AB0201

IMPACT OF TREATMENT INITIATION DELAY ON DISEASE ACTIVITY DURING RHEUMATOID ARTHRITIS

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Background: During rheumatoid arthritis (RA), initiating conventional synthetic Disease Modifying Anti-Rheumatic Drug (csDMARD) at the early stages of the disease is a mandatory condition to achieve DMARD-free sustained remission (1). Limited data studying the relationship between RA treatment delay and disease activity are available.

Objectives: The aim of this study was to assess the impact of csDMARD initiation delay during RA on disease activity.

Methods: This is a cross-sectional study including patients with RA (ACR/EULAR criteria). Delays were collected from patients' interview and were represented respectively by D1, D2 and D3. D1 stands for the lag time separating the first RA symptom onset and rheumatologist consultation. D2 stands for the lag time separating the first RA symptom onset and RA diagnosis. D3 stands for lag time separating the first RA symptom onset and csDMARD initiation. Disease activity was evaluated by: Visual Analogue Scale for pain (VAS), number of tender joints, number of swollen joints, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and Disease Activity Score28 (DAS28). The data were analyzed with descriptive statistics, Student's t test, chi (2) test, and Spearman correlation using the SPSS statistical package. A p value < 0.05 was considered significant.

Results: The study included 100 RA patients (86 women and 14 men), with a mean age of 56.5 ± 12.4 years. The mean age at the onset of RA was 47.5 ± 12.4 years. Median D1, D2 and D3 were respectively 12 months [0-242], 15.7 months [2-252] and 18 months [2-270]. Methotrexate was prescribed in 86% of cases. At RA diagnosis, the median values for the following parameters were: VAS 80 [30-100], number of tender joints 10 [0-28], number of swollen joints 5 [0-17], ESR 43mm/hour [6-133], CRP 14.1 mg/l [1-120], DAS28 (ESR) 5.22 [2-7.52] and DAS28 (CRP) 4.6 [1-6.93]. After one year of follow-up, the median parameters of the disease activity were respectively: VAS 60 [0-100], number of tender joints 6 [0-28], number of swollen joints 2 [0-22], ESR 32mm/hour [2-106], CRP 7.5 mg/l [1.2-94], DAS28 (ESR) 4.1 [1.4-7.1] and DAS28 (CRP) 3.7 [1.68-6.22]. Significant positive correlation was found between delays in csDMARD initiation and DAS28 (CRP) scores over the first year (p=0.02, r=0.29).

Conclusion: In this study, delays in treatment were associated with higher DAS28 (CRP) scores after one year of follow-up. Our results suggest that early identification and treatment of RA leads to improved outcomes and even improved rates of drug-free remission.

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AB0202

GENETIC SUSCEPTIBILITY AND PHENOTYPE OF RHEUMATOID ARTHRITIS IN DANISH AND TURKISH PATIENTS

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Background: Previous studies indicate that genetic susceptibility and phenotype of rheumatoid arthritis (RA) differ between the populations.

Objectives: To compare the clinical, serologic expression and the presence of shared epitopes (SE) of incident RA in two different populations, one from Northern and the other from Southern Europe.

Methods: Data on incident RA patients fulfilling EULAR/ACR 2010 classifications criteria for RA were collected at Rheumatology Departments in Denmark and Turkey in 2015-2016. Patients were assessed using the same standardized

protocol in both populations. SE carrier status were assigned, according to the du Montcel classification based, into six allele groups: S1, S2, S3D, S3P and X, where S2 and S3P are RA risk-enhancing alleles and S1 and S3D are RA protective alleles of the shared epitope(1).

Results: 109 incident RA patients from Denmark and 114 incident RA patients from Turkey were enrolled. Genetic data were available from 87% of the patients.

Table 1. Characteristics of incident rheumatoid arthritis patients in Denmark and Turkey

	Danish patients n=109	Turkish patients n=114	P-value
Age at diagnosis, years	60 (49-69)	52 (43-64)	0.003
Female, %	64	74	0.12
Symptom duration, months	7 (4-21)	6 (2-22)	0.6
Smoking status			
Never smoker, %	43	44	0.98
Former smoker, %	28	31	0.68
Current smoker, %	29	25	0.54
VAS pain (0-100 mm)	45 (28-66)	60 (41-72)	0.01
VAS fatigue (0-100 mm)	51 (29-69)	50 (20-70)	0.32
VAS global, patient (0-100 mm)	60 (31-80)	60 (41-73)	0.77
Swollen joint count (0-28)	7 (4-11)	3 (1-6)	<0.00001
Tender joint count (0-28)	7 (3-11)	5 (2-8)	0.04
HAQ score (0-3)	0.75 (0.34-1.25)	1.0 (0.25-1.75)	0.02
DAS28	4.7 (4.1-5.5)	4.3 (3.3-5.2)	0.01
CRP, mg/l	7 (3.0-18.5)	8 (3.1-22.6)	0.54
IgM RF positive, %	70	66	0.58
ACPA positive, %	63	75	0.1

Medians (interquartile range) for continuous variables

VAS – Visual Analogue Scale, HAQ – Health Assessment Questionnaire, DAS28 – Disease Activity Score 28 joints, CRP – C-reactive protein, RF – Rheumatoid Factor, ACPA – Anti-Citrullinated Protein Antibodies.

