responders ($p < 0.001$ and $p < 0.001$ respectively), nevertheless, non-responders showed a rising trend ($p = 0.086$ and $p = 0.051$ respectively). Binary logistic regression model revealed that baseline serum sICAM-1 levels had a positive effect on response to therapy. ROC curve analysis for predictive ability of baseline serum sICAM-1 showed an area under the curve (AUC) of 0.775 ($p = 0.010$).

Conclusions: Serum sICAM-1 and CXCL13 levels were elevated in RA patients, and they were higher in seropositive patients than in seronegative patients. Elevated baseline serum sICAM-1 levels were associated with favorable response to TNF- α inhibitor therapy. The decrease of serum sICAM-1 levels after treatment in responders was consistent with their therapeutic response. Thus, baseline serum sICAM-1 could be a predictive biomarker for TNF- α inhibitor therapy in RA patients. There was a lack of reliable evidence that baseline serum CXCL13 had predictive ability, possibly due to different mechanisms of action or small sample size.

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Rheumatoid arthritis - comorbidity and clinical aspects

SAT0117

HIGH URIC ACID AS A RISK FACTOR FOR CARDIOVASCULAR DISEASES IN RHEUMATOID ARTHRITIS PATIENTS

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Background: Rheumatoid arthritis (RA) patients have an increased risk of cardiovascular diseases (CVD). It is unclear whether an elevated serum uric acid (UA) further increases that risk.

Objectives: We study CVD and their risk factors in association with UA in RA patients.

Methods: Adult patients who satisfied the ACR classification criteria for RA from The Kuwait Registry for Rheumatic Diseases (KRRD) from four major hospitals were evaluated from February 2013 through May 2017. Patients with recorded UA were identified and CVD and their risk factors were studied in those patients. To optimize classifier number and prediction accuracy, hierarchical cluster analyses for multiple factors were performed, which indicated nine possible independent CVD risk factors. A binary logistic regression was conducted to examine their significant association with CVD and the independence of UA as a risk factor.

Results: A total of 564 RA patients with available UA were identified, 353 (62.6%) females. Mean age was 50.8 ± 11.5 years and disease duration 10.5 ± 2.9 years. Mean UA was 271 ± 78 $\mu\text{mol/L}$. Of those patients, 31 (5.5%) were reported to have CVD. UA was significantly correlated to the presence of CVD ($\chi^2 = 6.49$, $p = 0.011$). Logistic regression model indicated a 10% increase of CVD with every 10 $\mu\text{mol/L}$ increase in UA. A correlation matrix between UA and other risk factors showed a significant association between high uric acid and a younger age at RA diagnosis ($r = -0.262$), hyperlipidemia ($r = 0.191$) and diabetes mellitus ($r = 0.244$).

Conclusions: Our study suggests that UA may be an independent risk factor for CVD and is associated with the presence of other risk factors. UA should be measured and carefully approached in RA patients.

Disclosure of Interest: None declared

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SAT0118

ASSOCIATION OF RENIN-ANGIOTENSIN SYSTEM IMBALANCE WITH SUBCLINICAL ATHEROSCLEROSIS AND DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) is an independent risk factor for cardiovascular disease (CVD). The renin-angiotensin system (RAS) is a hormonal cascade with important role in hydroelectrolytic homeostasis, blood pressure and regulation of cardiovascular remodeling. Angiotensin II (Ang II) acts as a proinflammatory mediator (1).

Objectives: To investigate the association of serum levels of RAS components with the presence of subclinical atherosclerosis using carotid ultrasonography in women with RA.

Methods: Women with RA according to ACR/EULAR 2010 or ACR 1987 criteria and without clinical ischemic CVD were included. Disease activity was assessed using the DAS28. The presence of atherosclerotic plaques and the thickness of the medium-intimal complex (EMI) of the arterial wall in the common carotid artery were evaluated by ultrasonography. Serum levels of angiotensin (Ang) II, Ang-(1-7), angiotensin converting enzyme (ECA) and ECA II were determined by enzyme immunoassay.

Results: 50 women with RA, mean age 48.2 years (± 7.32), mean duration of disease of 15.35 years (± 8.56), DAS28 of 4.02 (± 1.41) and CDAI of 14.23 (± 11.53) were included. Seven patients presented altered EMI, eight had atherosclerotic plaque. The prevalence of risk factors for CVD was: 12% of smoking, 12% of family history of premature CVD, 46% of arterial hypertension, 10% of diabetes, 62% of dyslipidemia, 94% of abdominal obesity and 46% of metabolic syndrome. The control group consisted of 30 healthy women, mean age of 46.3 years (± 7.72). RA patients had a higher serum concentration of Ang II ($p < 0.01$), Ang-(1-7) ($p < 0.01$), and ACE ($p < 0.01$) than the control group (table 1). There was a negative correlation between ECA II and EMI ($p = 0.041$, $\rho = -0.290$). EMI correlated positively with age ($p = 0.022$, $\rho = 0.324$), disease duration ($p = 0.012$, $\rho = 0.315$) and overall Framingham risk ($p = 0.008$, $\rho = 0.368$) and Ang II correlated positively with DAS28 ($p = 0.034$, $\rho = 0.301$) and CDAI ($p = 0.040$, $\rho = 0.291$).

