**SAT0026**

**HIGHER LEVELS OF NATURAL ANTI-PHOSPHORYLCHOLINE ANTIBODIES ARE ASSOCIATED WITH LOWER RISK OF INCIDENT CARDIOVASCULAR EVENTS IN YOUNGER PATIENTS WITH RHEUMATOID ARTHRITIS**

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**Background:** The increased cardiovascular (CV) risk in rheumatoid arthritis (RA), especially in seropositive RA, is not fully explained by traditional risk factors. Immuno-inflammatory mechanisms and autoantibodies could be involved in the pathogenesis of atherosclerotic disease. Recent studies have suggested that anti-phosphorylcholine antibodies (anti-PC) of IgM subclass counteract the generation of senescent and IL-17+ T-cells, have atheroprotective effects and may play a role in formation and stabilization of atherosclerotic plaque.

**Objectives:** To investigate the association between IgM anti-PC antibodies with cardiovascular (CV) morbidity in patients with RA in age and sex groups and by serostatus.

**Methods:** The study population was derived from the BARFOT early RA cohort, recruited in 1994-1996. The outcome was CV events i.e. AMI, angina pectoris, hospital discharge and the National Cause of Death Registries. The RA-disease activity and traditional risk factors were assessed according to the protocol. Sera collected at inclusion and the 2-year visit were analyzed with ELISA to determine levels of anti-PC IgM (Athera CVDefine kit, Athera Biotechnologies AB). The Kaplan-Meier estimates and Cox proportional-hazards regression models were applied. Analysis were stratified by median level of IgM anti-PC and performed within strata of age, sex and RA-autantibodies.

**Results:** In all, 654 patients with early RA, 68% women, mean (SD) age 55(14.7) years, DAS28 5.2(1.3), 60% RF-positive and 60% ACPA-positive without prevalent CV events. The value of the "total points" score to the "probability" line up to 87.5%.

**Conclusion:** These results suggest that higher levels of IgM anti-PC are associated with a lower risk of incident CV events over 10 years in younger patients. The favourable atheroprotective effect of IgM anti-PC may be a part of explanation of lower risk of atherosclerotic disease in younger patients with rheumatoid arthritis compared with seronegative RA.

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**SAT0027**

**DEVELOPMENT AND VALIDATION OF A NOMOGRAM COMBINING CLINICAL AND HISTOPATHOLOGICAL SYNOVIAL FEATURES FOR PREDICTING EARLY TREATMENT RESPONSE IN NAIVE TO TREATMENT RHEUMATOID ARTHRITIS**

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**Background:** Rheumatoid Arthritis (RA) is characterized by synovial tissue (ST) heterogeneity at disease onset in terms of inflammatory degree and microanatomical organization being related to treatment response.

**Objectives:** To develop a multiparametric tool for baseline treatment response prediction including disease characteristics and histopathologic features of ST biopsies, using a large single center (SYNGenUnit) naive to treatment RA cohort.

**Methods:** 240 naive to treatment RA who underwent US-guided ST biopsy, at the first clinical evaluation, were enrolled. Clinical and immunological characteristics were recorded for each patient. All ST FFPE specimens were stained with H&E and classified by a pathologist, blinded to clinical characteristics, using the Krenn score [1] to assess the degree of ST inflammation. All naive to treatment RA were treated according to the T2T scheme and DAS remission rate at 6-12 months was recorded. On the basis of the regression analysis, a nomogram was constructed that incorporated the significant factors predicting the "achievement of DAS-Remission at 6 months follow-up" in naive RA. The performance of the nomogram was assessed by discrimination and calibration.

**Results:** Univariate analysis showed that RA who achieved early (6 months) DAS-remission had, at baseline, significantly lower total Krenn score (p<0.001), shorter symptoms duration (p=0.005) and lower disease activity (p<0.001) than RA not achieving this clinical outcome. ROC curve analysis revealed that RA having, at baseline, a total Krenn score <4.5 (AUC=0.95;CI: 0.80-0.95) achieved more likely DAS-remission at 6 months (53.1%) than RA with total Krenn score ≥4.5 (28.9%; p<0.001). Interestingly, RA whose ST was biopsied within 3 months from joint symptoms beginning showed significantly lower ST inflammation as total Krenn score than RA whose ST was analyzed among 3-12 months (p=0.04) or after 12 months (p=0.002) since symptoms beginning. However, in terms of follicular structure presence, the microanatomical organization of the synovial inflammatory infiltrate did not differ comparing RA whose ST was biopsied within 3 months from joint symptoms beginning (44.4%) and RA whose ST was biopsied among 3-12 months (476%; p=0.74) or after 12 months (52.7%; p=0.33) since symptoms beginning.

**Conclusion:** Krenn score is a reliable tool for the semi-quantitative assessment of ST inflammation on US-guided ST biopsies being contingent to baseline disease characteristics and can be integrated within a nomogram to better predict the therapeutic response in naive to treatment RA.

**References:**


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