Conclusions: Iron deficiency anaemia is prevalent in RA patients. A combination use of serum ferritin and TSAT is the most simple, accurate parameter now to differentiate both. log ferritin, transferrin/log ferritin may be promising new parameters in diagnosis of IDA in general population but their use in inflammatory diseases like RA still has a limitation so we suggest further large studies to be done in order to assess their accuracy.

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FRI0082 PREDICTORS OF FATIGUE AND PERSISTENT FATIGUE IN EARLY RHEUMATOID ARTHRITIS: A LONGITUDINAL OBSERVATIONAL STUDY

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Background: Fatigue is a multifactorial and persistent symptom reported by patients with rheumatoid arthritis (RA). It is considered as frequent as pain. It would be of value to identify potential predictive factors of fatigue that can influence on its evolution.

Objectives: To identify predictive factors of fatigue and of persistent fatigue in a large prospective cohort of early RA patients.

Methods: The *Etude de Suivi des polyarthrites Indifférenciées Récentes* (ESPOIR) is a multicenter French cohort of patients with early arthritis. We selected patients fulfilling the 2010 ACR/EULAR criteria for RA during the first year of follow-up. We recorded sociodemographic and clinical characteristics, the SF-36 vitality score, Health Assessment Questionnaire (HAQ) score and 28-joint Disease Activity Score (DAS28) at baseline and every 6 months up to 5 years. The association of fatigue (SF vitality score ≤ 40) or persistent fatigue (SF vitality score ≤ 40 at the end of the study and at least in 50% of visits in the 5 years follow up) with other characteristics were evaluated by bivariate logistic regression models/tests (chi-squared test for qualitative variables and t-test/Mann-Whitney test for quantitative variables). A multivariate logistic regression model was used to determine independent predictors of persistent fatigue.

Results: We included 677 patients (73.4% women, mean $\pm$ SD age 48.6 $\pm$ 12 years); 46.5%, 28% and 22% of RA patients presented fatigue at baseline, 6 months and 5 years of follow up respectively. At baseline, fatigue was independently and significantly associated with single patients (OR=2.5 95% CI [0.30–0.70] $p<0.001$), higher BMI (OR=1.1 95% CI [1.01–1.10] $p=0.007$), higher DAS28 (OR=1.3 95% CI [1.08–1.60] $p=0.006$), higher severity of morning stiffness (scored 0–10) (OR=1.0 95% CI [1.00–1.01] $p=0.012$), higher HAQ (OR=2.4 95% CI [1.70–3.44] $p<0.001$), negativity of FR (OR=1.5 95% CI [1.09–2.29] $p=0.016$) and history of depression or anxiety (OR=6.1 95% CI [3.90–9.83] $p<0.001$). A 14.9% of patients presented persistent fatigue. Independent predictors of persistent fatigue at 5 years of follow-up were HAQ (OR=2.5 95% CI [1.63–3.67] $p<0.001$), history of depression/anxiety (OR=3.7 95% CI [1.53–9.15] $p=0.004$), >3 comorbidity (OR=2.1 95% CI [1.23–3.73] $p=0.007$), dry syndrome (OR=2.4 95% CI [1.39–4.17] $p=0.002$), and negativity in RF (OR=1.85 95% CI [1.07–3.21] $p=0.027$).

Conclusions: Fatigue was frequent in this cohort of early RA patient, its presence decreased at 6 months and remained stable over time. Baseline fatigue and persistent fatigue were both predicted by functional impairment, negativity of RF and history of depression or anxiety. Disease activity measured by DAS28 was strongly associated to fatigue at baseline but it was not a predictor of persistent fatigue.

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FRI0083

ADJUSTMENT OF THE THRESHOLD MAY IMPROVE CARDIOVASCULAR RISK STRATIFICATION IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is associated with increased cardiovascular (CV) risk. Besides monitoring of the disease activity, identification of high CV risk patients is of great importance^{1,2}.

Objectives: The aim of the study was to assess the abilities of 3 risk models (SCORE, QRisk2 and 10 year ASCVD) in detecting high CV risk RA patients.

Methods: 56 patients with RA (ACR/EULAR 2010 without known CV disease were examined (84% females, age 58.4 $\pm$ 14.1 (M $\pm$ SD) years, BMI 26.1 $\pm$ 5.4 kg/m², smokers 9%, arterial hypertension (AH) 64%, dyslipidemia 57%, diabetes 7%). Median duration of RA was 7 years (IQR 2–14). Seropositive RA was diagnosed in 73% of patients. Median hsCRP was 7.8 mg/dl (IQR 2;21.4), rheumatoid factor (RF) – 61.2 IU/ml (IQR 18.5;179.2), mean DAS-28(CRP) – 3.7 $\pm$ 1.2. All patients received disease-modifying antirheumatic drugs. SCORE, QRisk2 and 2013 ACC/AHA 10 year ASCVD risk and EULAR recommended modified versions were calculated. Patients with SCORE $\geq 5\%$, QRisk2 $\geq 20\%$ and ASCVD risk $\geq 7.5\%$ were classified as having high CV risk. Carotid intima-media thickness (CINT) ≥ 0.9 mm and/or carotid plaques detected by ultrasonography were used as the gold standard test for high CV risk. $p<0.05$ was considered significant.

