AB0155

COMPARATIVE ANALYSES OF SEROLOGICAL BIOMARKERS AND DISEASE CHARACTERISTICS BETWEEN ELDERLY ONSET RHEUMATOID ARTHRITIS (EORA) AND YOUNGER ONSET RHEUMATOID ARTHRITIS (YORA)

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Background: Several studies have reported differences in disease characteristics between elderly onset RA (EORA: age of onset > 60 years) and younger-onset RA (YORA). However, the findings across the studies have been rather inconsistent owing partially to the genetic variation across the populations studied. While a few studies have looked into the clinical aspects of EORA, there is a profound lack of comparative data on serological findings between EORA and YORA. Seropositive RA is known to be associated with more aggressive disease and the titres of the autoantibodies may predict the disease activity and the severity of radiographic progression.

Objectives: The main aim of this study was to compare the levels of the autoantibodies namely anti-CCP (cyclic citrullinated peptide), IgA, IgM, IgG rheumatoid factors (RF) and disease characteristics between the EORA and YORA groups.

Methods: We consecutively recruited a total of 151 female RA patients who were tested for IgA RF, IgG RF, IgM RF and anti CCP antibodies. Participants were aged above 18 years and met the 2010 ACR/EULAR RA criteria. Data on the disease characteristics (age at onset, disease activity at onset, disease duration and medications) were obtained by reviewing the medical records of the subjects. Subjects were divided into 2 groups i.e EORA and YORA based on age at onset of RA. All subjects were assessed for the severity of radiographic joint damage and functional disability based on Modified Sharp Score (MSS) and Health-assessment questionnaire-disability index (HAQ- DI), respectively. The EULAR response criteria was used to determine the subjects' response to disease-modifying anti-rheumatic drugs.

Results: The EORA group had 69 patients whereas the YORA group had 82 patients. The mean anti-CCP and IgA RF levels were significantly higher in the YORA group with p values of 0.002 and 0.035, respectively. The YORA group had significantly more severe disease at onset (p value for DAS 28 at onset was 0.009) with worse radiographic joint damage (p value for MSS was 0.006). In parallel with these findings, the YORA group had significantly higher ESR and CRP at onset with higher frequency of subjects requiring advanced therapies. The differences in frequency of RF positivity, disease duration, number of DMARDs, prednisolone dose and HAQ-Di scores between the groups did not reach statistical significance.

Conclusion: EORA is characterized by lower levels of anti-CCP and IgA autoantibodies with less aggressive disease as compared to YORA.

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Table 1. Comparison of disease characteristics between EORA and YORA

Parameter	EORA (n=69)	YORA(n=82)	p value
Age (years)*	67.19± 2.49	31.93± 5.10	<0.050
Disease duration (years)*	8.06±5.04	8.70± 3.63	0.365
DAS28 at onset*	3.29± 1.37	3.96± 1.68	0.009
RF positive at onset	47 (68.11)	62 (75.61)	0.306
Anti CCP titre*	84.52±117.97	151.14±138.02	0.002
IgA RF titre*	24.15±39.54	43.14±64.82	0.035
IgM RF titre*	68.58±97.65	72.74±93.28	0.789
IgG RF titre*	64.36±66.01	70.88±69.58	0.558
ESR at onset(mm/hr)*	54.20± 20.50	67.04± 23.60	0.001
CRP at onset(mm/L)*	1.33± 1.37	3.79± 8.11	0.019
No. of DMARDs			
1	45 (65.21)	41 (50.00)	
2	16 (23.19)	32 (39.02)	0.106
3	8 (11.59)	9 (10.98)	
On biologics & tsDMARD	12 (17.39)	35 (42.68)	0.008
Prednisolone dose (mg)*	2.83 ± 3.32	2.77 ± 3.02	0.920
Treatment Response			
Good	50 (72.46)	54 (65.86)	0.487
Moderate	15 (21.74)	19 (23.17)	
None	4 (5.80)	9 (10.98)	
MSS*	10.04±12.79	17.49±19.04	0.006
HAQ-DI*	1.47±0.87	1.58±0.71	0.397

Data presented as either counts (percentages) or mean ± SD*

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AB0156

INCIDENCE OF CERVICAL SPINE INVOLVEMENT IN RHEUMATOID ARTHRITIS, RESULTS FROM A SINGLE CENTRE OBSERVATIONAL STUDY

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Background: Rheumatoid arthritis (RA) manifests as a chronic, symmetrical articular disease; any synovial joint may be involved and the cervical spine is another possible affected site [1,2]. Although the cervical spine involvement is a very severe complication of RA, the exact incidence of cervical spine abnormalities in RA is not fully elucidated yet.

Objectives: In this work, we aimed at evaluating the incidence of a cervical spine involvement and associated clinical characteristics in patients with RA in a single centre observational study.

