AB0084

INCREASED LEVEL OF NEUROPILIN-1 IN CD4+ T CELL AND ITS CORRELATION WITH DISEASE ACTIVITY OF SYSTEMIC LUPUS ERYTHEMATOSUS

Y. J. Choi¹, E. K. Lee¹, M. S. Lee², C. H. Lee², C. H. Chung², W. H. Yoo¹.
¹Research Institute of Clinical Medicine of Jeonbuk National University-Biomedical Research Institute of Jeonbuk National University Hospital, Internal Medicine, Jeonju, Korea, Rep. of (South Korea); ²Wonkwang University Hospital, Internal Medicine, Iksan, Korea, Rep. of (South Korea)

Background: Semaphorin has been found as a neuronal guidance molecule, but has recently been called “immune semaphorin”, as their critical role in immune cell activation, differentiation and migration has been revealed. In particular, class 4 semaphorin has been shown to contribute to lymphocyte activation and immune homeostasis.

Objectives: This study was aimed to investigate the expression of neuropilin-1 (NRP-1), the receptor of class 4 semaphorin, in the murine mouse model of systemic lupus erythematosus (SLE) and the patients with SLE and the correlation between the expression of NRP-1 and disease activity of SLE.

Methods: The expression of NRP-1 was measured in T cells in spleen and renal tissue in control mouse and TLR-7 agonist-induced lupus mouse by flow cytometry, PCR, and immunofluorescence (IF). CD4+ T cells from human peripheral blood were isolated to investigate the expression of NRP-1 in healthy control and the patients with SLE (n=40).

Results: The frequency of NRP-1 positivity in CD4+ T cells in spleen was significantly higher in lupus mouse group (median [interquartile range]: 15.34 [14.84] %) compared to vehicle mouse group (4.0 [2.77]%). The quantitative analysis of fluorescence intensity in kidney stained for NRP-1 revealed the increased level in lupus group compared to vehicle group. The CD4+ T cells from peripheral blood mononuclear cells in the patients with lupus also showed significantly higher frequency of NRP-1 positive CD4+ T cells than those from healthy controls. Comparing the correlation of the expression of NRP-1 and disease activity with SLEDAI, C3, C4, and anti-DNA antibodies, the significant correlation between NRP-1 and disease activity markers were confirmed.

Conclusion: Our results demonstrate that higher expression of NRP-1 in CD4+ T cells and its significant correlation with disease activity of SLE. These results indicate that pathologic contribution of NRP-1 in the pathogenesis of SLE and potential of targeting NRP-1 for the treatment of SLE.

REFERENCES:

- Nishide M, Kumanogoh A. The role of semaphorins in immune responses and autoimmune rheumatic diseases. *Nat Rev Rheumatol*. 2018 Jan;14(1):19-31.

Disclosure of Interests: None declared
 DOI: 10.1136/annrheumdis-2021-eular.3388

AB0085

ANTI-MULLERIAN HORMONE IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

Z. Alekberova¹, R. Goloeva¹, M. Cherkasova¹, A. Lila¹. ¹VA Nasonova Research Institute of Rheumatology, Systemic Rheumatic Diseases, Moscow, Russian Federation

Background: Anti-Mullerian hormone (AMH) is one of the key parameters for assessing reproductive function and ovarian reserve. The level of AMH correlates with the residual follicular pool in women of reproductive age.

Objectives: To assess AMH levels in SLE female patients of child-bearing potential, and analyze the relationship between AMH levels and disease severity, as well as relationship between serum AMH levels and different therapeutic regimens.
Methods: The study group included 12 women with SLE aged 20-40 years, and the control group - 15 age-matching healthy women. SLE diagnosis was established based on the EULAR/ACR classification criteria, 2019. The SLEDAI 2K was used to evaluate disease activity, and the SLICC index - to evaluate damage. AMH levels was measured using ELISA. AMH reference values ranged within 1.0-10.6 ng/ml. Values <1.0 were interpreted as a decreased ovarian reserve.

