Conclusions: Hypertensive females with rheumatoid arthritis are characterised by higher frequency of insulin resistance, endothelial dysfunction, adiponectin level changes which associates with subclinical atherosclerosis manifestations.

Disclosure of Interest: None declared

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FRI0080 THE ROLE OF PAIN IN RHEUMATOID ARTHRITIS (RA) PATIENTS' ASSESSMENTS OF THEIR HEALTH

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Background: Patients often describe pain as the most important symptom of RA. Despite advances in RA therapy to improve disease control, some patients continue to have significant pain^{1,2}. The relative impact of pain on RA patients' evaluations of overall health and RA-specific global assessments is unknown.

Objectives: Determine the relative role of pain in RA patients' health assessments.

Methods: Data derived from the Forward (The National Databank for Rheumatic Diseases) longitudinal cohort, collected January-May 2017. Respondents (n=5471) have rheumatologist-confirmed RA. Two health assessments were examined: ¹ overall satisfaction with health (SAT) measured by the item: "How satisfied are you with your health now?" with responses of very unsatisfied to very satisfied; and ² patient global assessments of RA impact (GBL) measured using a numeric rating scale (NRS): "Considering all the ways that your RA affects you, rate how you are doing on a scale of 0–10, where 0=very well and 10=very poor." For regression analyses, SAT was dichotomized as "very satisfied" or "somewhat satisfied" vs. other responses. Current pain severity was rated on an NRS from 0 (no pain) to 10 (extreme pain). Spearman correlations examined the association of pain with SAT and GBL. Initial multiple regression analyses (table 1, Model 1) examined the following as predictors of SAT and GBL: age, sex, education, disease duration, obesity (BMI ≥30), conventional and biologic DMARD use, Rheumatic Disease Comorbidity Index³ (RDCI), self-report of depression, fatigue, and functional limitations (Health Assessment Questionnaire [HAQ] score). Follow-up models (Model 2) added pain to determine its relative independent role in health assessments.

Results: The sample was 84% female, mean age 65 years, mean RA duration 22 years. 53% were satisfied with their health, and mean GBL was 3.6±2.5. Mean pain severity rating was 3.8±2.8. Correlations of pain with SAT and GBL were 0.58 and 0.71, respectively (each p<0.0001). Regression models predicting both SAT and GBL improved with the addition of pain (table 1). Pain was significantly and independently associated with both health assessments.

	Model 1 (excluding pain)	Model 2 (adding pain)
Satisfied with health		
Pain		0.81 (0.79, 0.84)*
Model R ²	0.37	0.40
Global assessment of RA		
Pain		0.33 (<0.0001)†
Model R ²	0.51	0.57

*Odds ratio (95% CI)

† b (p-value)

Regression models included age, sex*, education, disease duration, obesity, medications, RDCI, depression, fatigue*, and HAQ*. Variables noted with asterisk were also statistically significant (p<0.05) in both final models.

Conclusions: Pain plays a critical role in RA patients' assessments of general and RA-specific health. Analyses suggest that pain may be more important to RA global assessments than to overall health satisfaction, though the clinical relevance of this difference is not known. RA global assessments are included in some indices of disease activity. Future research should focus on distinguishing between non-inflammatory and inflammatory causes, which may lead to more accurate assessment of RA disease activity.

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FRI0081

THE IMPORTANCE OF TRANSFERRIN SATURATION, SERUM FERRITIN, LOG FERRITIN AND TRANSFERRIN/LOG FERRITIN IN DIFFERENTIATING IRON DEFICIENCY ANAEMIA FROM ANAEMIA OF CHRONIC DISEASE IN RHEUMATOID ARTHRITIS PATIENTS

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Background: The most common types of anaemia in rheumatoid arthritis (RA) are iron deficiency anaemia (IDA) and anaemia of chronic disease (ACD). The differentiation between both is very important and challenging.

Objectives: is to select the most simple, cheap, accurate method differentiate IDA from ACD in RA patients.

Methods: This case control study was carried out on 80 RA patients. Group I 40 RA patients with anaemia Group II 40 RA patients without anaemia, complete blood count, assessment of disease activity using DAS 28 score, serum iron, total iron binding capacity (TIBC) "transferrin level", transferrin saturation (TSAT), serum ferritin, log ferritin and transferrin/log ferritin were tested, then we divided the patients in group 1 into 2 subgroups according to TSAT : group Ia (RA patients with anaemia and low TSAT) and group Ib (RA patients with anaemia and normal TSAT) and we compared the parameters.

Results: There was a statistically significant difference between anaemic and non anaemic RA patients as regard serum iron level and transferrin saturation and there was no significant difference as regard serum ferritin, log ferritin, transferrin and transferrin/log ferritin. Among the anaemic group (67.5%) had low TSAT (IDA) and only (32.5%) had normal TSAT (ACD). In these 2 subgroups there was no significant differences as regard DAS28 score, blood indices, serum ferritin and transferrin/log ferritin except Log ferritin and there was positive correlation between TSAT and (ferritin and log ferritin) and significant negative correlation between TSAT and transferrin/log ferritin.

Abstract FRI0081 – Table 1. Clinical and laboratory parameters in both groups

Characteristic	Group I ⁴⁰ RA +anaemia	Group II ⁴⁰ RA without anaemia	P
DAS-28	2.99±1.07	2.35±0.77	0.002*
Hb (g/dl)	9.62±0.96	12.95±0.64	<0.0001*
MCV (fl)	79.71±7.29	83.0±9.34	0.083
MCH (pg/cell)	26.06±4.05	28.05±2.66	0.006*
MCHC (g/dl)	31.1±2.21	31.23±2.38	0.8
Serum iron (µg/ml)	0.66±0.37	0.89±0.38	0.0076*
Serum ferritin (ng/ml)	83.02±93.08	84.87±86.82	0.927
TIBC (µg/ml)	3.94±1.06	3.71±0.59	0.23
TSAT (%)	17.7±10.6	24.73±11.36	0.0054*
Log ferritin	1.61±0.75	1.7±0.46	0.52
Transferrin/Log ferritin	3.23±3.8	2.41±0.9	0.18

Figure 1 Correlation between TSAT and (serum ferritin, log ferritin and Transferrin/Log ferritin)

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 (CMT) ≥ 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 CMT 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