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MUCOSAL-ASSOCIATED INVARIANT T CELL POLYMORPHISM OF 5,10-MTHF REDUCTASE AS A RISK FACTOR FOR SYSTEMIC LUPUS ERYTHEMATOSUS

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Background: Mucosal-associated invariant T (MAIT) cells are an important part of mucosal immunity and play a role in generating regulatory T cells. However, not much has been studied regarding MAIT cells in the development of systemic lupus erythematosus (SLE) or other autoimmune diseases. Our study primarily demonstrates that MAIT cells are numerically decreased in SLE patients and some subpopulations of MAIT cells are negatively correlated with disease activity.

Objectives: To determine the expression of T cell surface markers, CD4 or CD8, on ILCs and their subsets. The results showed that decreased frequencies of CD4+CD8+ ILCs, CD4+CD8- ILC1, CD4+CD8+ ILC2, and CD4+CD8-CD336- ILC3 were found in patients compared with healthy controls (p=0.001, p=0.017, p=0.04, and p=0.002, respectively). Frequencies of CD4+CD8- ILCs and CD4+CD8+ ILC1 were positively related with serum C3 level (r=0.519, p=0.008 and r=0.528, p=0.007, respectively), and were positively related with serum C4 level (r=0.623, p=0.001 and r=0.643, p=0.001, respectively).

Conclusions: In the present study, we demonstrated that frequencies of circulating ILCs and its subsets were altered in SLE patients and some subpopulations were negatively correlated with SLE disease activity.

References:

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POLYMORPHISM OF 5,10-METHYLENETETRAHYDROFOLATE REDUCTASE (C677T) IN PATIENTS WITH ANTIPHOSPHOLIPID SYNDROME, ITS ASSOCIATION WITH CARDIOVASCULAR LESIONS

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Background: Many studies have been conducted to determine the role of genetic polymorphism in the occurrence of cardiovascular diseases. The pathogenetic significance of MTHFR polymorphism is the subject of intensive research, especially its connection with lesions of the cardiovascular system. The frequency of C677T polymorphism in the 5,10-MTHF gene is poorly known in patients with antiphospholipid syndrome (APS), and its relationship with vascular lesions has not been clarified yet.

Objectives: The present study aimed to analyse the C677T mutation of the MTHFR gene and its association with endothelial dysfunction and clinical manifestations of cardiovascular lesions in APS.

Methods: We studied 82 patients with APS, including 34 (41.6%) with primary antiphospholipid syndrome (PAPS) and 48 (58.4%) with secondary antiphospholipid syndrome (SAPS). The analysis of the MTHFR C677T mutation was performed by PCR followed by digestion according to Frosst et al. All patients were assessed for the endothelium-dependent vasodilatation of brachial artery (EDVD), the thickness of the intima-media of the common carotid artery (IMT), the presence of atherosclerotic plaque (AP) and clinical manifestations of cardiovascular lesions.

Results: There were 10.8% of homozygotes (677-TT), 37.8% of heterozygotes (677-CT) and 51.4% of homozygotes (677-CC) in the control group, and the frequency of T-alleles amounted to 29.7%. The incidence of T-alleles was higher among the patients with APS than in the control group and was 35.4%. The prevalence of homozygotes (677-CC), heterozygotes (677-CT) and heterozygotes (677-CC) was not significantly different between the PAPS and SAPS groups (44.1%, 38.2%, 17.7% and 45.8%, 39.6%, 14.8% respectively p<0.05). The frequency of T-alleles was higher in PAPS group than in SAPS group (38.6% against 34.4%, respectively p<0.05). The analysis of structural and functional vascular lesions in homozygotes (677-CC), homozygotes (677-CT) and heterozygotes (677-CT) did not reveal significant differences in both mean values and the proportion of individuals with IMT thickness >0.90 mm, 0.88±0.05 mm, 0.90 ±0.03 and 35.3%, 38.5%, 51.7% respectively p<0.05) with decrease of EDVD (7.09±0.49, 6.32±1.0, 6.92±0.58 and 47.0%, 53.8%, 48.3% respectively p<0.05) and the presence of AP (26.5%, 23.1%, 48.3% respectively p<0.05). Although there was a tendency of IMT thickness increase and EDVD decrease for T-carriers. The proportion of persons with IMT thickness (>0.90 mm) and the decrease of EDVD >4 (80.0%) among the homozygote 677-TT was 3%–6.5% higher than that of the 677-CC homozygote. The frequency of clinical manifestations of cardiovascular lesions (myocardial infarction, stroke, TIA) was in 1.2–1.8 times more often among the homozygote 677-TT than 677-CC homozygote.

Conclusions: The mutation of the C677T of the MTHFR gene is not a risk factor for the development of atherosclerotic vascular damage in patients with APS, due to the lack of associative interrelationships between the decrease of EDVD, increase of IMT, clinical manifestations on the one hand, and the MTHFR polymorphism on the other hand.

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SERUM EXOSOMES INVOLVED IN THE PROGRESSION OF LUPUS NEPHRITIS

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Background: Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that systemically affects several important organs. Lupus nephritis (LN) is one of the most severe complications of SLE. Exosomes are important mediators of biological information and play a part in the occurrence and development of various diseases including LN.

Objectives: The aim of study was to find whether exosomes participate in the pathogenesis of lupus nephritis.