Table 2. Shared epitope allele carrier frequencies.

Allele	Danish patients n=98	Turkish patients n=95	P-value
S1, % (n)	19 (37)	22 (42)	0.43
S2, % (n)	26 (51)	8 (16)	<0.00001
S3D, % (n)	6 (12)	21 (39)	0.000029
S3P, % (n)	27 (52)	29 (56)	0.52
X, % (n)	22 (44)	19 (37)	0.47

We found no associations between the risk-enhancing alleles and the presence of IgM rheumatoid factor or ACPA.

Conclusion: The Turkish patients were younger and had lower disease activity than Danish at the time of diagnosis. Our study found an enhanced genetic susceptibility to RA in Danish compared to Turkish patients with a higher prevalence of risk-enhancing RA alleles and a lower prevalence of protective alleles.

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AB0203

LUNG DISEASE CHARACTERISTICS IN MOROCCAN RHEUMATOID ARTHRITIS PATIENTS

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Background: Pulmonary involvement is the most common extra-articular Rheumatoid Arthritis (RA) manifestation. Interstitial lung disease is an important and early feature and can increase the mortality risk in RA patients. In Morocco no previous studies have been carried out to identify the prevalence of lung disease in RA patients nor have the risk factors for development of interstitial lung disease (ILD).

Objectives: The aim of this study was to investigate the prevalence of lung disease and analyse the ILD associated risk factors, in Moroccan patients with rheumatoid arthritis.

Methods: This was a retrospective analysis of 288 patients diagnosed with RA between January 2014 and December 2019. Exclusion criteria were: pregnant women, history of other autoimmune disease than RA, pulmonary tuberculosis diagnosed before lung exploration, any drugs known to cause pulmonary changes (such as Amiodarone). Clinical, and laboratory features were recorded simultaneously with the period of pulmonary exploration. Lung involvement was

assessed by High-resolution computed Tomography (HRCT). Statistical analyses were performed using SPSS 20.0. The *t*-test was employed to compare means of continuous variables, whereas chi-square test was used to compare frequencies. Variables that were significantly associated with ILD using univariate analyses, were included in multivariate logistic regression model. Statistical significance was considered if $p < 0.05$.

Results: The majority (89.2%) of patients were female. Mean age was 52.6 ± 12.53 years and disease duration was 11.2 ± 9.3 years. A total of 48 (16.7%) patients were noted to have respiratory symptomatology. Lung involvement was documented in 189 (65.6%) patients. In each compartment of the lung, abnormal HRCT findings suggestive of ILD were detected in 134 (70.8%) cases, bronchiectasis in 37 (19.5%) and then pleural effusion in 11 (5.8%) (Table 1).

Table 1. Frequency of subtype's pleuropulmonary involvement detected on HRTC (n=189)

Lung abnormal types N (%)	Lung abnormal Sub-types N (%)	N (%)
Interstitial lung disease 134 (70.8%)	Usual interstitial pneumonia	113(59.7%)
	Non-specific interstitial pneumonia	23(12.1%)
	Cryptogenic organizing pneumonia	3(1.5%)
	Acute interstitial pneumonia/diffuse alveolar damage	0(0%)
	Fibrosis	18(9.5%)
Airways respiratory disease 50(26.4%)	Bronchiectasis	37(19.5%)
	Follicular bronchiolitis	10(5.2%)
	Obstructive bronchiolitis	2(1.05%)
Pleural damage 20(10.5%)	Effusion	11(5.8%)
	Pleural thickening Nodules	6(3.17) 3(1.5%)

In multivariate analysis, ILD was associated with male older age (OR=1.43, 95% IC [1.202-1.952], $p=0.037$), advanced age at RA onset (OR=2.17, 95% IC [1.151-1.874], $p=0.007$), extra-articular manifestations (OR=10.8, 95% IC [5.312-12.300], $p<0.001$), disease activity (OR=2.68, 95% IC [1.463-1.715], $p<0.001$) and low methotrexate dose (OR=1.03, 95% IC [1.003-1.106], $p=0.031$).

Conclusion: ILD was the most prevalent manifestation of RA lung involvement, it was associated to male gender, older age active and severe RA.

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AB0204

A NEW INFLAMMATORY MARKER ASSOCIATED WITH DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS: PLATELET TO ALBUMIN RATIO

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Background: Rheumatoid arthritis (RA) is an inflammatory autoimmune disease characterized by disordered immunity and dysregulated cytokine. Neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR) have been defined as inflammatory markers to evaluate disease activity of RA. Recently, platelet to albumin ratio (PAR) was reported as a new prognostic index in patients with cancer. However, similar studies have not been displayed in RA.

Objectives: This study was to explore the role of PAR in RA and its association with disease activity.