Table 1. Comparison between plasma concentrations of SRA biomarkers in patients with rheumatoid arthritis (RA) and the control group (CG).

RAS Biomarkers (pg/mL)	RA (n = 50) Mean $\pm$ SD	CG (n = 30) Mean $\pm$ SD	p value
Ang II	407.60 $\pm$ 278.68	198.77 $\pm$ 105.48	<0.01 ^a
Ang-(1-7)	162.06 $\pm$ 234.58	36.94 $\pm$ 61.36	<0.01 ^a
ACE	266.21 $\pm$ 103.64	222.69 $\pm$ 147.61	<0.01 ^a
ACE II	71.86 $\pm$ 27.32	153.57 $\pm$ 225.04	0.17 ^a

RA = rheumatoid arthritis; CG = control group; SD = standard deviation; Ang = angiotensin, ACE = angiotensin converting enzyme. ^aMann-Whitney Test.

Conclusions: Imbalance of RAS components, especially Ang II and ECA II, may be associated to CVD in RA patients. Ultrasonography of the carotid arteries can identify patients that could benefit from ECA blockade.

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SAT0119

PHYSICAL ACTIVITY IN TUNISIAN ADULTS WITH RHEUMATOID ARTHRITIS

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Background: Physical activity (PA) is associated with multiple health-related benefits among the general population and adults with chronic diseases like

rheumatoid arthritis (RA) (1). As known, RA affects primarily synovial joints and can lead to loss of function and decreased mobility.

Objectives: The aim of this study was to explore the PA levels of adults with RA and to examine associations between PA and socio-demographic characteristics, immunological features, disease activity and treatment type.

Methods: This is a cross-sectional study including patients with RA (ACR/EULAR criteria). Disease activity was evaluated by Disease Activity Score erythrocyte sedimentation rate (DAS28 ESR). Physical activity was measured using IPAQ-SF (International Physical Activity Questionnaire-Short Form). Its items records the time spent on physical activity of three intensity levels (vigorous, moderate and walking) as well as the time spent on sitting in the past week. Both continuous [expressed as metabolic equivalent of task (MET-min/week)] and categorical (low, moderate and high level of PA) scores of IPAQ-SF were determined. Sedentary time (median) was reported in minutes/week. A p value <0.05 was considered significant.

Results: A total of 56 patients with RA were evaluated, 7 men and 47 women. The mean age was 54.9±9.8 years, the mean disease duration was 12.5±11.1 years and the mean DAS28 ESR was 4.3±1.3. The mean body mass index was 28.6 kg/m². Eighty two point two percent of patients were on sDMARD, 17.9% were on Biologics and 64.3 were on prednisone. The mean sedentary time was 1777.5±729.6 minutes/week and the mean IPAQ-SF continuous score was 2962.2±3327.9 MET- min/week. Thirty point four percent of patients had low level PA, 46.4% had moderate level, and 23.2% of patients had high level PA. Patients with low level PA were significantly older (58.5 years for low level PA versus 55.3 years for moderate level PA versus 49.3 years for high level PA; p=0.035), and significantly more active (DAS28 ESR= 5.2 for low level PA versus 3.9 for moderate level PA versus 3.8 for high level PA; p=0.003). There were no significant differences in the other characteristics across the PA categories. Correlation analysis revealed a significant negative correlation between PA (Total MET-min/week) and both age (p=0.007; r = -0.354) and DAS28 ESR (p=0.023; r = -0.304). Moreover, there was a significant positive correlation between sedentary time and disease activity (p=0.021; r = 0.307).

Conclusions: Our study proved that PA in patients with RA decreased with age and activity disease with a concomitant increase in sedentary time. Given the risks of developing secondary chronic disease as a result of low levels of PA, physical exercise should be recommended as part of comprehensive RA care.

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SAT0120

MULTIFOCAL RECURRENT PANCREATITIS CAUSED BY SYSTEMIC SECONDARY AA AMYLOIDOSIS IN RHEUMATOID ARTHRITIS - A POSTMORTEM CLINICOPATHOLOGIC STUDY OF 161 PATIENTS

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Objectives: The aim of this study was to describe the prevalence and formal pathogenesis of multi (micro) focal liponecrotic pancreatitis (LnP) caused by systemic secondary AA amyloidosis (AAa) in rheumatoid arthritis (RA).

Methods: A randomized autopsy population of 161 in-patients with RA was studied. RA was confirmed clinically according to the criteria of the ACR. Tissue samples of pancreas were available for histologic evaluation in 111 of 161 patients. Pancreatitis and AAa were diagnosed histologically [1]. The possible role of AAa in the pathogenesis of LnP was analyzed by Pearson's chi-squared (χ^2) test.

Results: AAa complicated RA in 29 (26.12%) of 111 patients. Amyloid A deposition on different tissue structures of pancreas was detected in 25 (86.2 %) of 29 cases. Marked amyloid A deposition was found in the walls of arterioles, small and medium size arteries, and on different tissue structures of the pancreas.