Results: SLE patients' mean age was 33.5 [29;38] years, and control group subjects' - 32.0 [26;35] years. Mean disease duration was 11.5 [2.8;18] years. Acute, subacute and chronic SLE was established in 33%, 17%, and 50%, respectively. Disease activity according to SLEDAI 2K was low in 25%, moderate - in 33%, and high - in 42% of pts. The SLICC damage baseline evaluation: no damage - 17%, low - 50%, medium - 16.5%, high-16.5%.

Mean AMH level was 3.5 ng/ml in SLE pts, and 3.1 ng/ml - in the control group, showing no statistical difference. A decrease in ovarian reserve (AMH less than 1.0 ng/ml) was significantly more common in SLE pts - 42% vs 13% in the control group. No correlation was found between AMH levels and the SLICC damage index, AMH and SLEDAI 2K, as well as AMH and SLE duration or clinical course. Detailed analysis showed that all pts with reduced ovarian function had CP included into their therapeutic regimens; the only exclusion within this subgroup - i.e., normal AMH level-6 ng/ml and preserved ovarian function - was documented in a patient who received a cumulative CP dose of 5.6 g. In all other patients a cumulative CP dose was higher, i.e.: 7.2 g, 7.8 g, 10.6 g, and 18.4 g - 1 patient per each dose value. Three pts with low AMH levels within 0.1 - 0.3 ng/ml were 39 years old, while AMH reference values in 33-39y age group are 0.77-5.24 ng/ml. Analysis of gynecological history indicate that episodes of menstrual disorders were significantly more often reported in SLE pts (50% vs 20% in controls, $p=0.001$), similarly, gynecological diseases were also documented in 50% of SLE pts (chronic salpingo-oophoritis, colpitis, endometriosis and uterine endometrioma, subserous uterine myoma, cervical dysplasia, cervical erosion), meanwhile low AMH was found only in 4 SLE pts; there was only 1 subject with gynecological condition - teratoma of the ovaries - in the control group (favorable outcome - surgical removal, preserved fertility and two births after surgery).

Conclusion: Ovarian reserve was significantly more often reduced in women with SLE compared to healthy controls. CP therapy negatively affects ovarian function, and most likely in a dose-dependent manner. In this study, 4 out of 5 patients with reduced ovarian function had gynecological diseases additionally compromising the ovarian reserve. Further studies are needed to clarify potential contribution of both - autoimmune inflammation and SLE therapy - into development of gynecological diseases and loss of fertility.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3402

AB0086

PREGNANCY OUTCOMES IN SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

Z. Alekberova¹, R. Goloeva¹, T. Popkova¹, V. A. Nasonova Research Institute of Rheumatology, systemic rheumatic disease, Moscow, Russian Federation

Background: There's no doubt that SLE has negative effect not only on the course of pregnancy, but also on maternal and fetal outcomes.

Objectives: To clarify pregnancy outcomes in patients with SLE by means of retrospective analysis.

Methods: The study group included 12 women with SLE aged 20-40 years, and the control group - 15 age-matching healthy women. SLE diagnosis was established based on the EULAR/ACR classification criteria, 2019. The SLEDAI 2K was used to evaluate disease activity, and the SLICC index - to evaluate damage. Completed by all women issue-specific questionnaire covered clinical symptoms of SLE and details of obstetric history (characteristics of menstrual and reproductive function, presence of genital and extragenital pathology, previous pregnancies outcomes; previous intrauterine interventions, a history of coagulopathy).

Results: SLE patients' mean age was 33.5 [29;38] years, and control group subjects' - 32.0 [26;35] years. Mean disease duration was 11.5 [2.8;18] years. Acute, subacute and chronic SLE was established in 33%, 17%, and 50%, respectively. Disease activity according to SLEDAI 2K was low in 25%, moderate - in 33%, and high - in 42% of pts. The SLICC damage baseline evaluation: no damage - 17%, low - 50%, medium - 16.5%, high-16.5%. Past pregnancies were documented in 7 out of 12 SLE patients and 6 healthy subjects from the control group. Spontaneous vaginal delivery of a full-term baby was documented in both groups. Unfavorable pregnancy outcomes were significantly more frequent in SLE pts (31% vs 13% in the control group, $p=0.001$). Two SLE pts after cyclophosphane therapy (10.6 and 18.4 g cumulative dose) and low AMH levels (< 1 ng/ml) failed to become pregnant, although never used contraception.