AB0180

VITAMIN D SUPPLEMENTATION ON DISEASE ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Rheumatoid arthritis(RA) is a chronic inflammatory autoimmune disease with unknown etiology that primarily affects the peripheral joints and, over time, leads to loss of mobility if untreated.¹ The prevalence of RA in Myanmar was 1.3% in 2004.² According to Rheumatology outpatient clinic records of Mandalay General Hospital, there were 402 old patients and 104 new RA patients in 2017 and 453 old patients and 102 new RA patients attending in 2018. In addition to the main effects of vitamin D (vit D) on bone and calcium metabolism, it has other roles in the body, including modulation of cell growth, neuromuscular and immune function, and reduction of inflammation.³ Due to difference in ethnic origins and geographical distribution, the results may be varied when it is done in sunshine rich area such as Myanmar. In the present study, vitamin D supplementation on the disease activity of RA by DAS28 was determined.

Objectives: 1.To compare DAS28 score before and 12 weeks after vitamin D loading dose supplementation in RA patients with vitamin D deficiency
2.To compare DAS28 score before and 12 weeks after vitamin D 1000 IU per day supplementation in RA patients with normal serum vitamin D level

Methods: 58 patients with RA attending to medical unit I, II, III and Rheumatology outpatient clinic of Mandalay General Hospital were recruited. Disease activity was assessed according to DAS28. Patients with DAS28 ≥ 2.6 were assessed for serum vitamin D status. Those with vitamin D level < 20 ng/ml were defined as vitamin D deficient and vitamin D₃ 5, 000 IU per day for 8 weeks, then 1, 000 IU per day for 4 weeks were given orally for a total of 12 weeks duration. Patients with normal Vit D level (≥ 20 ng/ml) were provided with Vit D 1000 IU per day for 12 weeks.

Results: Before 12 weeks of Vit D supplementation, 53.45% of patients with RA (2 male and 29 female) were Vit D deficient and 46.55% of patients (1 male and 26 female) had normal serum Vit D level. The largest age group was between 46-55 years in both groups which comprised 41.38% of patients. In patients with Vit D deficiency, mean serum Vitamin D level was 10.32 ± 4.26 ng/ml and, in patients with normal Vit D level, mean serum Vitamin D level was 36.51 ± 17.76 ng/ml.

After 12 weeks of Vit D supplementation, out of 31 patients with Vit D deficiency, serum Vit D level of 23 patients became ≥ 20 ng/ml although only 3 patients were still Vit D deficient. Both groups showed improvement in clinical and biochemical parameters such as VAS, ESR, tender and swollen joint counts.

Before 12 weeks, more than 40% of patients had high or moderate disease activity in each group. After 12 weeks of Vit D supplementation, in Vit D deficient group, most patients (54.84%) had disease remission and 22.58% of patients were found to have moderate disease activity. Disease activity of 19.35% of patients became low. Only one patient had high disease activity.

After 12 weeks of Vit D supplementation, in Vit D normal group, disease activity of most patients (48.15%) became low and 33.33% had remission. 18.52% of patients with RA were found to have moderate disease activity. No patient had high disease activity.

Although there was no correlation between serum Vit D level and DAS28, DAS28 score was significantly decreased from 5.27 to 2.79 ($P = 0.0000$) after 12 weeks of Vit D loading dose supplementation in RA patients with Vit D deficiency. Similarly, DAS28 score of RA patients with normal Vit D level was significantly decreased from 5.04 to 2.71 ($P = 0.0000$) after 12 weeks of Vit D 1000 IU supplementation.

Conclusion: The present study revealed that Vitamin D supplementation was effective in reducing disease activity in patients with Rheumatoid arthritis. These findings may be helpful in the treatment of Rheumatoid arthritis.

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AB0181

COULD TITERS OF ACPA PREDICT THE SEVERITY OF RHEUMATOID ARTHRITIS, ANALYSIS OF DATA DURING A 3-YEARS FOLLOW-UP?

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Background: Rheumatoid Factor (RF) and/or Anti Citrullinated Protein Antibodies (ACPA). Are included in classification criteria of Rheumatoid arthritis (RA); their presence correlates with RA severity. The influence of ACPA titer on RA course and outcome in long-term follow-up is limited.

