Background: Interstitial lung disease (ILD) is an extra-articular manifestation of rheumatoid arthritis (RA) detected in 20% to 60% of patients with RA on high-resolution computed-tomography (HRCT) scan and is clinically significant in near 10%. Despite a high morbi-mortality rate, a definite strategy for preclinical ILD screening in patients with RA remains to be determined. To date, several factors have been reported to increase the risk of RA-ILD occurrence (i.e. older age at RA onset, ACPA positivity, male sex, RA disease activity, the MUC5B rs35705950 promoter variant...). However, none of these risk factors has been validated in a prospective cohort of patients with RA. The ESPoir prospective cohort includes patients aged 18 to 70 years with recent arthritis (less than 6 months) and a definite or probable diagnosis of RA.

Objectives: To identify in the ESPoir cohort factors associated with ILD after at least 10 years of RA duration in order to develop a predictive score to identify patients with preclinical RA-ILD.

Methods: An ILD detection by chest HRCT scan was systemically offered to every patient with definite RA after at least 10 years follow-up. Chest HRCT scans were centrally reviewed by an experienced radiologist. Potential predictors of ILD were prospectively collected from baseline to the date of the HRCT scan, and all included patients were genotyped for MUC5B rs3705950. To take into account repeated measurements, trajectories were determined for disease activity, C reactive protein, smoking, treatment exposure (i.e. prednisone, methotrexate [MTX] and biological disease modifying anti-rheumatic drugs [bDMARDs]). A logistic model was used to identify independent predictors for the occurrence of ILD on HRCT scans. Confidence intervals were estimated using sampling methods. A predictive score for preclinical ILD occurrence was developed based on the identified predictors.

Results: 163 RA patients according to 2010 ACR/EULAR classification criteria, none of whom had pulmonary symptoms, were investigated with a chest HRCT scan. ILD was detected in 31 patients (19.0%). The MUC5B rs35705950 minor allele frequency (MAF) was 22.2% and 10.0% in the RA-ILD and RA-noILD populations, respectively (OR univariate=2.6 CI95% [1.2-5.5], P=0.01). After logistic regression, independent predictors for preclinical RA-ILD were male sex (OR=3.7 CI 95% [1.4-10.4]) (Figure 1). No influence of the use of RA-related drugs (prednisone, MTX or 2DMARDs) was identified as risk factor. The logistic model could predict preclinical ILD occurrence after 13 years of RA duration with an AUC=0.82 CI95% (0.72-0.91). A predictive score for preclinical RA-ILD based on the 4 identified predictive risk factors was developed (Sensitivity 80%, Specificity 96%).

Conclusion: In this cross-sectional study of the prospective ESPoir cohort, we identified clinical and genetic predictors for ILD after 13 years of RA duration. We developed a predictive score that could improve risk stratification for preclinical RA-ILD and help physicians identify patients with RA in whom a HRCT scan should be performed.

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Background: Patients with the rheumatoid arthritis (RA) have an increased risk of cardiovascular disease (CVD) compared to general population. However there are insufficient modality to predict future CVD risk in RA.

Objectives: This study assessed whether spenic and arterial activity measured by positron emission tomography/computed tomography (PET/CT) predict the risk of CVD thrombosis events beyond conventional risk factors in patients with RA.

Methods: We enrolled 84 patients with active RA who underwent fluorine-18-fluorodeoxyglucose (FDG) PET/CT and disease activity evaluation at the same time. CVD thrombosis events were independently evaluated, while blinded to activity of PET/CT, during follow up periods. FDG uptake by nuclear medicine physicians was measured in the spleen and ascending aorta and blood pool activity of superior vena cava as SUV (standardized uptake values) and target-to-background ratio (TBR) while blinded to CVD events.

Results: During follow up periods, 19 patients developed CVD thrombosis events. Both spenic and arterial TBR were significantly increased in patients with subsequent CVD events compared to patients without (2.19 ± 0.60 vs 1.80 ± 0.34, p < 0.013, 1.72 ± 0.22 vs 1.57 ± 0.22, p < 0.012). Spenic TBR was associated with an increased risk of CVD events after adjustment for conventional CVD risk factors (hazard ratio: 3.15; 95% confidence interval (CI): 1.46 to 6.79; p = 0.003). Moreover, the association between spenic TBR and CVD events remained significant after adjustment for disease activity (HR: 3.00; CI: 1.36 to 6.63; p = 0.007) and after adjustment for arterial TBR (HR: 3.00; CI: 1.36 to 6.63; p = 0.007).

Conclusion: Our results show spenic metabolic uptake in FDG-PET/CT in patients with RA provide information for subsequent CVD events beyond conventional risk factors.

REFERENCES:

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**POS0098** THE INFLUENCE OF THE ACTIVITY OF RHEUMATOID ARTHRITIS TO INFECTIOUS AND WOUND COMPLICATIONS AFTER TOTAL HIP AND KNEE ARTHROPLASTY

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Background: Surgical treatment of patients with rheumatoid arthritis (RA) is associated with an increased risk of complications. This is due to the presence of inflammation, many variants of the disease, reduced physical activity, severity of functional disorders, prolonged therapy with glucocorticoids, disease-modifying antirheumatic drugs (DMARDs) and biological DMARDs, osteoporosis, as well as activity of the underlying disease.

Objectives: to conduct a comparative analysis of the influence of RA activity levels on infectious complications (periarticular infection) and wound complications (poor healing, divergence, necrosis of the wound edges) after hip and knee arthroplasty in RA patients.

Methods: 1113 arthroplasties were analyzed in patients with RA, which were performed between 2002 and 2019. Of these, 649 total knee arthroplasties and 464 total hip arthroplasties were performed.

Results: Infectious complications after total hip and knee arthroplasty did not occur at 0 grade of disease activity (remission). At the I grade of activity, periarticular infections were detected with a frequency of 0.31%, at the II grade – 0.89%, and at the III level in 3.06% of cases.

Complications from the operative wound occurred in 0.91% of cases with I grade of activity, at II grade with a frequency of 5.68%, and at III – 9.84%. There were no complications from the wound, in patients with remission of RA.

Statistical analysis of the obtained data revealed a significantly higher number of complications in the group of RA patients (p<0.005). During analyzing each type of complication, significant differences were also obtained (p<0.005).

Conclusion: Risk of periarticular infection and complications from the wound increase in patients with a high grade of RA activity. This means that performing arthroplasty as well as other operations, in patients with high RA activity correlates to a high risk of complications.

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**POS0097** JOINT INFLAMMATION TENDS TO RECUR IN THE SAME JOINTS DURING THE RHEUMATOID ARTHRITIS DISEASE COURSE

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Background: It is unknown whether in the disease course of rheumatoid arthritis (RA), inflammation recurs in the same joints over time or is more variable in joint locations. Joint involvement patterns over time might provide clues about the underlying mechanisms causing local joint inflammation.

Objectives: The aim of this study is to assess if local joint inflammation at presentation of RA tends to recur or persist in the same joints.

Methods: Data from the BeSt study were used, a treat-to-target (DAS≤2.4) trial in newly diagnosed RA (ACR 1987 criteria) patients. During 10 years, for each patient 68 joints were assessed three-monthly (41 visits) by trained nurses for swelling, swelling recurred at least once in 46% of the joints with baseline swelling.

Conclusion: The association between baseline swelling and later local swelling was weaker in patients with rheumatoid arthritis. Arthritis Rheumatol. 2017;71:1232-1240.

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