Results: 75 pts with chest CT scans were included in the analysis. Of these, 38.7% (n=29) were non-ILD RA and 61.3% (n=46) had some manifestation of RA-ILD. Of the RA-ILD cohort, 63.0% (n=29) and 37.0% (n=17) were classified as subclinical and clinically evident RA-ILD, respectively. At the time of chest CT scan, RA-ILD (vs non-ILD RA) pts were older with longer disease duration, a greater proportion were male and had higher anti-citrullinated protein antibody and RF titres (Table 1). In terms of RA treatments, a significantly greater proportion of RA-ILD (vs non-ILD RA) pts were on corticosteroids (CS; 47.8% vs 20.7%) and a significantly greater proportion of clinically evident RA-ILD (vs non-ILD RA) were on non-TNF inhibitor (TNFi) biologics. RA-ILD (vs non-ILD RA) pts had numerically higher joint disease activity and modified HAQ score at baseline (Table 1). However, the change in joint disease activity and PROs in RA-ILD pts was numerically greater vs non-ILD RA pts. In a multivariable analysis, RA-ILD status did not impact change in joint disease activity, but baseline joint disease activity was significantly associated with reduction in joint disease activity at 12 months (Table 2).

Conclusion: RA-ILD pts compared with non-ILD RA pts in clinical practice are more likely to be managed with CS therapy and non-TNFi bDMARDs. The improvement in joint disease activity was similar between RA-ILD and non-ILD RA pts. The analysis was limited by small sample size; further studies with larger pt numbers are required to confirm the findings.

Table 2. Multivariable analysis of change in disease activity (CDAI)

Parameter	Estimate	95% CI
Intercept	0.8	(-12.5, 14.0)
No ILD (vs ILD)	-3.9	(-12.8, 5.1)
RA duration, years	-0.1	(-0.5, 0.3)
Baseline CDAI score*	0.4	(0.0, 0.7)
No CS (vs CS)	-3.6	(-13.5, 6.2)
*p<0.05 vs no ILD CS=corticosteroids; ILD=interstitial lung disease		

REFERENCES

- [1] Doyle JT, et al. *Am J Respir Crit Care Med* 2015;191:1403–12.
- [2] Sparks JA, et al. *Arthritis Care Res (Hoboken)* 2016;68:753–62.
- [3] Sparks JA, et al. *Arthritis Rheumatol* 2018; 70(suppl 10):abstract 884.

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SAT0073

STAT3/STAT5 BALANCE AS A BIOMARKER IN RA: CTLA4-IG AND T CELL DIFFERENTIATION THROUGH STAT SIGNALING

Stefano Alivernini¹, Barbara Tulusso², Anna Laura Fedele², Clara Di Mario³, Luca Petricca², Maria Rita Gigante¹, Gianfranco Ferraccioli³, Elisa Gremese¹.

¹Fondazione Policlinico Universitario A. Gemelli IRCCS – Università Cattolica del Sacro Cuore, Division of Rheumatology, Rome, Italy; ²Fondazione Policlinico Universitario A. Gemelli IRCCS, Division of Rheumatology, Rome, Italy; ³Università Cattolica del Sacro Cuore, Division of Rheumatology, Rome, Italy

Background: Regulatory T cells (Treg) play suppressive functions and are modulated by Abatacept (CTLA4-Ig). Limited data are available on CTLA4-Ig effect on Treg population in Rheumatoid Arthritis (RA).

Objectives: The aim of the study was to analyze if STAT3/STAT5 expression in CD4+ T cells in peripheral blood (PB) of RA patients at baseline predicts response to Abatacept treatment (after 12 months follow-up).

