Table 2

	RA group (n=44)	Control group (n=26)	*p*
LVCR, n (%)	14 (32.6)	2 (8)	**0.021**
LVCR or LVH, n (%)	15 (34.1)	3 (11.5)	**0.037**
Diastolic dysfunction, n (%)	20 (45.5)	9 (34.6)	0.374
Left ventricular mass index (g/m²), mean ± SD	66.77 ± 17.11	68.65 ± 18.31	0.668
EF (%), mean ± SD	60.85 ± 4.94	62.62 ± 6.67	0.228
GLS (%), mean ± SD	-20.66 ± 2.63	-21.6 ± 2.52	0.189
TAPSE (mm), mean ± SD	23.23 ± 4.34	23.84 ± 2.71	0.485

LVCR - Left ventricular concentric remodeling, LVH - Left ventricular hypertrophy, GLS - Global longitudinal strain, TAPSE - Tricuspid annular plane systolic excursion.

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FRI0142 NEUTROPENIA IN RHEUMATOID ARTHRITIS. INCIDENCE, PROGNOSTIC FACTORS, NATURAL HISTORY AND OUTCOME

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Background: Neutropenia is an uncommon finding in the context of rheumatoid arthritis (RA). The incidence and association with RA features is not yet well-defined.
Objectives: To determine the incidence and severity of neutropenia in an early RA inception cohort, explore possible association with RA features and describe its impact on patient's management.
Methods: The Scottish Early Rheumatoid Arthritis (SERA) inception cohort prospectively recruited newly diagnosed RA patients (ACR-EULAR 2010 criteria), who were followed-up every 6 months. Patients who developed at least one episode of neutropenia (grade 1: <2000/μL, grade 2: <1500/μL, grade 3: <1000/μL, grade 4: <500/μL) were compared with patients who never developed neutropenia. Binominal logistic regression was performed, exploiting the enter model and using the occurrence of neutropenia as dependent variable.
Results: 77 episodes of neutropenia were observed in 60 (8.6%) out of 698 RA patients, who were followed up for a median (range) time of 18 (6–48) months. Neutropenia occured in 12 (0–120) [median (range)] months after RA diagnosis. The majority had mild neutropenia (grade 1: n=49, grade 2: n=9, grade 3: n=0, grade 4: n=2) and the mean ± SD number of neutrophils/μL was 1.68±0.35. Of the 77 neutropenic episodes recorded, coexistent lymphopenia was found in 13.0%, leukopenia in 70.1%, thrombocytopenia in 1.3% and anaemia in 32.5%. At the time of the neutropenia, most of the patients were in remission (DAS28<2.6: 53%, DAS28<3.2: 15.5%, DAS28≤5.1: 22.4%, DAS28>5.1: 8.6%). Neutropenia was a single episode in the majority (76.7%) of the patients and led to treatment discontinuation in 11.7% of them.
Patients who subsequently developed neutropenia, were more likely females (p=0.03) and non-smokers (p=0.0009) (Table 1). Treatment received for RA was comparable between the two groups. Binominal regression analysis confirmed female gender [p=0.017, Exp(B): 2.587] and not smoking [p=0.032, Exp(B): 2.880] as predictors of neutropenia development.
During total follow-up time, patients who had at least one episode of neutropenia they also manifested more commonly anaemia (p=0.04) and lymphopenia (p=0.03). The rate of infections/1000 person-months did not differ between patients who developed neutropenia and those who did not [5.75 (2.47–11.33) vs 4.1 (3.13–5.47), p=0.399].

Table 1. Baseline patients characteristics

	Neutropenia	No Neutropenia	p value
Patients characteristics	N=60	N=638	
Age, mean (mean±SD)	58.7±14.5	58.7±13.2	0.978
Female gender, No (%)	50 (83.3%)	414 (64.9%)	0.03
Total follow-up (months), median (range)	18 (6–48)	18 (6–48)	0.173
Smoking, No (%)	5 (8.3)	172 (27.0)	0.0009
Smoking (present/past/never)	5/23/32	172/240/225	0.002
Anaemia[a], No (%)	8/57 (14.0)	133/631 (21.1)	0.235
Thrombocytopenia[b], No (%)	0/57 (0.0)	0/631 (0.0)	1.000
Leukopenia[c], No (%)	1/57 (1.7)	3/631 (0.4)	0.293
Lymphopenia[d], No (%)	4 (7.0)	34/631 (5.4)	0.545
RF positive, No (%)	28/36 (77.8)	295/401 (73.5)	0.693
Anti-CCP positive, No (%)	34/48 (70.8)	410/527 (77.8)	0.282
Baseline DAS28 (mean±SD)	4.8±1.6	5.02±1.42	0.408

[a]Hb<120 g/L, [b]platelets <100000/μl, [c]white blood cells: $<4x10^9$/L, [d]lymphocytes: $<1x10^9$/L.