Objectives: To check the correlation between ACPA titers at the time of RA diagnosis to RA features and severity during 3 years follow-up.

Methods: We performed a retrospective study on patients treated at our institution during the years 2006-2015 with known ACPA titers at RA diagnosis, who completed at least 3 years of follow-up. Patients (pts) were divided according to ACPA titer: A - seronegative (<15 U/ml), B - weak positive (15-49 U/ml) and C - strong positive (>50 U/ml) with subdivision to C-1 - moderately high (50-99 U/ml), C-2 - high (100-299 U/ml) and C-3 - very high (>300 U/ml). Patient's data including DAS28, bone erosion on hands and/or foot X-rays, treatments with corticosteroids and DMARDs and hospitalizations due to flares. Chi-Square and Mann-Whitney method were used for statistical analysis; $p < 0.05$ was considered statistically significant.

Results: Among 850 pts with RA, 133 (mean age 55 years, 65% female) met the inclusion criteria: group A: 55 (42%) pts, group B: 18 (13%) pts, group C: 60 (45%) pts [C1- 10 pts, C2-21 pts and C3-29 pts]. Most of the characteristics were similar between the groups (including C subgroups). There were no significant differences between the groups in terms of tender and/or swollen joints, acute phase reactants, bone erosions, need for corticosteroids or DMARDs, hospitalizations, number of DMARDs and number of biologicals. There was significant correlation between ACPA titers and positive RF ($p < 0.0001$); it was consistent in all patients groups. Higher ACPA titers were associated with greater percentage of patients with positive RF. The percentage of male was higher in subgroup with highest ACPA: 25% in ACPA-negative group compared to 45% in the strong positive group (group C-3); it correlated with current or ever smoking. DAS28 was high in all groups without significant difference; over 80% of patients had DAS28 higher than 3.2 and 50-60% had a value higher than 5.2. During the 3-year follow-up, 95% of pts received prednisone with an average daily dose of 14.8 mg (SD, 8.9 mg), 50% of pts received more than 15 mg prednisone daily. The average number of synthetic and biological DMARDs was 2.5 (SD 0.73) and 0.56 (SD 0.84) per patient; methotrexate was prescribed in 89% of cases. There were no correlations between negative (group A) or positive ACPA (group B and C) and the variables defined as representing the severity of RA: the percentage of pts with DAS28 >3.2 ($p=0.136$) and DAS28 >5.2 ($p=0.774$). The percentage of pts receiving prednisone dosage higher than 15 mg/day ($p=0.828$) or at least two synthetic ($p=0.846$) or biological DMARDs ($p=0.668$) or their combination ($p=0.770$) were not significantly different. There was no correlation between ACPA titer and bone erosions (87 pts, $p=0.883$) during 3 years of follow-up. Finally, there was no correlation between ACPA titers and the number of hospital admissions ($p=0.951$).

Conclusion: In our cohort of RA pts, higher ACPA titers were observed in males with smoking history. Higher ANCA titers correlated with RF positivity but were not identified as predictive factor for RA severity.

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AB0182

EVALUATION OF THE SOCIO-PROFESSIONAL IMPACT OF ANKYLOSING SPONDYLITIS AND RHEUMATOID ARTHRITIS IN TUNISIA: DATA FROM THE BINAR REGISTRY

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Background: Rheumatoid arthritis (RA) and ankylosing spondylitis (AS) are disabling and common chronic inflammatory rheumatic diseases.

Objectives: The aim of our study was to evaluate the socio-professional impact of RA and AS.

Methods: Using the Biological National Registry (BINAR) data, which includes ten tunisian rheumatology centers, we identified patients ≥ 18 years with AS and RA according to the ACR and EULAR 2010 criteria (RA) and ASAS 2009 (AS), receiving biotherapy for less than two years.

