

**A139 LOW AVIDITY ANTI-CITRULLINATED PROTEIN ANTIBODIES (ACPA) ARE ASSOCIATED WITH HIGH RADIOGRAPHIC PROGRESSION IN RHEUMATOID ARTHRITIS**

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**Background and objectives** Anti-citrullinated protein antibodies (ACPA) are specific for Rheumatoid Arthritis (RA). Their presence is predictive for development to RA and they have been implicated in disease-pathogenesis in animal studies. The biology of the ACPA response and its consequence are poorly studied in humans. We have shown that ACPA display a relatively low avidity which correlated with the absence of avidity maturation in time.

**Materials and Methods** We determined the avidity of the ACPA response and the impact on clinical phenotype.

**Results** Although of low avidity, variation in ACPA-avidity was observed between patients. In this study we show that the avidity of ACPA is associated with clinical outcomes. Intriguingly, the presence of low avidity ACPA and not higher avidity ACPA is associated with higher rate of joint destruction as measured by erosions and joint space narrowing. In-vitro experiments support the idea that low avidity ACPA may contribute more to tissue pathology because of a better tissue-penetration capacity.

**Conclusions** Within ACPA positive individuals it is the patients with the lowest ACPA avidities that display the most severe joint damage.