Methods: This retrospective study enrolled 136 RA patients and 87 age- and gender-matched healthy controls. Neutrophil, lymphocyte, monocyte, platelet, hemoglobin, albumin, NLR, neutrophil to hemoglobin ratio (NHR), neutrophil to albumin ratio (NAR), monocyte to lymphocyte ratio (MLR), monocyte to hemoglobin ratio (MHR), monocyte to albumin ratio (MAR), PLR, platelet to hemoglobin ratio (PHR), PAR, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and Disease Activity Score of 28 joints - ESR (DAS28-ESR) were detected. Receiver operation characteristic (ROC) curve was used to discriminate RA patients from healthy individuals. Relationships between PAR and DAS28-ESR as well as other laboratory data were measured by the Spearman's correlations analysis.

Results: RA patients showed higher levels of NLR, NHR, NAR, MLR, MHR, MAR, PLR, PHR PAR and lower levels of albumin than healthy controls. PAR and

other inflammatory parameters were also raised along with increased disease activity in RA patients ($P < 0.05$) except NHR ($P = 0.098$). Similarly, albumin was decreased in RA patients as the disease activity increased ($P = 0.001$). ROC showed that area under curve (AUC) of PAR (0.887, 95%CI: 0.843-0.931) was higher than NLR (0.818, 95%CI: 0.762-0.874), NHR(0.839, 95%CI: 0.787-0.890), NAR(0.829, 95%CI: 0.776-0.882), MLR (0.794, 95%CI: 0.734-0.854), MHR(0.817, 95%CI: 0.760-0.874), MAR(0.814, 95%CI: 0.757-0.872), PLR (0.832, 95%CI: 0.779-0.886), PHR(0.884, 95%CI: 0.838-0.930) and albumin(0.860, 95%CI: 0.813-0.908). Besides, PAR was positively correlated with DAS28-ESR ($r = 0.429$, $P < 0.001$), CRP ($r = 0.540$, $P < 0.001$) and ESR ($r = 0.492$, $P < 0.001$), yielding a highest relevance than other inflammatory indexes.

Conclusion: This study demonstrated that PAR was elevated in RA patients and increased with the disease activity. PAR may be a novel marker to assess the disease activity of RA patients.

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AB0205

PREDICTORS OF ULTRASOUND DETECTED INFLAMMATORY FINDINGS IN PATIENTS WITH INFLAMMATORY ARTHRALGIA

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Background: Patients with inflammatory arthralgia (IA) are considered to be at increased risk for progression to RA. US has shown high sensitivity to detect synovitis compared with physical examination. Thus, US is recommended to identify subclinical synovitis in patients without clinical signs of inflammation.

Objectives: The objective of our study is to determine the frequency and pattern of US detected inflammatory findings in patients with IA and investigate factors contributing to predict these findings.

Methods: An US clinic is scheduled in an academic center running three days every week. A retrospective analysis of our US unit cohort during a period of 6 months was undertaken. Patients with IA and no previous diagnosis of inflammatory arthropathies were included for analysis. Inclusion criteria of IA definition included: severe symptoms presenting in the morning, duration of morning stiffness ≥ 60 min, symptoms predominantly located in MCP joints and absence of clinically detected synovitis by the referral rheumatologist. The following routinely collected variables were included in the analysis: demographics, clinical features and laboratory tests. Patients underwent bilateral US examination in GS and PD mode of hands and/or feet according to the European League Against Rheumatism (EULAR) guidelines. The presence of synovitis, tenosynovitis and enthesitis was assessed on a semi quantitative scale (0-3) for Grey Scale(GS)/Power Doppler(PD) or using enthesitis OMERACT definition, respectively. Patients were stratified in two groups based on the presence of US inflammatory findings (synovitis, tenosynovitis or enthesitis with PD signal). First, differences between groups were tested using chi-squared and Student-t tests in the univariate analysis. Second, multivariate logistic regression models were employed to investigate the association between possible predictive factors of US detected inflammatory findings.

Results: A total of 57 patients were included in the analysis. Mean age was 55.8 ± 15.2 years, 41 (71.9%) were females, and mean symptoms duration was 11.4 ± 10.4 months (Table 1). A total of 42 (73.7%) patients presented with a polyarticular arthralgia pattern. US inflammatory findings were present in 20 (35.1%) patients (26.3% PD synovitis, 21.1% PD tenosynovitis and 3.5% PD enthesitis). Hands were most commonly involved with PD synovitis at wrists in 19.3% and at MCP in 12.3% of patients (Table 2). For PD tenosynovitis, the flexor MCP 2-5 (5.3%) and compartment IV tenosynovitis (1.8 %) were the most frequent affected locations. Only two patients had PD enthesitis at feet and 6 (10.5%) had erosions in hands or feet at baseline examination. In the univariate analysis, the higher ESR values and the shorter time from symptoms onset were significantly associated with US detected inflammatory findings ($p=0.044$ and 0.049, respectively). In the multivariate analysis, only ESR values (OR=1.04; 95%CI 1.002-1.078), remained significantly associated with the presence of US inflammatory findings (Table 3).