Methods: Early RA (ERA) and long-standing RA (LS-RA) patients with conventional DMARDs insufficient response were enrolled in this observational, investigative, monocentric, non-randomized, no profit study, and treated with CTLA4-Ig in combination with methotrexate. Each enrolled RA patients underwent peripheral blood sampling and CD4+ cells isolation using magnetic micro-beads at baseline and after 6-12 months follow-up. Flow cytometric analysis (FACS) for CD4 positive cells phenotype was performed to assess T-regulatory cells (Treg) as CD4+/CD25+/CD127- and CD4+/CD25+/Foxp3+, respectively. STAT3/STAT5 gene expression on CD4+ cells was performed by RT-PCR for each enrolled patient at every time-point follow-up. Low disease activity (LDA) and disease remission (DAS) achievement were assessed at 6 and 12 months follow-up (FU), respectively.

Results: A total of 35 patients were enrolled in the study (16 ERA and 19 LS-RA, respectively). At baseline, ERA and LS-RA did not differ based on clinical parameters. Eight (22.9%) withdrew from the study because of treatment failure (n=6), severe infection (n=1) and death (n=1). LDA or DAS remission within twelve months follow-up were achieved in 28/34 (82.4%) and 16/34 (47.1%) patients, respectively, without any significant difference among ERA and LS-RA. There were no significant differences in the demographic and clinical characteristics of RA patients at study based on LDA or DAS remission status achievement within 12 months FU, even stratifying patients based on disease duration. FACS analysis showed CD4+/CD25+/CD127- and CD4+/CD25+/Foxp3+ cells decrease during CTLA4-Ig treatment (p=0.01 and p=0.02, respectively after 12 months FU), despite disease duration. RT-PCR revealed that PB CD4+ cells of RA patients achieving LDA, but not DAS remission, after CTLA4-Ig treatment have significantly lower endogenous expression of STAT3 and STAT5 compared to RA patients not achieving this outcome (p=0.03 and p<0.001, respectively). Moreover, baseline STAT3/STAT5 ratio in PB CD4+ cells of RA patients directly correlates with Treg cells percentages (CD4+/CD25+/CD127- cells (%): R=0.518, p=0.03; CD4+/CD25+/Foxp3+ cells (%): R=0.549, p=0.02, respectively). Finally, baseline STAT3/STAT5 expression ratio on CD4+ cells > 0.93 (obtained by ROC analysis: AUC:0.754+/-0.100; Sensitivity 75.0%, Specificity: 80.0%) arose as baseline predictor factor of LDA achievement in RA patients treated with CTLA4-Ig [OR(95%CI): 12.0 (1.98-72.89)].

Conclusion: STAT3/STAT5 expression ratio in T cells at baseline identify RA patients better responding to CTLA4-Ig, which decreases Treg cells.

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SAT0074

DAS-28 DISEASE ACTIVITY DEFINES THE TNFR1/2 CO-EXPRESSION PROFILE IN RHEUMATOID ARTHRITIS PATIENTS

Alina Alshevskaya^{1,2}, Julia Lopatnikova¹, Julia Zhukova¹, Oksana Chumasova¹, Nadezhda Shkaruba¹, Alexey Sizikov¹, Sergey Sennikov^{1,3}. ¹Research Institute of Fundamental and Clinical Immunology, Novosibirsk, Russian Federation; ²Biostatistics and Clinical Trials Center, Novosibirsk, Russian Federation; ³Novosibirsk State University, Novosibirsk, Russian Federation

Background: TNF-alpha act as main proinflammatory cytokine in rheumatoid arthritis (RA) immune processes. However, TNF-alpha activity and functions may be regulate not only by soluble receptors (which act as decoys) but also by number, density, and co-expression of its membrane-bound receptors type 1 and 2 (TNFR1 and TNFR2).

Objectives: To analyze the TNFR1/2 co-expression profile in RA patient with different disease activity in comparison to healthy donors (HD).

Methods: PBMC were analyzed from 46 HD and 64 patients with RA using flow cytometry. Patients were divided according to the DAS-28 index into groups with high (n=22, 34.4%), moderate (n=30, 46.9%) and low (n=12, 18.8%) disease activity. Co-expression of TNFR1/2 was evaluated as percentage of cell with different receptors. Number of receptors of each type per cell was counted using QuantiBrite PE beads (BD, USA). The following populations were analyzed: total monocyte pool; common pool of B lymphocytes; common pool of T lymphocytes; cytotoxic T cells (CD8+), T helper cells (CD4+), activated (CD25+) cells among CD8+ and CD4+, T memory (CD45RO+) and naïve T cells

(CD45RA+) among cytotoxic and T helper cells; T regulatory cells (CD4+CD25highCD127low); B1 cells (CD45+CD19+CD5+).