Results: The median SCORE, QRisk2 and ASCVD were 2.2% (IQR 0.6;4.9), 10.2% (3.4;19.2) and 4.9% (1.5;12.8) respectively. The proportion of high-risk patients was as follows: 14 (25%), 13 (23%), 24 (43%) for SCORE, QRisk2 and ASCVD. Mean CINT was 0.76 $\pm$ 0.24 mm. US criteria for subclinical atherosclerosis (US+) were found in 27 (48%) pts. Discriminating capacities for the indexes were as follows: AUC 0.723 (CI 95% 0.626–0.821) for SCORE, AUC 0.705 (CI 95% 0.606–0.804) for QRisk2 and AUC 0.837 (CI 95% 0.757–0.917) for ASCVD. The percentages of high-risk patients in US+ group were as follows: 13 (48%), 12 (44%) and 21 (78%), respectively, ($p<0.05$ compared to ASCVD). After multiplying by 1.5 EULAR 2016 mASCVD reclassified 2 (7.4%) and mSCORE – 4 (14.8%) pts from moderate to high risk. Use of lower cut-off values for risk indices (SCORE $\geq 1\%$, QRisk2 $\geq 10\%$ and ASCVD $\geq 5\%$) resulted in better detection of US+pts (100%, 85% and 85% respectively).

Conclusions: The 2013 ACC/AHA 10 year ASCVD risk estimator is better than the SCORE and QRisk2 indices for the detection of high CV risk RA patients. Adjustment of the threshold may be a better modification of risk scales than use of the EULAR multiplier factor.

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FRI0084

INTENSE AEROBIC AND RESISTANCE EXERCISE REDUCES THE FREQUENCY OF PERIPHERAL BLOOD REGULATORY CELL POPULATIONS IN ELDERLY PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: RA is an autoimmune joint disease driven by complex immune dysregulation. Exercise can improve immune health and is beneficial for physical function in elderly patients with RA, but the immunological mechanisms are largely unknown.

Objectives: We evaluated the effect of a person-centred randomised controlled exercise programme on regulatory immune cell populations in aged persons with RA.

Methods: Aged persons with RA were randomised to either a 20 week of aerobic and resistance exercise intervention of moderate-to high intensity (n=24) or to an active control group performing low-intensity home exercise (n=25). Blood samples were collected at baseline and after 20 weeks. The frequency of the adaptive regulatory populations Foxp3+CD25+CD127⁺CD4+T cells and CD24hiCD38hi B

cells and the CD33 +CD11b+myeloid derived suppressor cells were assessed using flow cytometry.

Results: After 20 weeks of exercise intervention there was a decrease in the frequency of Foxp3 +CD25+CD127 regulatory T cells and CD24hiCD38hi B cells but no change was observed in the active control group. The reduction in Tregs by exercise was most pronounced in the female participants. Despite lower levels of adaptive immune cell populations the disease activity did not increase.

Conclusions: Aerobic and resistance exercise in elderly patients with rheumatoid arthritis lead to a decreased number of regulatory Foxp3 +CD25+CD127 regulatory T cells and CD24hiCD38hi B cells. This decrease was not associated with an increased disease activity score or increased inflammation.

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FRI0085

A STUDY OF THE RELATIONSHIP BETWEEN SERUM VITAMIN D LEVEL AND DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS PATIENTS

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Background: Vitamin D is an essential component of our body. Approximately 3% of the human genome is directly or indirectly regulated by the Vitamin D endocrine system, which supports the idea that Vitamin D insufficiency has widespread adverse consequences for human health.^[1] Till date several studies have been done regarding the relation of Vitamin D and Rheumatoid Arthritis but there are limited studies in Eastern India. Hence this study is being done to examine the relation of serum 25 hydroxy Vitamin D level and Disease Activity in Rheumatoid Arthritis patients.

Objectives:

- To examine the relationship between Serum 25 Hydroxy Vitamin D level and SDAI (Simplified Disease Activity Index) in Rheumatoid Arthritis patients.
- To examine the relationship between Serum 25 Hydroxy Vitamin D level and Tender Joint Count(TJC), Swollen Joint count(SJC) and CRP in Rheumatoid Arthritis patients.
- To evaluate the relation of serum vitamin D level with various socio demographic factors like Gender, Diet, Occupation, Season, Height, Weight, BMI in Rheumatoid Arthritis Patients.

Methods: Ninety six RA patients attending The Rheumatology clinic of Out Patient Department of An Urban Tertiary care hospital (Latitude of KOLKATA is 22°32'N) from October 2013 to September 2014, fulfilling the ACR –EULAR 2010 criteria for classification of RA, were included in the study. 25(OH) vitamin D levels were measured. Disease activity of RA was assessed by SDAI score.

