(CCP3) and rheumatoid factor (RF)] data were collected at baseline. Regression analyses, Kaplan-Meier analysis and Log-Rank test were performed.

Results: US synovitis was detected in ≥ 1 longitudinal US scan in 69/186 (37.1%) at-risk individuals (median time to first developing US synovitis: 53 weeks, IQR 27.0–105.8; median number of joints with US synovitis: 2.0, IQR 1.0–2.0). As shown in Table 1, only anti-CCP3 Ab were significantly associated with development of US sub-clinical synovitis in the multi-variable analysis while borderline results were observed with age.

Table 1. Regression analyses for the development of US synovitis.

	Univariable analysis		Multivariable analysis	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Gender (male)	1.02 (0.52–2.02)	0.95	/	/
Age	1.03 (1.01–1.06)	<0.01	1.03 (1.00–1.06)	0.03
Tenderness in the hands	0.86 (0.46–1.61)	0.64	/	/
EMS	1.60 (0.87–2.95)	0.13	/	/
Anti-CCP2 Ab (high titre)	2.79 (1.37–5.67)	<0.01	1.20 (0.50–2.89)	0.69
Anti-CCP3+	4.44 (2.28–8.66)	<0.01	3.30 (1.39–7.89)	<0.01
RF+	2.96 (0.46–1.61)	0.01	1.45 (0.68–3.11)	0.33

CCP2+ individuals with positive anti-CCP3 Ab show a significantly reduced sub-clinical synovitis-free survival rate compared with individuals with negative anti-CCP3 Ab (Figure 1). At 1- and 2-year follow-up, respectively 23.3% and 38.3% of individuals with dual CCP2/CCP3 positivity developed sub-clinical synovitis on longitudinal scans, compared with 8.4% and 13.3% of CCP2+ individuals with negative anti-CCP3 Ab ($p=0.01$) (Figure 1a).

Figure 1. Kaplan-Meier analysis shows US sub-clinical synovitis free survival time in CCP2+ at-risk individuals.

Similar results were observed in the subgroup of high level CCP2+ individuals. At 1- and 2-year follow-up, respectively 24.5% and 39.4% of high level CCP2/anti-CCP3+, but only 6.1% and 15.2% of CCP2+ individuals with negative anti-CCP3 developed sub-clinical synovitis on longitudinal scans ($p<0.01$) (Figure 1b).

Conclusion: In anti-CCP2+ at-risk individuals with MSK symptoms, anti-CCP3 antibodies improve prediction of imminent development of subclinical joint inflammation. This may represent the critical time-point for interventions to prevent the onset of joint disease. This is also a unique population for investigating the drivers of joint involvement in the development of RA.

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POS0465 DIFFERENT CLINICAL RELEVANCE OF ANTI-CITRULLINATED PROTEINS ANTIBODIES IN RA PATIENTS

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Background: Anti-citrullinated proteins antibodies (ACPA) are a broad group of antibodies, including antibodies to citrullinated fibrinogen, antibodies to cyclic citrullinated peptide (anti-CCP), antibodies to modified citrullinated vimentin (anti-MCV), antibodies to citrullinated α -enolase.

Objectives: To find a potential relationship between ACPA and disease activity, bone destruction, and ACPAs responses to various therapeutic regimens.

Methods: The study included 232 patients (pts) with rheumatoid arthritis (RA); 90 pts (74 women, Me; IQR age 53.0 (38.0–58.5) years had early RA, with mean disease duration 5.0 (4.0–9.0) months, DAS 28 5.3 (4.4–6.1); 142 pts had advanced stage of the disease (123 women, median age 51.0 (43.0–60.0) years, disease duration 56.0 (24.0–96.0) months, DAS 28 6.2 (5.5–6.8)). Pts with early RA received methotrexate (MTX) subcutaneously at average 17.5 mg dose once weekly. Pts with advanced RA received the following anti-B-cell therapy: 34 pts - rituximab (RTX); 20 pts - RTX biosimilar; 43 pts - tocilizumab (TCZ) in combination with conventional DMARDs. Serum anti-CCP and anti-MCV concentrations were measured using ELISA.

Results: 77 (85.6%) pts with early RA were high positive for anti-CCP, and 29 (70.7%) pts - high positive for anti-MCV. A positive correlation was found between anti-MCV and DAS 28 ($r=0.4$, $p=0.04$). As for advanced RA, 78 (80.4%) pts were high positive for anti-CCP, and 70 (79.5%) - for anti-MCV. There was a positive correlation between anti-MCV concentration and SDAI ($r=0.4$, $p=0.02$), as well as CDAI ($r=0.4$, $p=0.02$). No significant correlations were found between the anti-CCP levels and activity indices, anti-CCP and acute-phase parameters in both early and advanced RA groups. Higher total Sharp scores (96.5 (65.0–122.0)) were found in pts high positive for anti-MCV ($n=79$), compared to low-positive/negative (57.0 (31.0–88.0)), respectively, ($n=27$, $p<0.05$). anti-MCV levels dropped significantly in pts on RTX and TCZ therapy at weeks 12 and 24 after initiation of treatment, while high anti-CCP concentration persisted throughout the treatment (Table 1)

Table 1.

Indicators	Anti-CCP, U/ml	Anti-MCV, U/ml
RTX group, n=34		
- baseline	100,0 (37,9–100,0)	559,4 (139,2–1000,0)
- 12 weeks	100,0 (26,1–100,0)	295,9 (74,0–962,7) ¹
- 24 weeks	100,0 (29,0–100,0)	194,7 (58,3–844,8) ¹
RTX biosimilar group, n=20		
- baseline	112,7 (18,3–264,8)	392,6 (75,7–1000,0)
- 12 weeks	71,7 (12,4–161,6)	210,5 (40,3–940,6) ¹
- 24 weeks	61,3 (13,12–129,4)	153,8 (43,1–702,8)
TCZ group, n=43		
- baseline	354,8 (67,9–500,0)	762,3 (106,9–2393,1)
- 8 weeks	500,0 (84,4–500,0) ¹	266,6 (85,8–927,0) ¹
- 24 weeks	355,8 (39,8–500,0)	135,7 (27,0–662,1) ¹

Note: ¹ $p<0,05$ vs baseline

Conclusion: anti-MCV levels correlated with inflammatory activity and development of bone destruction, and were decreasing in pts on treatment. Anti-CCP was less responsive, showed minor changes during treatment, therefore its' thorough monitoring was not feasible.

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