Conclusions: Neutropenia was observed in about 9% of patients in this early RA cohort. It was usually mild, transient and not associated with increased infection rates. Interestingly, not-smoking and female gender were associated with neutropenia.
Disclosure of Interest: None declared
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FRI0143 PREVALENCE AND DETERMINANTS OF PERIPHERAL ENDOTHELIAL DYSFUNCTION IN A COHORT OF RHEUMATOID ARTHRITIS PATIENTS: PRELIMINARY RESULTS FROM A MULTICENTER CROSS-SECTIONAL STUDY

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Background: RA patients suffer of a life expectancy significantly reduced with respect to the general population mainly due to cardiovascular (CV) disease. Endothelial dysfunction (ED), the early step in atherosclerotic process, is more evident in RA than in the general population. Peripheral arterial tonometry (PAT), a simple, rapid, and objective tool for evaluation of ED, measures small digital artery reactive hyperaemia after an ischemic stimulus in forearm. PAT shows high grade of correlation with coronary ED and predicts future CV events in the general population.
Objectives: To define prevalence and determinants of peripheral ED in RA.
Methods: Data from 633 RA patients free of previous CV events prospectively enrolled in the EDRA study* (ClinicalTrials.gov: NCT02341066) were analysed. Reactive hyperemia index (LnRHI) was evaluated by PAT using the EndoPAT2000 device: ED was defined by LnRHI <0.51. Linear and logistic regression analysis were performed to define independent predictors of ED in RA patients. A p-value <0.05 was considered statistically significant.
Results: Peripheral ED was documented in 212 out of 633 RA patients (33.3%). A linear regression for multiple variables (stepwise method) performed including into the models variables showing significant association with LnRHI at the univariate regression analysis (systolic blood pressure, HDL cholesterol levels, triglycerides levels, smoking habit and ACPA positivity; Age and gender were forced) showed that only higher levels of triglycerides [B coefficient (95%IC) = -0,001 (-0,001–0,00); $p<0.05$] negativity for ACPA [B coefficient (95%IC) = -0,070 (-0,135–0,005); $p<0.05$] and smoking habit [B coefficient (95%IC) =0,01 (0,043–0,156); $p<0.05$] were independently related to lower values of LnRHI. No significant correlation between peripheral ED and RA activity (DAS-28, CDAI, SDAI, HAQ), burden of systemic inflammation (CRP, ESR) and type of immunosuppressive treatment (steroids, NSAIDs, DMARDs and bDMARDs) was found. At logistic regression analysis ACPA negativity [OR ((95%IC) = 1.57 (1.04–2.21); $p<0.05$] and smoking habit [OR ((95%IC) = 1.64 (1.06–2.53); $p<0.05$] indipendently conferred a major risk of peripheral ED.
Conclusions: This study demonstrates for the first time a very high prevalence of peripheral ED in patient with RA free of previous CV events. Triglycerides levels and smoking habit, among traditional cardiovascular risk factor, showed a significant correlation with lower peripheral ED. Surprisingly ACPA negativity confers an increased risk for ED in RA population. Moreover, other than expected, systemic inflammation does not appear to influence peripheral ED in RA population. In conclusion our data further support the notion that atherogenesis in RA is only partially driven by traditional CV factors. The negative association between ACPA and ED warrants further investigation.
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FRI0144 EVALUATION OF FACTORS AFFECTING FATIGUE IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Fatigue is a common and disturbing symptom in patients with Rheumatoid arthritis (RA) (1,2). Measuring fatigue, understanding its contributory factors, and treating it lead to better patient outcome (3).
Objectives: The aim of this study is to investigate the relation between fatigue and pain, functional status, disease activity in patients with RA and to determine the effect of fatigue on the quality of life of patients with RA.