Results: More than Ninety Percent of the RA patients were found to have either Vitamin D deficiency or insufficiency. The mean serum vitamin D level of these RA patients was 20.02 (±8.92) ng/ml. The RA patients with High Disease Activity (SDAI between 26.1 and 86) had significantly low ($p < 0.0001$) mean serum vitamin D level [11.11 (±6.08) ng/ml] than those with Moderate (SDAI between 11.1 and 26) or Low Disease Activity (SDAI between 3.4 and 11.0) whose serum vitamin D level was 21.15 (±7.47) ng/ml and 25.58 (±7.30) ng/ml respectively. There is a significant negative correlation between the Serum Vitamin D level and SDAI score ($r = -0.669$, $p < 0.0001$) in the whole group of the study population. However On analysing the data separately in RA patients with Vitamin D deficiency, insufficiency and sufficiency, this significant relation is separately evident only in the RA patients with Vitamin D deficiency (serum vitamin D level < 20 ng/ml) but not in those who were in the insufficient or sufficient groups. There is an independent negative impact of Simplified Disease Activity Index (SDAI) on Serum Vitamin D level (Adjusted $R^2 = 0.464$, $p < 0.0001$).

Conclusions: RA patients having high disease activity in terms of SDAI Score had significantly low vitamin D level compared to patients of RA having low or moderate disease activity. Lower levels of serum vitamin D was associated with increased disease activity in RA patients. On subgroup analysis, there is significant negative correlation separately evident only in the RA patients with Vitamin D deficiency (serum vitamin D level < 20 ng/ml) but not in those who were in the insufficient or sufficient groups.

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FRI0086

IS THE DISCORDANCE BETWEEN THE DOCTOR AND THE PATIENT A DETERMINANT OF ADHERENCE?

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Background: Adherence is a critical factor in the therapeutic response in rheumatoid arthritis (RA), which may be influenced by the doctor-patient relationship. In the ARCO study, we previously reported a percentage of lack of adherence to the subcutaneous biologic of 14.3% during the first 14 months of treatment, and that the adherence was better in patients without induction and with a monthly administration schedule.¹ In this *post hoc* analysis, we explored whether doctor-patient disagreements may be related to lower adherence rates.

Objectives: To analyse the percentage of patients with discrepancies in the evaluation of the activity of the disease between doctors and patients and a possible association between the existence of disagreement and adherence to subcutaneous biological drugs.

Methods: The ARCO study was a multicenter, cross-sectional study in which patients with RA were included according to EULAR-ACR 2010 criteria, who had been prescribed a subcutaneous biological drug in the previous 12–18 months. As part of the evaluation of the disease, patients and doctors were asked to rate the disease on a visual analogue scale (VAS), with values ranging from 0 to 10; with higher values indicating worst symptoms. Disagreement was defined as a difference of ≥ 3 points between the absolute values. Adherence was assessed retrospectively by means of the Medication Possession Ratio (MPR), considering adherence those patients with MPR $> 80\%$. The association between adherence and disagreement was studied using bi and multivariate logistic regression models with covariates-adjustments.

Results: We included 360 patients (77.5% women, mean age: 55 ± 0.6 years). Disagreement was detected in 56 (15.5%). In patients with disagreement, the mean VAS score of the patient was 5.75 ± 1.8 versus 2.7 ± 2.2 in the group without disagreement ($p < 0.001$), and there were no differences in terms of the doctors VAS (group with disagreement $= 2.7 \pm 1.8$ versus 2.2 ± 2.0 in the group without disagreement, $p = 0.110$). The two groups of patients presented differences in terms of age (5 years more than average in the group with disagreement, $p = 0.010$), presence of comorbidity (14% more frequent in the group with disagreement, $p = 0.030$) and the value of the mean DAS28 (0.6 points higher in the group with disagreement, $p < 0.001$). Among the patients who presented a VAS disagreement, the percentage of non-adherence was 10.7%, and of 14.5% among those who had a VAS similar to the doctor ($p = 0.45$). The regression analysis showed no difference in the association between adherence and disagreement; by introducing into the models covariates associated with adherence (induction, frequency of administration and age) or with disagreement (age, comorbidity and DAS28).

Conclusions: We observed a disagreement between patients and doctor VAS scores in 15.5% of cases, with higher values coming from patients. We did not observe an association between this disagreement and adherence to subcutaneous biological drugs.

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FRI0087

REGIONAL AGE- AND SEX-SPECIFIC INTIMA-MEDIA THICKNESS CRITERIA IN YOUNG PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is associated with early progression of cardiovascular (CV) diseases. The CV risk calculators had been verified on a specific population¹ and should be applied predominantly for them. Systematic Coronary Risk Evaluation (SCORE) was recommended by EULAR for use in RA patients with multiplying coefficient 1.5.² Nevertheless, SCORE don't consider RA-specific factors and couldn't be used in young patient. For timely prevention