Results: We found that analyzed cell populations differ significantly in the co-expression of type 1 and 2 receptors for TNF α both between each other and compared to healthy donors. The most pronounced differences between groups of patients in the expression profile were shown for B cells, T reg and memory cells (figure).

The total proportion of cells with at least one type of receptors was significantly decreased as compared with HD (in the case of B cells, T-helper memory cells) or increased (in the case of naive cytotoxic T cells, naive T helper cells, monocytes, T regs). This indicator may reflect the overall sensitivity of the cells of the subpopulation to the effects of cytokine. This mechanism may reflect the ability of the cells to react on certain TNF-alpha concentration or anti-cytokine therapy.

Conclusion: The profile of TNFR1/2 co-expression is changed in RA compared to healthy donors. RA disease activity is associated with the changes in the amount and co-expression of type 1 and type 2 receptors for TNF-alpha on the surface of immunocompetent cells.

Disclosure of Interests: None declared

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SAT0075

FACTORS ASSOCIATED TO DEVELOPING CVD AND STROKE IN PATIENTS WITH ESTABLISHED RHEUMATOID ARTHRITIS- A BARFOT COHORT STUDY

Ioana Filip¹, Stefan Bergman^{2,3}, Maria Andersson^{2,4}, BARFOT study group. ¹Capio Movement, Department of Rheumatology, Halmstad, Sweden; ²FoU Spenshult, Halmstad, Sweden; ³Primary Health Care Unit, Department of Public Health and Community Medicine, Institute of Medicine, The Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; ⁴Lund University, Department of Clinical Sciences, Department of Rheumatology, Lund, Sweden

Background: Patients with rheumatoid arthritis (RA) have a higher risk of cardiovascular diseases (CVD) and stroke. More knowledge about associated factors is needed since it could have implications on different treatment strategies

Objectives: To study factors associated to CVD and stroke development in patients with established RA.

Methods: A questionnaire was sent twice to patients with established RA in the BARFOT cohort, in 2010 (n=1525) and in 2017 (n=1046) with a response rate of 73% and 68% respectively. 950 patients responded to both questionnaires. All patients fulfilled the ACR criteria for classification of RA and had a disease duration at inclusion (1992 to 2006) of ≤ 12 months. The patients reported body mass index, smoking habits, tender (TJC) and swollen joint count (SJC, 28-joints), pain intensity (NRS) and physical function (HAQ), health related QoL (EQ5D), and medical treatment (DMARD, corticosteroids and NSAID). Possible factors associated with developing CVD or stroke at the questionnaire in 2017 or not (dependent variable) was studied by using a logistic regression analysis.

Results: Twenty-two patients (3%) developed CVD and 55 (6%) patients stroke over the seven years between the two questionnaires. Patients that developed CVD were older and to a higher rate men. They also more often, 40% vs. 11%, $p=0.001$, reported treatment with corticosteroids at both questionnaires. In a multivariate regression analysis age, OR (95% CI) 1.071 (1.015-1.129), male gender 7.459 (2.664-20.883) and reporting treatment with corticosteroids at both questionnaires 4.473 (1.525-13.117) were associated to CVD. Patients that developed stroke

were older and more often not treated with any DMARD, 30% vs. 18%, $p=0.069$. There were no other significant differences between the groups. In a multivariate regression analysis age, OR (95% CI) 1.081 (1.047-1.117) and reporting treatment with conventional DMARD 0.510 (0.259-1.004) were associated to stroke at the second questionnaire. There were no associations between reported use of NSAIDs and development of CVD or stroke in this study.

Conclusion: Knowledge about factors associated to cardiovascular disease is important when treating patients with established RA. Long-term treatment with corticosteroids seems to increase the risk to develop CVD. Treatment with DMARDs, especially conventional DMARDs, seems to decrease the risk to develop stroke. There were no association between developing CVD or stroke and NSAIDs in this study.