Methods: In this study, we performed a retrospective analysis of prospectively followed-up patients with RA attending our Rheumatologic Clinic, University of L'Aquila, L'Aquila, Italy, between January 2010 and December 2020. Patients who met the diagnostic criteria of 1987 ACR and/or ACR/EULAR 2010 criteria were assessed. Each patient was investigated for cervical spine involvement occurrence, particularly the atlas-axis cervical involvement. Instrumental imaging evaluation of the cervical spine was performed in all patients with clinical suspicion of involvement, by both MRI and CT examinations. MRI examinations were performed on a 1.5 Tesla scanner, acquiring T1, T2, and STIR sequences on sagittal, coronal and axial planes. CT examinations were performed on a multidetector 320-row CT scanner (Aquilion One, Toshiba) acquired with a thin collimation; soft tissue or bone algorithms were applied for image data reconstruction and analysis.

Incident cases of cervical spine involvement were reported as incidence proportion and incidence rate per 1000 person-years at risk.

Results: In this evaluation, 347 consecutive patients, (mostly female 87.6%, mean age of 66.1 ± 11.3 years) attending our Rheumatologic Clinic, were studied. The incidence proportion of cervical spine involvement was 2.0% [0.6 – 3.4%], occurring in 7 out of 347 patients, and identified by both MRI and CT scan. Considering over 1623 person-years, an incidence rate of 4.0 × 1000 [3.0 – 5.0] person-years was also estimated. All our patients with cervical spine involvement were characterised by female gender, rheumatoid factor, ACPA, fulfilment of ACR 1987 classificative criteria, and poorly controlled disease activity. Smoking habit and extra-articular manifestations were also frequently reported. Glucocorticoids, methotrexate, and infliximab were mainly administered in these patients. This therapeutic strategy resulted in a complete resolution of the inflammatory synovitis in all but one patient. The latter developed a cervical spinal instability resulting in neurological progression and required a subsequent surgical management.

Conclusion: The cervical spine involvement is an uncommon but serious manifestation of RA, since possibly causing severe neurologic damage. A poorly controlled inflammatory process would be an important risk factor for developing a cervical spine involvement in RA, thus, a proper management is required, from an early accurate recognition to a timely therapeutic strategy. MRI could provide a useful clinical tool to early evaluate the cervical spine involvement in RA. Finally, considering the low incidence, further studies are needed to fully estimate the exact incidence of this manifestation, mostly in poorly symptomatic patients.

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AB0157

PREVALENCE OF SARCOPENIA AND CLINICAL IMPLICATIONS IN NEWLY DIAGNOSED RHEUMATOID ARTHRITIS PATIENTS

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Background: The aim of this study is to determine the frequency of sarcopenia at the time of diagnosis in RA patients, evaluate the effects of sarcopenia on RA disease activity, prognosis and examine the factors that may be associated with sarcopenia.

Objectives: To determine the frequency of sarcopenia at the time of diagnosis in rheumatoid arthritis (RA) patients, assessing disease activity and factors that may be associated with sarcopenia and observe effects of treatment on sarcopenia.

Methods: A prospective study was conducted on RA patients with newly diagnosed. Patients were evaluated twice, at the time of diagnosis and three months after the initiation of treatment. Demographic data, anthropometric measurements, disease activity scores and sarcopenia status were recorded. Sarcopenia was evaluated with grip strength and bioelectric impedance. The results were also compared with healthy volunteers.

Results: Hand grip strength ($p<0.001$), skeletal muscle mass ($p=0.009$) and skeletal muscle mass index ($p=0.032$) were found to be reduced in RA patients compared to the control group. The frequency of sarcopenia in RA at onset of diagnosis was found to be 31.5%. There was a significant decrease in the rate of sarcopenia after three months of treatment (31.5% versus 8.7%; $p=0.046$).

Conclusion: Sarcopenia was found in approximately one third of the patients with newly diagnosed RA in our study. With treatment, sarcopenia improved significantly. RA patients should be evaluated in terms of sarcopenia besides evaluating joint and extra-articular findings at the time of diagnosis. Early detection and treatment planning may improve the quality of life.

Figure 1. Distribution of skeletal muscle mass index (SMMI) and prevalence of sarcopenia in RA and control groups

Table 1. Demographics, clinical features, anthropometric measurements and disease activity scores of sarcopenic and non-sarcopenic RA patients