Results: 298 patients were included in the study. The percentage of patients with RA was 58.7 % and those with AS 41.3%. The sex ratio was 0.6. The average age of the onset of the disease was 49.1 years $\pm$ 14.1 years [18–79]. For marital status, 72% were married, single (25%), widowed (2.6%) and divorced (0.4%). 22.4% of patients were illiterate, 32.7 % (primary), 28.3% (secondary) and 16.6% had an university level. For the RA population, a high disease activity (DAS28-ESR > 5.1) was detected in 36% of patients, an erosive arthritis in 73.1% and 7.2% had a coxitis. In the AS group, an elevate BASDAI (BASDAI ≥ 4) was detected in 56.9% of patients and 39% had coxitis. All patients have received Biological therapy concomitant with corticosteroids (59.1%), methotrexate (42.6%), salazopirine (20.8%) and leflunomide (4.7%). 54% of patients had a comorbidity, of which 1.7% was depression. More than half of our patients (54.3%) were unemployed, 40 % were professionally active, and 5.7% were retired due to the rheumatic condition. Absence from work was observed in 15.1% of cases with a total duration exceeding three months in 55.5% of cases. 37.9 % of patients were physically active: regularly (9.8%), irregularly (28.1%) and (62.1%) were sedentary. For the functional impact, HAQ score was 1.31 ± 0.7 for RA and BASFI was 5.2 ± 4.8 for AS. The working abandonment is significantly associated to: marital status ($p=0.039$), low level of education ($p=0.04$), depression ($p<0.001$), high activity of AS ($p=0.004$) and BASFI > 4 ($p=0.001$).

Conclusion: RA or AS requiring biotherapy have a high socio-economic impact and are responsible for absenteeism at work and even for early working abandonment. Early therapeutic management and a global assessment are essential in order to improve quality of life and working conditions. Longitudinal studies are needed to assess the effect of biological therapy on the socio-professional impact of these chronic inflammatory rheumatic disease.

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AB0183

EARLY RA PATIENTS SEEN IN PRACTICE WHO HAVE CO-EXISTENT NON-ARTICULAR PAIN HAVE SIGNIFICANT WORSENING OF PROMIS® 29 DOMAIN SCORES. RESULTS FROM THE CATCH US STUDY

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Background: Non-articular pain (NAP) can co-exist with synovitis in RA. Its presence is associated with higher pain and worse function per legacy patient reported outcomes (PROs) both of concern to people with RA. It is not known if the presence of NAP significantly changes PROMIS 29 health domains.

Objectives: To determine if co-existing NAP (both regional or widespread pain) is associated with important differences in PROMIS 29 domain scores for symptoms and impacts.

Methods: Patients (pts) with early RA, were recruited from two practice settings in the Consortium of early arthritis cohorts, USA (CATCH-US) (New York and Baltimore) between Jan 2015-Dec 2019 (n=96). Data were from baseline (bl) visits; pts must have completed a body pain diagram (BPD) (CHOIR Bodymap®) and the PROMIS-29V.1, and provided legacy PRO and clinical measures. Pts were grouped as i) no-NAP and ii) NAP based on presence of pain in non-articular regions (1-3 regions - regional, 4-5 -widespread). PROMIS 29 domain scores were compared between groups, as were related legacy PROs and clinical outcomes routinely used to assess disease activity. Data are descriptive; continuous variables were compared using t-tests.

Results: Pts (n=96) had a mean age(sd) of 47.9 (14.9), 83% female, 67% white, 13% smokers, 21% obese, 82% seropositive, 51% mod/high CDAI, symptom duration 7.3 (5.4 months) and a comorbidity index (RDCI) of 0.7 (1.0). At study entry most had started RA treatments: 32% csDMARD with MTX, 22% non-MTX csDMARDs, 40% oral steroids, 13% biologics or JAKi's; 28% were treatment naive. Patients reporting NAP were more often white, smokers, obese, but did not differ otherwise. MDSJC28 was higher, mostly effected small joints, and affected regions on BPD were excluded for NAP classification. All but one (anxiety) of PROMIS 29 domain scores differed significantly between groups; similar differences were seen in legacy PRO scores and in some clinical outcomes (Table). Most clinical measures did not differ between groups.

Conclusion: In this cohort of early RA patients almost 1/3 with co-existent NAP unrelated to synovitis had significantly worse legacy PRO and PROMIS scores. These data provide rationale for using generic PROMIS measures as they identify symptoms and impacts, that may be unrelated to synovitis, providing information that could improve patient-oriented care in clinical practice. Clinicians

should assess for and treat NAP as part of target-based care. Reasons for (injury, mechanical, disuse) and best treatment of NAP require further research.

Table. PROMIS Scores differ between patients with and without NAP as do Legacy PROs in real world early RA patients.

