Results: Seventy-seven patients were included, 58 (75.3%) were females; the mean age was 54.24 ± 11.0 years and seropositivity was founded in 65 (84.4%) for anti-citrullinated protein antibodies and in 58 (75.3%) for rheumatoid factor. The first bDMARD most commonly prescribed were etanercept (28.6%) and rituximab (26%). Regarding the vitamin D status at baseline, the mean serum level for 25(OH)vitamin D was 28.35 ± 18.21 ng/mL, with the majority of patients having vitamin D insufficiency (25(OH)vitamin D < 30 ng/mL) (63.6%). After 6 months of treatment with the first bDMARD, disease activity measures showed that remission or low activity were achieved in 29.9% of the patients, using DAS28 criteria; in 42.9% and 46.8%, according CDAI and SDAI criteria, respectively. Vitamin D serum levels at 6 months were 26.81 ± 11.72 , with the majority of patients still with vitamin D insufficiency (62.3%).

At baseline, patients with vitamin D insufficiency had greater patient VAS (79.00 ± 19.14 vs 71.71 ± 21.95), greater erythrocyte sedimentation rate (ESR) (40.67 ± 23.17 vs 32.46 ± 26.09) and greater Health Assessment Questionnaire (HAQ) score (1.75 ± 0.609 vs 1.61 ± 0.659) with neither of them having statistical significance. However, when comparing CRP levels at 6 months, it achieved statistical significance with the Mann-Whitney U-test (1.05 ± 1.79 vs 1.41 ± 5.22 ; $p=0.026$). The same tendency was confirmed when analyzing vitamin D levels at 6 months. Patients with vitamin D insufficiency presented greater patient VAS (55.33 ± 28.82 vs 42.86 ± 28.28), greater ESR (26.19 ± 21.57 vs 21.00 ± 20.38) and greater HAQ score (1.35 ± 0.662 vs 1.34 ± 0.705), although without statistical significance. However, it did achieve statistical significance when comparing baseline DAS28 and HAQ (5.60 ± 0.91 vs 5.38 ± 1.31 ; $p=0.013$ and 1.76 ± 0.53 vs 1.59 ± 0.75 ; $p=0.007$, respectively).

Conclusion: Our data failed to demonstrate a statistically significant association between vitamin D serum levels at baseline and at 6 months with disease activity in our RA sample. However, it revealed a positive trend of vitamin D insufficiency related to higher activity disease. Interestingly, it showed that vitamin D insufficiency after 6 months of bDMARD treatment is related to higher DAS28 and HAQ at baseline. Nonetheless, we insist it is of paramount importance to conduct larger studies to confirm these findings.

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POS0503

THE DISCORDANCE BETWEEN PATIENT-REPORTED AND CLINICAL/BIOLOGICAL OUTCOMES COULD HELP IN PREDICTING FUTURE DISEASE IMPACT IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: Treatment of Rheumatoid Arthritis (RA) has improved significantly based on early treat-to-target (T2T) strategies. Still, decreased health related quality of life (QoL), restricted ability to work and other unmet needs are reported by RA patients even in the absence of disease activity. We previously identified 3 factors representing the broader impact of RA using exploratory factor analysis: a patient-reported factor (patients global health, pain, fatigue and HAQ), a clinical factor (physician's global health, tender and swollen joint count), and a laboratory factor (ESR and CRP)¹.

Objectives: To test whether the discordance between patient-reported (PRF) and clinical(CF)/laboratory(LF) measures can predict QoL, or has a mediating effect in predicting future disease burden based on disease activity (DAS28CRP).

Methods: This is a post-hoc analysis of the 2-year CareRA trial. PRF, CF and LF scores were calculated as weighted (by factor loading) sum of their components at week 16, 52 and 104 after treatment initiation. A discordance score (DS) between PRF and the mean of the other two scores was also computed.

Mediation analyses were fitted to test the hypothesis (Figure 1) that DS could be a mediator for predicting PRF, CF and LF at a future time point (week 16, 52 and 104) using DAS28CRP at a previous time point (baseline and week 16). Confidence intervals were estimated via 10 000 bootstraps. Finally, a linear regression was fitted for DS to predict future QoL (RAQoL questionnaire; range 0-30; higher values indicating worse QoL).

Results: Patients with early RA (n=379) were included with a mean (SD) age of 53.9 (13.0), 77% seropositive and 69% women.