Methods: A total of 141 patients (103 female, 38 male) who were diagnosed RA according to ACR (American College of Rheumatology) diagnostic criteria were included in the study. Fatigue Symptom Inventory (FSI) was used for evaluation of fatigue. While the disease activity was determined using the Disease Activity Score-28 (DAS28), the Health Assessment Questionnaire (HAQ) was used to determine the functional status. The pain intensity was determined using 10 cm Visual Analogue Scale-Pain (VAS-pain).
Results: The mean age of the patients is 54.67±10.70 years and the mean duration of illness is 14.31±10.89 years. When the relationship between fatigue and other factors was examined, a statistically significant relationship was found between FSI fatigue severity scores (maximum, minimum, mean, current), FSI duration scores (number of days felt tired, amount of time felt tired), FSI interference score and HAQ, number of swollen joints, number of tender joints, VAS rest and VAS motion values ($p<0.05$). There was a statistically significant lower correlation between FSI fatigue severity scores (at least, mean) and DAS28 (r: 0.216, r: 0.181, respectively). There was no significant relationship between FSI scores and age, duration of illness, steroid use
Conclusions: Fatigue affects patients independently of disease duration in patients with RA. Fatigue is associated with disease activity, functional status, and pain. For this reason, fatigue in RA patients should be considered as an important symptom that should not be overlooked and should be struggled.
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FRI0145 DOES PAIN HAVE INFLUENCE ON HEALTH ASSESSMENT QUESTIONNAIRE DISABILITY INDEX (HAQ-DI) IN RHEUMATOID ARTHRITIS PATIENT? AN ATTEMPT TO EVALUATE EFFECTIVENESS OF PAIN VAS (PS-VAS) ON HAQ-DI IN REAL CLINICAL PRACTICE –

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Background: Health Assessment Questionnaire Disability Index (HAQ-DI) is the most important index in treatment for rheumatoid arthritis (RA) patient. HAQ-DI expresses patient's disability in daily life (ADL), and this is influenced by disease activity (ACT-HAQ) and joint structural damage (DAM-HAQ), and aging when patient gets older in senectitude (AGE-HAQ) (1–3). One more factor that possibly makes influence on HAQ-DI is patient's pain. However, this problem is not discussed at all.
Objectives: We have investigate patient's pain and its effect on HAQ-DI in our clinical data in order to evaluate whether pain influences on HAQ-DI, and to make assessment existence of pain related HAQ-DI (PAIN-HAQ)
Methods: RA patients who have been treated continuously for more than five years, who had visited later than October 31th, 2016, were picked up in this study. Patients average 28-joints disease activity score with C-reactive protein (DAS28-CRP), modified HAQ (mHAQ), Sharp/van der Heijde Score (SvdHS), age, and pain score calculated by visual analogue scale (PS-VAS) were calculated in fifth treatment year. Average values of these parameters have been calculated. Relationships among these factors have been investigated statistically using multiple linear regression analysis (MLR). After evaluation of relationship of each pairs of these factors, the relationship between HAQ-DI and the other factors had been evaluated from modified data of these patients in minimize the effect of parameters other than PS-VAS and data that minimized effectiveness of PS-VAS with MLR.
Results: 382 patients had been picked up. Their sex distribution was 87 for male and 295 for female, and their average values and standard deviations of age, DAS28-CRP, HAQ-DI, SvdHS, and PS-VAS were 68.99 and 13.47, 1.91 and 0.54, 0.43 and 0.55, 54.97 and 67.30, and 22.96 and 17.85, respectively. HAQ-DI demonstrated significant regression with all of DAS28-CRP, SvdH, age, and PS-VAS (<0.01). DAS28-CRP demonstrated positive correlation with PS-VAS, HAQ-DI, and SvdHS, but negatively correlated significantly with age (<0.01). PS-VAS demonstrated positive correlation with HAQ-DI and DAS28-CRP, but negatively correlated with SvdHS significantly (<0.01), while no significant correlation demonstrated with age. SvdHS demonstrated positive correlation with DAS28-CRP and HAQ-DI, but negative correlation with PS-VAS significantly (<0.01), while no significant correlation demonstrated with SvdHS. Age demonstrated positive correlation with HAQ-DI, but negatively correlated with DAS28-CRP (<0.01), while no significant correlation demonstrated with PS-VAS and SvdHS (Figure 1).
After minimizing the data effectiveness of DAS28-CRP, Age, and SvdHS on HAQ-DI, HAQ-DI demonstrated significant regression only with PS-VAS. When the effectiveness of PS-VAS was minimized, HAQ-DI demonstrated significant regression with parameters other than PS-VAS. Threshold of PS-VAS was 15mm.