	NAP Any Pattern (n=26)	No Co-existing NAP (n=70)	p-value
Baseline Characteristics			
Age	50.2 (14.1)	47.1 (15.1)	0.356
Female sex	84%	81%	..
Current Smoker	19%	5%	..
RF+ / ACPA+	57% / 62%	62% / 76 %	..
BMI	27.2 (6.7)	26.1 (6.4)	0.236
RDCI (0-9)	0.68 (1.03)	0.69 (0.97)	0.963
Symptom Duration, mos	7.4 (1.3)	7.4 (0.6)	0.979
Legacy PROs and Clinical Measures			
ESR mm/hr	22.5 (6.8)	16.7 (2.3)	0.425
CRP (mg/dl)	1.03 (0.260)	1.02 (0.19)	0.965
Pain (0-10)	4.5 (2.4)	3.0 (2.5)	0.009
Pt global (0-10)	4.5 (2.6)	2.6 (2.3)	0.002
Stiffness (0-10)	5.1 (2.5)	3.07 (2.90)	0.002
MDHAQ (0-3)	2.2 (1.7)	0.9 (1.2)	0.001
RAPID 3 (0-10)	2.8 (2.3)	1.8 (1.8)	0.036
ESR mm/hr	22.5 (6.8)	16.7 (2.3)	0.425
CRP (mg/dl)	1.03 (0.26)	1.02 (0.19)	0.965
MDTJC 28	4.1 (5.4)	2.9 (3.8)	0.290
MDSJC 28	6.9 (6.3)	3.4 (3.9)	0.013
MD Global (0-10)	4.1 (2.3)	3.4 (2.0)	0.183
DAS28 ESR	4.14 (2.25)	3.14 (1.39)	0.123
CDAI	19.6 (13.6)	12.2 (9.5)	0.015
PROMIS Scores			
Function	44.03 (8.79)	49.47 (7.02)	0.007
Anxiety	53.2 (10.5)	50.4 (9.4)	0.238
Depression	52.6 (9.2)	47.1 (8.0)	0.012
Sleep Disturbance	55.3 (8.4)	50.3 (8.4)	0.013
Fatigue	58.3 (7.9)	49.3 (9.5)	<.001
Social Participation	43.7 (9.9)	50.7 (10.4)	0.004
Pain Interference	60.2 (8.0)	52.7 (8.9)	0.007

Data are mean(sd) unless noted

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AB0184

ADHERENCE TO TREATMENT IN AN ITALIAN COHORT OF PATIENTS AFFECTED BY CHRONIC INFLAMMATORY ARTHROPATHIES TREATED WITH BIOLOGIC AGENTS

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Background: The lack of adherence to treatment in patients affected by chronic diseases, such as rheumatic diseases, remains a relevant issue. Indeed, "inefficacy" or "intolerance" to therapies prescribed could hide a scarce compliance of a considerable percentage of patients.

Objectives: We aimed to evaluate the adherence to treatment in a series of patients affected by chronic inflammatory arthropathies treated with biologic agents.

Methods: We recruited 175 consecutive patients (M/F: 56/120; mean age 52.6 $\pm$ 12.3 years) affected by rheumatoid arthritis (98), psoriatic arthropathy (45) or ankylosing spondylitis (32) treated with subcutaneous biologic agents. All patients completed the Morisky Medication Adherence Scales (MMAS-8)¹, in order to estimate their adherence to therapy. Moreover, we achieved from all cases the Patient Global Assessment (PGA), the Visual Analogue Scale (VAS) for articular pain, the Health Assessment Questionnaire (HAQ), and the report of eventual adverse events.

Results: Considering MMAS-8, 23/175 (13.1%) patients were low adherent to treatment (score < 6), and 59/175 (33.7%) presented medium-grade adherence (score 6-7).

Adherence to treatments tended to be higher in males (mean MMAS-8 7.3 $\pm$ 1.1 vs. 6.9 $\pm$ 1.6; $p=0.073$), while it was not associated with age, education level, type of articular disease, presence of adverse events, or treatment with the type of traditional or biologic DMARDs.

Higher mean levels of PGA (51.3 vs. 38.8; $p=0.012$), VAS (52.6 vs. 44.3; $p=0.08$), and HAQ (0.9 vs. 0.5; $p=0.001$) was reported in low-adherent patients compared with full adherent subjects.