using ELISA kit. Serum concentration of IL-17 was measured in both groups. **Result:** IL-17 level in SLE patients was significantly higher in SLE patients than age-matched healthy controls. **Conclusion:** Plasma concentration of IL-17 and EIMT were significantly higher in SLE patients than age-matched healthy controls. IL-17 concentration in the top artery compared with the bottom artery had higher disease activity. No significant correlation was seen between IL-17 concentration and signs of atherosclerosis. **Conclusion:** In SLE patients a high IL-17 level reflects atherosclerosis and is not related with vascular atherosclerosis.

Keywords: Interleukin-17, Atherosclerosis, Systemic Lupus Erythematosus (SLE)

The Association between Dose's Syndrome and Systemic Lupus Erythematosus: A Case Report And Review Of Literature

Shahin Ghannadi ¹, Shamsoddin V²

¹Immunology Department of Medical Sciences, Medical University of Medical Sciences

Background: Dose's syndrome (DS) is a genetic disorder associated with severity of atherosclerosis [1]. There is a initial incidence of atherosclerosis among 30 patients. However, it seems that association between DS and systemic lupus erythematosus (SLE) is not common. We reported a systemic case reports and discussed if the immune disorders in Dose's syndrome patients can predispose them to SLE as an autoimmune disease. **Case presentation:** A 17 year old male with Dose's syndrome (DS) who had systemic lupus erythematosus (SLE) is reported. His first presentation was chest pain causing by pericardial effusion. This patient fulfilled 6 of the revised criteria for the classification criteria: chest pain, arthritis, pericarditis, antinuclear positive ANA and positive anti-ds DNA. He is on medication under treatment with corticosteroids. **Conclusion:** According to our literature review in medical sciences, 4 Dose's syndrome cases with SLE presentation had been reported. **Conclusion:** of these 4 cases are compared. Considering the fact that enhanced autoantibody production and apoptosis have been reported in a subgroup of SLE may lead us to conclude that DS patients have some immune disorders that predispose them to develop atherosclerosis mainly population. To prove this claim more clinical and immunological studies are needed.

Keywords: Dose's Syndrome, Systemic Lupus Erythematosus

Immunological Effects of Therapeutic Plasma Exchange on the Frequency, Proliferation and Function of the Most Important Subsets of CD4⁺ T-lymphocytes in the Immune Pathogenesis of Multiple Sclerosis: Regulatory T Cells and Th17 Cells

Shahin Ghannadi ¹

¹Immunology Department of Medical Sciences, Immunology, Tabriz, Iran

Therapeutic plasma exchange is used increasingly as an individual therapeutic decision in the treatment of severe, steroid resistant variants of Multiple Sclerosis (MS). However, the mechanism of action in this CD4⁺ cell mediated autoimmune disease remained unknown. Clarifying the effects of therapeutic plasma exchange on Regulatory T cells as the major suppressors and Th17 cells as the main promoters of MS, may help us to use this treatment as a disease modifying treatment in remission phase for reducing the rate and severity of future attacks. In this regard, we hypothesized therapeutic plasma exchange provides the immune system an exceptional break, for its nerve reorganizing of myelin auto-antigens in a heterogeneous manner. Considering the fact of inflammatory mediators that acts as providers of co-stimulatory signals for the adaptive immune system. This may lead to an increase in the frequency and function of regulatory T cells and in contrast, a decrease in the frequency and function of Th17 cells. To investigate the reality of this hypothesis, for the first time in the world, we are going to compare the frequency, proliferation and function of these cells before the first and after the last session of therapy in a group of 20 Relapsing-Remitting MS patients under the course of therapeutic plasma exchange. The main techniques for investigating this issue will be flow-cytometric assays for the frequency and ratio of lymphocyte subsets, analysis of the expression levels of lymphocyte subset specific transcription factors, and analysis inhibition assays determination of the inhibitory function of regulatory T cells on the pathogenic responder T lymphocytes. We are sure at the beginning of this work, these results and conclusion about our hypothesis will be reported to the future.

The Relation between Some Biochemical Parameters by Enhancing Pro-Oxidant-Antioxidant in Rheumatoid Arthritic Disease

Shahin Ghannadi ¹, Shamsoddin V², Parvaneh M³, Sabzchi M⁴

¹Immunology Department of the Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, ²Department of Basic Sciences School of Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, ³Department of Basic Sciences, School of Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, ⁴Rheumatic Diseases Research Center, Mashhad University of Medical Sciences

Background: Rheumatoid arthritis is mainly characterized with non-specific inflammation of local joints or joint inflammation, resulting in chronic rheumatoid arthritis patients, increased free radicals of oxygen (ROS) act as mediators of tissue damage. This point emphasizes on the necessity of applying appropriate methods for assessing tissue oxidative condition and antioxidant compounds capabilities in patients with rheumatoid arthritis. Thus, we considered its relation with biochemical parameters. **Materials and Methods:** In surveying 100 patients with rheumatoid arthritis, the index rate of oxidant was compared in case group and control group using independent T-Test. **Results:** Due to the fact that $P < 0.001$, we observed a meaningful difference, and the result of inhibiting oxidant-antioxidant in the group with rheumatoid arthritis through the intake of oxidant, by examining biochemical parameters in patients with rheumatoid arthritis, was less decreased which rate oxidant was increased. By examining the relationship between biochemical parameters and oxidant-antioxidant balance we observed that

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