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THU0066 IN EARLY RHEUMATOID ARTHRITIS ANTI-CITRULLINATED PEPTIDE ANTIBODIES ASSOCIATE WITH LOWER NUMBER OF AFFECTED JOINTS, AND IGM RHEUMATOID FACTOR WITH SYSTEMIC INFLAMMATION IN AN ANTI-CITRULLINE DEPENDENT MANNER

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Background: Recent studies have shown divergent associations between rheumatoid arthritis (RA)-associated autoantibodies and RA onset phenotype. Whereas some studies report more inflammation in seronegative patients [1, 2], others report that rheumatoid factor (RF) associates with high baseline disease activity [3].

Objectives: To define how individual RA-associated autoantibodies associate with individual disease activity score (DAS28, DAS28CRP) components at the time of RA diagnosis.

Methods: Sixteen individual ACPA reactivities, anti-CCP2, IgA-, IgG- and IgM-RF were analyzed centrally in baseline sera from 1600 RA patients classified according to the 1987 ACR criteria. All antibody cut-offs were determined as the 98th percentile among controls. The results were related to CRP, ESR, number of swollen and tender joints, DAS28, DAS28CRP, global disease activity (visual analogue scale), and health assessment questionnaire obtained at baseline.

Results: Individually, anti-CCP2, IgA RF and IgM RF associated with low counts of swollen and tender joints, with strongest association to anti-CCP2, and with high ESR. The association to low joint counts was stronger to number of individual ACPA reactivities than to anti-CCP2 levels (table). In multiple regression adjusted for age, sex and inclusion year, ACPA number associated strictly with low joint counts whereas IgM RF level associated with increased inflammatory markers, especially ESR (table). Also among IgM RF negative patients, occurrence of ACPA associated with low swollen and tender joint counts. Contrary, among ACPA negative patients, IgM showed no association to elevated ESR. The

Abstract THU0066 – Figure 1

effect of RF on ESR increased with the number of individual ACPA reactivities present, most prominently for IgM RF (figure).

Conclusion: In early RA, ACPA associate with low counts of affected joints and IgM RF associates with elevated ESR in an ACPA-dependent manner. The latter finding relates to in vitro studies showing enhanced inflammatory effect of ACPA immune complexes with addition of RF[4, 5]. Future RA studies relating autoantibodies to disease activity may benefit from evaluating the impact of individual antibodies as well as distinct DAS components separately.

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	IgA RF	IgG RF	IgM RF	ACPA
N (%) antibody positive	692 (43.2)	529 (33.1)	916 (57.2)	1020 (63.8)
Multiple regression:				
CRP P value (β)	0.6914 (0.011)	0.3162 (-0.026)	0.0106 (0.071)	0.6889 (0.011)
ESR P value (β)	0.0215 (0.062)	0.1237 (0.039)	<0.0001 (0.108)	0.0380 (0.057)
SJC P value (β)	0.6175 (0.013)	0.2110 (-0.032)	0.0645 (0.051)	<0.0001 (-0.122)
TJC P value (β)	0.6168 (0.014)	0.4120 (-0.021)	0.8712 (0.005)	0.0007 (-0.094)

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