Conclusions: Work impairment is highly prevalent in contemporary rheumatoid arthritis patients. It is significantly correlated with mental health, even after adjusting for disease severity factors. Baseline mental health also predicts progression of work impairment. The relationship is likely bidirectional, and future research is justified to evaluate whether mental health interventions could improve work outcomes.

Disclosure of Interest: None declared

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THU0101

TISSUE METABOLITE OF TYPE I COLLAGEN, C1M, AND CRP PREDICTS STRUCTURAL PROGRESSION OF RHEUMATOID ARTHRITIS

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Background: Biomarkers of rheumatoid arthritis (RA) disease activity typically measure inflammation or autoimmunity (e.g. CRP, rheumatoid factor (RF)). Another class of biomarkers are structural proteins of the joint. C1M and C3M, metabolites of type I and III collagen, are such biomarkers. These biomarkers have previously been documented to provide additional value as compared to standard inflammation biomarkers, for prognosis and prediction of response to treatment¹.

Objectives: We investigated the relationship of high serum levels of C1M or C3M to radiographic progression, and benchmarked to CRP levels and RF status, demonstrated to be associated with structural progression².

Methods: Placebo treated patients of the OSK123 studies (Ph3 clinical trials testing efficacy of fostamatinib) with baseline serum biomarkers C1M, C3M, CRP and RF were included ($n_{BL}=474$). Van der Heijde mTSS was calculated at baseline and 24 week ($n_{24}=264$). Progression was defined as moderate or rapid (≥ 0.5 or ≥ 5 mTSS units/y). Patients were divided into subgroups; low, high or very high C1M, C3M and CRP (above/below median and highest quartile), or RF negative, positive and high positive (≥ 110 U/L)². Difference in clinical parameters were analysed by Mann-Whitney/Chi-squared tests, and multivariate predictive calculations by **Classification And Regression Tree** analysis including covariates (age, BMI, gender and disease activity assessment scores).

Results: High C1M, C3M and CRP levels were significantly associated with measures of disease activity ($p<0.05$) and patient reported scores ($p<0.05$). RF_{pos} was also associated with disease active scores ($p<0.05$). RF_{pos} and CRP ($p<0.001$), as well as C1M and C3M ($p<0.05$), were significantly associated with mTSS at baseline. For prognostic measures, there were 2.5 and 4-fold as many rapid progressors in the C1M_{high} and CRP_{high} ($p<0.05$), and in the C1M_{veryhigh} and CRP_{veryhigh} groups ($p<0.001$) compared C1M_{low} and CRP_{low}, respectively. C1M and CRP performed similarly in the predictive analysis with AUCs of 0.67 and 0.69 (table 1). The best model involving C1M in predicting rapid progressor included BMI, SJC and HAQ (AUC 0.85), whereas the best model for CRP included CRP, BMI, SJC and HAQ (AUC 0.85). C3M and RF did not provide prognostic value.

Model description	Progressors (delta mTSS ≥ 0.5 units per year)		Rapid progressors (delta mTSS ≥ 5 units per year)	
	AUC Specificity Sensitivity Correctly identified	Model parameters	AUC Specificity Sensitivity Correctly identified	Model parameters
C1M alone	0.600 59.7 53.8 56.7	C1Mveryhigh C1Mhigh	0.672 83.1 45.8 64.5	C1Mveryhigh C1Mhigh
C1M with demo., clinical ass., and X-ray	0.732 87.8 40.5 64.1	C1Mveryhigh Age BMI Disease duration HAQ ERN JSN	0.849 78.4 73.9 76.2	C1Mveryhigh BMI Disease duration HAQ
CRP alone	0.594 85.1 28.8 56.9	CRPveryhigh CRPhigh	0.687 84.0 50 67.0	CRPveryhigh CRPhigh
CRP with demo., clinical ass., and X-ray	0.717 76.1 51.9 64.0	CRPhigh Age BMI Disease duration SJC HAQ	0.847 53.4 95.7 74.2	CRPhigh BMI SJC HAQ

Conclusions: Of the four markers analysed only C1M and CRP were associated with structural progression. They seem to perform equally well, but reflect two different aspects of disease pathogenesis (tissue turnover vs. inflammation), thus may provide individual, but supplementary, information. These simple measures may be important for enrichment of clinical trials with structural progressors.

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HIGH RATES OF RESIDUAL DISEASE ACTIVITY DESPITE CURRENT THERAPIES IN A REAL LIFE RHEUMATOID ARTHRITIS COHORT: DATA FROM 1096 PATIENTS

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Background: It is unclear if the widespread use of biologic DMARDs (bDMARDs) and the implementation of the treat to target approach have led to better disease control in patients with rheumatoid arthritis (RA) in daily clinical practice.

Objectives: To study the longitudinal changes in disease activity in a large, real life, longitudinal RA cohort.

Methods: Multicenter (11 hospitals, 3 private offices), prospective, RA epidemiological study in Greece. Demographics, disease characteristics, treatments and co-morbidities were collected via a web-based platform in registered patients at baseline and one year after their 1st visit.

Results: 1,096 RA patients with available paired evaluations one year apart (mean interval: 13.4 $\pm$ 3.6 months) were included (women: 78%, mean age: 62.8 years, mean disease duration: 11 years, RF and/or anti-CCP positive: 60%, mean HAQ: 0.44 $\pm$ 0.56). At baseline, 50% (n=548) of patients were on conventional DMARDs (csDMARDs) alone, 35% on cs- and b-DMARD combination (n=379) and 11% on bDMARD monotherapy (n=124). Among bDMARD treated patients, 60% were