Acute or chronic LnP with or without AAa was present in different stages of the pathological process (necrotic foci with or without inflammatory reaction, and/or consecutive focal accentuated fibrosis) in 15 (13.51%) of 111 patients. Seven (46.66 %) of these 15 were associated with massive AAa. The correlation between LnP and prevalence of AAa was significant ($\chi^2=5.7939$, p<0.016). Two (33.33%) of 15 LnP showed a special scattered multifocal appearance throughout the pancreas, characterized by necrotic foci of different size and stage of necrobiosis, without or with inflammation, and in association with severe AAa. The pancreatitis was basically not hemorrhagic, differing from hemorrhagic pancreatitis due to arterial erosions. Ductal changes were not present. The histological picture

was dominated by more or less pronounced atrophy of pancreatic glands. The link between this special type of LnP and AAa very strong and significant ($\chi^2=16.2658$, p<0.0005).

Conclusions: The close relationship between AAa and LnP suggests a relationship between amyloidosis and the prevalence of pancreatitis, that even may lead to a special multi (micro) focal pancreatitis. Amyloid A deposition in the walls of the pancreatic arterioles, small and medium size arteries (branches of splenic artery, upper and lower gastroduodenal arteries) can lead to local ischemia and to regressive changes in the pancreatic gland. This process is more or less widespread and multifocal, depending on the number of involved vessels. The size of necrobiotic areas is determined by the size of involved blood vessels. Multi (micro) focal necrosis of the pancreas caused by diminished blood supply is followed by reactive inflammation, and later fibrosis, depending on the stages of the pathological process.

AAa is a progressive cumulative process involving more and more blood vessels of different sizes, thus the regressive changes accumulate in the pancreas with time, and exist in different stages at death. Different size and stage of focal necrosis, and the co-existent marked AAa may identify this type of pancreatitis. The progressive and cumulative process of AAa with multi (micro) focal necrosis in the pancreas may cause recurrent abdominal symptoms. This form of pancreatitis may be regarded a special manifestation of AAa or a new vasculogenic entity caused by AAa in RA. Plausible similar changes of pancreas may be expected in other autoimmune diseases complicated with AAa.

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SAT0121

PREVALENCE OF FIBROMYALGIA AMONG PATIENTS WITH RHEUMATOID ARTHRITIS IN DUBAI (WHAT IS THE CLINICAL RELEVANCE?)

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Background: Fibromyalgia (FM) is a multi-symptom syndrome characterized by chronic widespread pain, fatigue, and poor sleep quality. Some of these symptoms such as fatigue and disturb sleep seen in patients with rheumatoid arthritis (RA). Moreover, FM and RA can coexist creating a diagnostic challenge in rheumatology clinical practice and influence clinical decisions. Data on the prevalence of fibromyalgia in general population in Dubai 1.36%¹. There is scarcity of data on the prevalence of FM in RA in the Middle East. We took the opportunity to study the prevalence of FM in our cohort of RA patients

Objectives: To assess the prevalence of fibromyalgia among RA patients in our practice.

Methods: We explored the prevalence of FM in 575 adult RA patients fulfilling the 2010 ACR/EULAR classification Criteria for RA², attending the Rheumatology outpatient services in Dubai Hospital. Electronic Medical records (EMR) and medical files were reviewed for the occurrence of FM in the period from July 2017 to January 2018. We verified the documented diagnosis of FM using the 2016 revisions version of the 2010 ACR fibromyalgia classification criteria³. Grouping: Group 1 RA with FM, Group 2 RA without FM. A 2x2 contingency table (Fisher's exact test) was used to compare demographic, laboratory, drug use and biologics in both groups. Group 1 was further analyzed according to the drug used for FM.

Results: We identified fibromyalgia in 10.43% (60 out of 575) RA patient. FM in RA was predominately in females 58 (96.7%) versus male 2 (3.3%). Medications were used to control the symptoms of FM in 91.7% (55 of 60) and these were as follow Pregabalin (55%), Duloxetine (18.3%), Gabapentin (16.7%) and Amitriptyline (1.7%). Interesting, only 20% (12 out of 60) of patients had Vitamin D insufficiency. Five patients (8.3%) didn't use specific drug for Fibromyalgia.

On comparing the two groups there was no difference in regards to demographic data, and clinical parameters including treatment. However, RA patients with FM were twice likely to use more biologics than RA patients without FM Odds Ratio= 2, though it did not reach statistical significance (P-Value= 0.16).

Conclusions: The prevalence of fibromyalgia is 10.4% among RA patients in Dubai Hospital. Ten times higher than the general population (historical control). Females are the predominant gender affected. Pregabalin is the most commonly used medication in this group.

Odds ratio showed that RA patients with FM are twice likely to use biologic DMARDs than RA patients without FM, although this trend didn't reach statistical significance. Indeed, fibromyalgia can affect clinical decision in RA. Further prospective studies are recommended in different cohorts to clarify the true effect size.