

**PS5:104 LYMPHOPENIA IN SYSTEMIC LUPUS ERYTHEMATOSUS – A RETROSPECTIVE ANALYSIS FROM UNIDADE IMUNOLOGIA CLINICA (CENTRO HOSPITALAR E UNIVERSITÁRIO DO PORTO)**

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Systemic Lupus Erythematosus (SLE) has immune dysregulation, with lymphopenia being one of the most frequent clinical findings, namely the CD4 T cells. It has been associated not only to higher risk of infections, but also to disease activity and risk of flares.

The authors pretended to describe the prevalence of lymphopenia in SLE in a major centre of Immunology in Portugal. A retrospective analysis on the SLE patients was performed, with a longitudinal description of the subpopulations of lymphocytes, relating it with disease activity, organ involved, therapeutics and major infections.

The sample had 48 patients, mainly constituted by females (85,4%), median age of 43 y. 62,5% had lymphopenia in the diagnosis. At the time of the most recent peripheral blood flow cytometry 66,7% of the sample had lymphopenia, with different values of cytopenia according to lymphocytes subpopulations – T CD4: 77,4%; T CD8: 75%; B: 83,3%; NK: 91,7%. Severe T CD4 lymphopenia (below 200 uL) was present in 8,3% of the sample. 18,8% had severe flares (SLE-DAI Index) and 90% of these had low T CD4 counts (below 700 uL). The majority of patients with T CD4 under 200 uL were on severe flare. Higher frequency of corticosteroids and immunosuppressors, namely cyclophosphamide (12,5%) was observed on the patients. 17 patients of the sample had sequential cytometry analysis and a correlation between lymphopenia and activity has not observed. 17 cumulative infections were described, the majority (70,6%) with lymphopenia. Although opportunistic infections (pulmonary aspergilosis, PML due to JC virus) were mainly seen on patients with T CD4 under 200 uL it was not mandatory this condition on this sample – cryptococcal meningitis was described on a patient with 300 uL T CD4.

Lymphopenia was present in the majority of active lupus and T CD4 seems to correlate with severe flare. Lymphopenia seems to be a bystander on the evolution of the disease. Despite rare, unpredictable infections can appear on patients with T CD4 counts superior to 200 uL.

**PS5:105 HDL INHIBITS T CELL PROLIFERATION IS SLE**

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**Purpose** Systemic lupus erythematosus (SLE) is associated with dyslipidemia and increased cardiovascular risk. The SLE pattern is characterised by high plasma levels of low-density lipoproteins (LDL) and triglycerides and low levels of high-density lipoproteins (HDL). HDL is a complex plasma lipoprotein that is recognised for its protective role in atherosclerotic disease. It consists of an outer layer of lipids and

apolipoproteins, with apolipoproteinA-1 (apoA-1) constituting 70% of the protein content, a triglyceride and cholesterol ester-rich core, and several enzymes. In addition to its anti-atherogenic properties, mainly associated with reverse cholesterol transport from vessels, HDL has also anti-inflammatory properties that are not clearly understood. This work aims to show the effect of HDL on T lymphocyte proliferation.

**Methods** Peripheral blood mononuclear cells (PBMCs) were isolated from 7 SLE patients, with at least 4 SLICC/ACR classification criteria and normal serum lipid profiles, and 3 healthy donors. PBMCs were cultured with and without HDL (at the concentrations of 50, 300 and 600 µg/mL) before CD3 and CD28 stimulation. After 4 days in culture, T cell proliferation was measured by flow cytometry through Ki-67 staining. Regulator T cells (Tregs) phenotyping (CD4 +CD25+CD27-FoxP3+) was performed. The expression of the cholesterol transporter ABCA1 in T lymphocytes was also measured by flow cytometry.

**Results** HDL decreased T cell proliferation in a dose-dependent manner, with the biggest effect obtained with the physiologic concentration of 600 µg/mL. The inhibition of T cell proliferation was more pronounced in SLE patients than in the healthy donors. SLE patients tend to have higher baseline T cell proliferation measured by ki-67 expression. There were no differences in the prevalence of Tregs among patients and healthy donors. The expression of ABCA1 on the surface of T lymphocytes was similar between groups.

**Conclusions** This study is the first demonstration of a regulatory effect of HDL on the adaptive immune system of SLE patients. Here we show that HDL can decrease T cell proliferation, which is not correlated with the expression of the ABCA1, the main cholesterol transporter to ApoA-1. We expect to further elucidate HDL effects on the immune system in future studies.

**PS5:106 LOW CIRCULATING BASOPHIL COUNTS IN BIOPSY-PROVEN ACTIVE LUPUS NEPHRITIS**

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The link between circulating basophil counts and renal pathology activity of lupus nephritis (LN) is not fully understood, although it's been observed that Basophils contribute to the immunopathogenesis of this disease.

**Aim of the study** To assess the relationship between low levels of circulating basophils counts and the activity of lupus nephritis.

**Methods** We performed a retrospective clinical study, 140 clinical and pathology samples from patients with biopsy-proven LN from were analysed. The renal activity and classification were evaluated according to renal pathology. SLE disease activity was scored using the SLE Disease Activity Index (SLE-DAI). The correlations between circulating basophil counts and renal pathology activity index were assessed.

**Results** Mean age of our patients was 34.63±12,7 years old, 83% were females. Class III, IV and V lupus nephritis accounted for 21%, 58.7% and 11.2% respectively. Circulating basophil counts correlated with total systemic lupus erythematosus disease activity index (SLEDAI) score (r=-0.3), renal SLEDAI score (r=-0.32), activity index (AI) score (r=-0.29), and renal histologic activity parameters (p<0.05, respectively).