The DS was shown to be mediating the effect of DAS28CRP on any future PRF (Table1). On the other hand, there was no mediation effect of the DS in the prediction of the CF and an inconsistent mediation effect when predicting the LF. Moreover, the DS at week 16 significantly predicted ($p<0.0001$) RAQoL scores at year 1 with an effect of β 19.05 (SE 1.58) and an R^2 of 0.30 (CI 0.22-0.38). Similarly, it predicted RAQoL ($p<0.0001$) at year 2 with a β 19.74 (SE 1.56) and R^2 of 0.32 (CI 0.24-0.40).

Figure 1: Postulated mediational path model

Table 1. Results of mediation analyses for prediction of future burden based on previous DAS28CRP and mediated by discordance.

Timepoint	Predictor variables	Direct Effect	95% CIs	R ²	Mediation effect
Patient-reported factor					
W16	DAS28CRP at BL	-0.0091	-0.0240, 0.0058	0.1450	Present
	DS at BL	0.0246*	0.0169, 0.0331	0.1784	
W52	DAS28CRP at W16	0.0215*	0.0010, 0.0419	0.3394	Partial
	DS at W16	0.0580*	0.0442, 0.0739	0.2749	
W104	DAS28CRP at W16	0.0101	-0.0102, 0.0305	0.2798	Present
	DS at W16	0.0528*	0.0396, 0.0686	0.2749	
Clinical factor					
W16	DAS28CRP at BL	0.0153*	0.0074, 0.0232	0.0599	Absent
	DS at BL	0.0019	-0.0010, 0.0048	0.1784	
W52	DAS28CRP at W16	0.0365*	0.0267, 0.0463	0.1944	Absent
	DS at W16	0.0034	-0.0031, 0.0095	0.2749	
W104	DAS28CRP at W16	0.0115*	0.0024, 0.0207	0.0409	Absent
	DS at W16	0.0033	-0.0019, 0.0089	0.2749	
Laboratory factor					
W16	DAS28CRP at BL	0.0063*	0.0015, 0.0111	0.0634	Partial
	DS at BL	0.0030*	0.0012, 0.0050	0.1784	
W52	DAS28CRP at W16	0.0003	-0.0063, 0.0068	0.0305	Present
	DS at W16	0.0051*	0.0012, 0.0096	0.2749	
W104	DAS28CRP at W16	-0.0007	-0.0079, 0.0064	0.0014	Absent
	DS at W16	0.0013	-0.0019, 0.0046	0.2749	

W: week BL: baseline DS: discordance score DAS28CRP: disease activity score in 28 joints with C-reactive protein* $p<0.01$

Conclusion: Early discordance between patient-reported and biological/clinical factors mediates the effect of disease activity on future patient-reported outcomes, but also predicts QoL. Paying attention to this early discordance might provide opportunities to prevent patient's unmet needs by additional non-pharmacological interventions, hence broadening the scope of T2T.

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POS0504

IS BIOELECTRICAL PHASE ANGLE ASSOCIATED WITH FUNCTIONAL STATUS AND DISEASE IMPACT IN PATIENTS WITH RHEUMATOID ARTHRITIS?

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Background: Rheumatoid arthritis (RA) is a chronic inflammatory disease in which an abnormal body composition was reported to be highly prevalent. (1) Bioelectrical phase angle (PhA) is a measure of the relationship between electric resistance and reactance obtained via bioelectrical impedance analysis (BIA). (2) As an indicator of cellular health, PhA has been described as a predictor of worse clinical outcome and higher mortality in various conditions. (3) Since there is evidence that PhA is related to disease progression and prognosis when considering chronic inflammatory conditions, a lower PhA may also be considered an indicator of a worse prognosis in RA. (1)

Objectives: To study the association between PhA, functional status and impact of disease in RA patients.

Methods: Observational and cross-sectional study, including 53 patients with RA diagnosis according to the ACR/EULAR 2010 criteria. Each patient demographic data was recorded, and body composition, including PhA by BIA, was obtained. BIA was performed using Bodystat QuadScan 4000 equipment. Functional status and impact of disease were assessed using the Health Assessment Questionnaire (HAQ) and the Rheumatoid Arthritis Impact of Disease (RAID) scores, respectively. PhA was stratified by tertiles (lowest, middle and highest) to create groups of patients. Statistical analysis was performed using student's t-test (IBM SPSS version 26) for comparisons between groups.