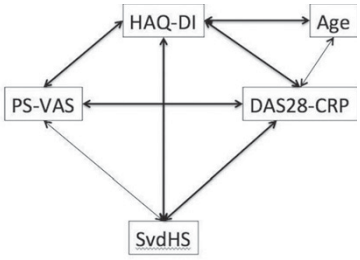

Figure 1: Schematic relationship among HAQ-DI, DAS28-CRP, SvdHS, Age, and PS-VAS. Thick lines demonstrate significant positive correlations, and thin lines demonstrate significant negative correlations.

Conclusions: These results suggested that HAQ-DI is influenced PS-VAS when it is no less than 15mm. Therefore, we conclude that HAQ-DI consists with PAIN-HAQ in adding with ACT-HAQ, DAM-HAQ, and AGE-HAQ.
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FRI0146 ANTI-ELASTIN AND ANTI-ELASTASE AUTOANTIBODIES: POTENTIAL CLINICAL AND DIAGNOSTIC IMPLICATIONS IN RHEUMATOID ARTHRITIS

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Background: Elastin is an ubiquitous molecule, presented in connective tissue matrix, including skin, ligaments, lungs, and blood vessels. Elastase is a characteristic protease, considerably presented in neutrophils and in pancreas. Autoantibodies (Ab) to elastin and to elastase are promising candidate biomarkers in rheumatoid arthritis (RA).
Objectives: To explore potential clinical and diagnostic utility of anti-elastin and anti-elastase Ab in RA.
Methods: The research was carried out in agreement with the WMA Declaration of Helsinki principles and was approved by Volgograd Regional Committee on Medical Ethics. All the patients signed the informed consent. We enrolled 106 adult patients with definite RA in Volgograd Municipal Hospital #25, the diagnosis have been established using ACR-EULAR criteria (2010). For ROC analysis calculations we used mixed control group consisted of 19 patients with ankylosing spondylitis, 32 with gout, 11 with psoriatic arthritis, and 22 with reactive arthritis. Serum anti-elastin and anti-elastase Ab concentrations were evaluated by ELISA, using antigens immobilized on magnetic polyacrylamide beads, which were previously described by our group [1]. Antibody concentrations were expressed as relative optical density units (ODU). The cutoff values for anti-elastin and anti-elastase Ab presence were 0.104 and 0.113 ODU, respectively; the calculations were performed using 34 healthy control sera. All the means and operation characteristics were expressed as values (95% confidence intervals). Differences were considered significant when $p<0.05$.
Results: In RA anti-elastin Ab were found in 37 (34.9%) patients, and the mean concentration was 0.128 (0.118–0.138) ODU. There was no significant correlation between DAS28 and anti-elastin concentrations, but the least marker was increased in patients with heart and kidney involvement, as well as in vasculitis patients, comparing to those who have no such manifestations (p=0.017, 0.046, and 0.009, respectively). We detected 58 (54.72%) anti-elastase positive RA patients, with the mean concentration 0.137 (0.103–0.171) ODU. Anti-elastase positive patients had significantly increased frequencies of anemia (p=0.025) and vasculitis (p=0.017) comparing to the negative subgroup. The prevalence of anti-elastase Ab was also increased along with RA activity. Concentrations of these two Ab were positively correlated (r=0.866, $p<0.001$).For anti-elastin Ab assay (cutoff point 0.112 ODU) diagnostic sensivity in RA patients was 72 (62–87)%, specificity 50 (41–64)%, AUC of ROC curve 0.703 (0.590–0.797). For anti-elastase Ab assay (cutoff point 0.115 ODU) the respective values were 77 (62–87)%, 81 (59–91)%, and 0.822 (0.675–0.923).
Conclusions: Anti-elastin and, increasingly, anti-elastase antibodies are valuable candidate markers to improve diagnosis of RA and, particularly, rheumatoid vasculitis and heart involvement. Further investigations are needed to assess sensivity and specificity of these markers being included in the comprehensive diagnostic algorithms.
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