	RA without sarcopenia n=37	RA with sarcopenia n=17	p
Age, mean (SD), years	47.3 (12.8)	58.0 (16)	0.011*
Gender, female, n (%)	27 (73)	9 (52.9)	0.215
Marital status, married, n (%)	34 (91.9)	13 (76.5)	0.258
Tobacco consumption, n (%)			
Active smoker	10 (27)	5 (29.4)	0.086
Ex-smoker	8 (21.6)	8 (47.1)	
Never smoker	19 (51.4)	4 (23.5)	
Alcohol consumption, n (%)			
Active drinker	2 (5.4)	2 (11.8)	0.244
Ex-drinker	0 (0.0)	1 (5.9)	
Never drinker	35 (94.6)	14 (82.4)	
Occupation, n (%)			
Worker	15 (40.5)	12 (70.6)	0.060
Height, mean (SD), meter	1.6 (0.1)	1.6 (0.1)	0.664
Weight, mean (SD), kg	80.6 (17.7)	65.3 (8.6)	<0.001*
BMI, mean (SD), kg/m ²	31.4 (7.3)	24.9 (3.2)	<0.001*
Obese, n (%)	20 (54.1)	2 (11.8)	0.006*
Waist circumference, mean (SD), cm	97.1 (14.2)	89.3 (12.8)	0.058
Hip circumference, mean (SD), cm	108.1 (12.7)	96.6 (5.1)	0.001*
Calf circumference, mean (SD), cm	35.4 (5.1)	29.6 (4.0)	<0.001*
Triceps skin thickness, median (min-max), mm	22 (8-36)	15 (6-31)	0.022*
Loss of muscle strength, n (%)			
Right	10 (27.0)	9 (52.9)	0.076
Left	12 (32.4)	10 (58.8)	0.081
Dominant hand, right, n (%)	33 (89.2)	13 (76.5)	0.418
SMMI, mean (SD)	25.1 (5.8)	21.9 (4.7)	0.049*
SMMI, mean (SD)	9.6 (1.5)	8.2 (1.2)	<0.001*
DAS 28 - CRP, median (min-max)	4.4 (1.7-6.5)	4.4 (2.4-6.3)	0.860
SDAI, median (min-max)	36.1 (8.8-113)	31.1 (17.1-113)	0.668
CDAI, median (min-max)	23 (0-48)	23 (6-39)	0.993
PRGA, median (min-max)	6 (0-9)	5 (2-10)	0.627
PTGA, median (min-max)	8 (0-10)	7 (4-10)	0.666
Presence of morning stiffness, n (%)	32 (86.5)	14 (82.4)	0.999
Swollen joint count, median (min-max)	2 (0-10)	4 (0-9)	0.423
Tender joint count, median (min-max)	6 (0-20)	7 (0-18)	0.911

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AB0158

COMPARISON OF CLINICAL EXAMINATION AND ULTRASOUND OF HAND AND WRIST JOINTS IN RHEUMATOID ARTHRITIS

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Background: Ultrasound (US) is an accessible and non-invasive tool to assess joint involvement in rheumatoid arthritis (RA). It is used for diagnostic and prognosis purposes and for following of RA patients by evaluating the disease activity and therefore the response to treatment.

Objectives: This study investigates agreement between US of hand and wrist findings and the clinical examination and biological inflammatory parameters in RA patients.

Methods: We performed a cross sectional study including patients responding to the ACR/EULAR 2010 criteria for RA diagnosis. We collected US findings assessing synovitis and doppler signal in wrist, metacarpophalangeal (MCP) and proximal interphalangeal (PIP) articulations, and concomitant clinical examination assessing synovitis and pain in the same joints along with C reactive protein (CRP) levels and disease activity score (DAS28). The power Doppler US score (PDUS) from 6 simplified synovial sites (wrists, bilateral second and third MCP joints) was calculated [1].

Results: Forty-three patients were included with 91.7% of women. The mean age was 62±12.95 years old. The mean age at diagnosis was 52±14.79 years with a mean disease evolution of 8±8.57 years. Rheumatoid factor and anti-citrullinated antibodies were positive in respectively 78% and 83.9% of cases.

The mean disease activity (DAS28) was 1.52 with levels ranging from 1.5 to 7.33. Right wrist was the articulation in which US synovitis was most frequently detected (60.5% of patients), followed by the left wrist (53.5%). Power doppler signal was detected as frequently in the right as in the left wrist articulations (41.9%). Subsequently, clinical synovitis was most frequently detected in right and left wrist with 39.5% and 41.5% respectively. These joints were the most frequently painful, in 51.2% and 48.8% at right and left respectively.

US synovitis of the first interphalangeal joint was found in only 2.3% and 4.7% in the right and left hand respectively, with positive power doppler signal in 2.3% of the patients in the same articulations.

The overall agreement between US and clinical examination in detecting synovitis of wrist, MCP and PIP joints was of 67.3%. It was of 71.4% in wrists, 54.7% in MCP joints and 87% in PIP joints. This suggests the presence of infra-clinical synovitis. All sites combined, US synovitis were correlated to clinical synovitis ($p=0.03$).

A positive correlation was found between PDUS from 6 simplified joint sites and CRP levels (p value of 0.02). No correlation was found with disease activity score (DAS28).

Conclusion: US of hands and wrist articulations is more performant than clinical examination in detecting synovitis. The most frequently involved joints with clinical and US synovitis, pain and positive power doppler signal were the wrist joints. CRP level is predictive of the presence of a high simplified power doppler score which is related to clinical activity of the disease as reported by Kawashiri et al. [1].

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AB0159

DIASTOLIC DYSFUNCTION IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis (RA) presents with an elevated incidence of congestive heart failure disease, which has a strong association with diastolic dysfunction, defined by left ventricular delayed relaxation pattern assessed by echocardiography.(1,2)

Objectives: To describe the frequency of left ventricular delayed relaxation pattern in patients with RA, and the relationship with its clinical and serological characteristics, as well as with traditional and non-traditional cardiovascular risk factors.