Results: A total of 53 patients with RA (81.1% women) with an average age of 62.2 ± 10.2 years were assessed. Mean PhA was 5.8 ± 1.7 °. A PhA lower than 5.2 ° (lowest tertile) was recorded in 17 patients; A PhA ranging from 5.2 ° to 6.0 ° (middle tertile) was observed in 18 patients; A PhA greater than 6.0 ° (highest tertile) was seen in 18 patients. Mean HAQ score was 1.43 ± 0.61 in the lowest tertile, 0.85 ± 0.57 in the middle tertile and 0.67 ± 0.57 in the highest tertile. Mean RAID score was 5.86 ± 1.69 in the lowest tertile, 4.73 ± 2.05 in the middle tertile and 3.00 ± 1.94 in the highest tertile. The statistical analysis showed significant differences in both HAQ and RAID scores between the lowest and the highest tertiles ($p=0.001$ and $p<0.001$, respectively). Significant differences were also found between the lowest and the middle tertile for HAQ score ($p=0.007$) and between the middle and the highest tertile for RAID score ($p=0.017$).

Conclusion: In our cohort a lower PhA was significantly associated with higher HAQ and RAID scores, indicating higher disease impact and higher disability in RA patients with lower PhA. These results support the hypothesis that PhA may be investigated as a possible indicator of disease prognosis in RA.

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Rheumatoid arthritis - comorbidity and clinical aspects

POS0505

DEPRESSION, ANXIETY AND STRESS AMONG OUTPATIENTS WITH RHEUMATOID ARTHRITIS FOLLOWED UP AT A TERTIARY CARE HOSPITAL IN SRI LANKA; A CROSS-SECTIONAL STUDY

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Background: Increased prevalence of depression, anxiety and stress have been shown among patients with rheumatoid arthritis. Patient and disease characteristics and psychosocial factors associated with these mental health issues are shown to vary among different populations. South Asian studies comprehensively assessing the prevalence and associations of these factors are lacking.

Objectives: To determine the prevalence of depression, anxiety and stress among patients with rheumatoid arthritis and to identify associated patient and disease factors.

Methods: A cross-sectional study was carried out among outpatients at three specialized rheumatology clinics at the National Hospital of Sri Lanka. Individuals with a diagnosis of rheumatoid arthritis were recruited consecutively. An interviewer-administered questionnaire was used to record sociodemographic and clinical data including the Clinical Disease Activity Index. A score 10.1–22.0 was taken as moderate and more than 22.1 was taken as high disease activity. The self-administered Depression, Anxiety, Stress Scale-21 (DASS-21) tool which has been validated for the Sri Lankan population was used. Statistical analysis was done using descriptive analysis and Chi-Square.

Results: A total of 118 participants were recruited in this study. Majority of the participants ($n=105$) were female and had received a secondary school education (70%). Based on the CDAI assessment most were in the moderate (39%) and high disease activity groups (36%). Prevalence of Depression, Anxiety and Stress were found to be higher than the baseline level of 1% in the general population. A breakdown of the prevalence is shown in Figure 1. Further analysis of each arm, depression anxiety and stress were carried out independently excluding the non-responders. A higher level of prevalence of all three parameters was observed with the deterioration of functional status evidenced by the inability to walk and grip a ball firmly in the palm without it falling. Prevalence of depression was associated with age > 60 years ($p=0.035$), increased disease activity ($p=0.004$) and the loss of their job due to poor health ($p=0.01$). Higher prevalence of anxiety was associated with increased disease activity ($p=0.023$). A marked increase in stress level was associated with loss of the job ($p=0.009$) and morning stiffness > 60 minutes ($p=0.001$). Several Pre-existing co-morbidities were associated with depression and anxiety (Table 1). No association was observed between stress and pre-existing comorbidities.

Figure 1. Prevalence of depression, anxiety and stress among patients with rheumatoid arthritis

Table 1. Correlation of comorbidities with depression and anxiety.

Associated Factors		Depression		Anxiety	
		Yes	No	Yes	No
Diabetes Mellitus (%)	Identified	18(72)	07(28)	16(66)	08(34)
	Not Identified	37(45)	46(55)	46(55)	38(45)
P-value		0.016		0.298	
Ischaemic heart disease (%)	Identified	14(82)	03(18)	14(78)	04(22)
	Not Identified	41(45)	50(55)	48(53)	42(47)
P-value		0.005		0.056	
Dyslipidaemia (%)	Identified	20(67)	10(33)	25(78)	07(22)
	Not Identified	35(45)	43(55)	37(49)	39(51)
P-value		0.042		0.005	

Conclusion: Prevalence of depression, anxiety and stress among patients with rheumatoid arthritis is higher than the general population. Functional deterioration, disease activity and presence of co-morbidities are associated with these mental health issues. These can guide clinicians to screen high risk individuals for the mental health issues so that measures to relieve them would potentially improve quality of life and disease outcome.

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