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SAT0076

EARLY REMISSION IS ESSENTIAL TO PREDICT LONGTERM REMISSION. CLINICAL RESULTS OF THE BELGIAN CAP48 RA COHORT

Tatiana Sokolova¹, Aleksandra Avramovska², Pascal Sidiras³, Sandra Kleimberg³, Stephanie Dierckx⁴, Laurent Meric de Bellefon⁵, Serge Schreiber⁶, Clio Ribbens⁷, Michel Malaise⁷, Maria Stoenoiu², Silvana DI Romana⁵, Valérie Badot⁸, Patrick Durez². ¹Coordinator arthritis medical research CAP 48, supported by the RTBF, Brussels, Belgium; ²Rheumatology department, Cliniques universitaires Saint-Luc – Université catholique de Louvain – Institut de Recherche Expérimentale et Clinique (IREC), Brussels, Belgium; ³Rheumatology department, Hôpital Erasme, Cliniques universitaires de Bruxelles, ULB, Brussels, Belgium; ⁴Rheumatology department, CHU UCL Namur, Yvoir, Belgium; ⁵Rheumatology Department, CHU Saint-Pierre, Brussels, Belgium; ⁶Rheumatology department, Hôpital de Jolimont, Jolimont, Belgium; ⁷Rheumatology department, CHU de Liège, Site du Sart Tilman, ULg, Liège, Belgium; ⁸Rheumatology department, CHU Brugmann, ULB, Brussels, Belgium

Background: Early therapeutic intervention is crucial for patients with early rheumatoid arthritis (ERA). The goal of remission is achievable in a proportion of ERA patients.

Objectives: To evaluate the rate of patients in remission at 6 months and to correlate the 3 year remission rate. To identify baseline characteristics differences between patients achieving remission or not, and to report the best remission composite criteria to be used in daily care.

Methods: The Belgian CAP48 cohort supported by the French speaking radiotelevision (RTBF) is a unique prospective observational study of patients less than 50 years old with a recent diagnosis of ERA. All patients are naïve to DMARDs therapy and were recruited in different rheumatologic centers in Brussels and Wallonia. At baseline and every 6 months, demographic, specific clinical evaluation, questionnaires and laboratory were completed and treatment was adapted according each physician decision.

Results: 207 RA patients from 16 centers were analysed (162 F, 45 M, mean age 36.0 years, 27.8% with baseline erosion, 62.3% with ACPA, 59.9% with FR, mean HAQ 1.9, mean DAS28-CRP 4.54, mean SDAI 24.9 and mean CDAI 23.4) history) and a group of 106 patients followed up to 36 months. Clinical results are summarized in this Table.

	DAS28-CRP mean	SDAI mean	CDAI mean	Remission (DAS28-CRP /SDAI/CDAI/Boolean) %	HAQ mean
Baseline n=207	4.54 (1.15)	24.9	23.4		1.09
Months 6 n=207	2.83 (1.21)	10.3	9.7	49.3/29.0/25.1/21.7	0.61
Months 36 n=106	2.47 (1.11)	8.5	7.5	59.4/39.6/34.9/31.1	0.52

Correlation between early 6 months response and long-term remission at 36 months was performed in 106 patients: 63 patients achieved DAS28-CRP remission at 36 months versus 43 patients.

DAS28-CRP and SDAI composite remission criteria observed at 6 months could predict long-term remission observed at 36 months (Figure); with DAS28-CRP, SDAI and CDAI mean values statistically different ($p < 0.01$, test-t) between two groups.

At baseline, the following parameters are similar in two groups "long term remission" and "no long term remission", respectively: age (34.3 vs 33.8 yrs); Female (76.2 vs 72.1%); smoker (24.1 vs 34.2%); ACPA positive (66.7 vs 62.8%); mean DAS28-CRP (4.4 vs 4.7); mean HAQ (1.0 vs 1.2); baseline X-ray erosion (21.7 vs 39.5%).