Evaluating Transitions from Pre-Rheumatoid Arthritis to Clinically-Apparent Inflammatory Arthritis

S. Haville (MD, CUSOM) [1], J. Seifert[1], S. Barzideh[1], L.K. Moss[1], N. Rao[2], A. Johnsen[2], J. Buckner[3], E. James[3], S. Posso[3], G. Firestein[4], D. Boyle[4], W. Robinson[5], V.M. Holers[1] and K.D. Deane[1]

[1]University of Colorado Denver, [2]Janssen R&D, [3]Benaroya Research Institute, [4]University of California San Diego, [5]Stanford University

Rheumatoid Arthritis (RA) has a 'pre-RA' period defined as elevated antibodies to citrullinated protein antibodies (ACPA) before clinically-apparent Inflammatory Arthritis (IA). ACPA elevations can predict future IA in symptomatic individuals; however, it is unclear how ACPA relates to future IA in asymptomatic individuals. There is limited understanding of how individuals who develop IA in prospective studies compare to those with new RA found through standard referrals.

We identified 86 ACPA(+) individuals (CCP3, Inova) without IA who were followed prospectively for incident IA. We also evaluated 57 CCP3+ patients with EarlyRA at a baseline visit <30 days from confirmed IA. We evaluated joint symptoms, examination findings and disease activity through incident IA, and between individuals who converted to IA and patients with EarlyRA.

19/84 (22%) of anti-CCP3+ participants developed IA ('converters') at a median of 509 days of follow-up. At baseline, CCP3+ converters reported longer morning stiffness and had higher levels of CCP3 and RFIgM compared to CCP3+ subjects who did not develop IA. 'Converters' without any joint symptoms at baseline trended towards a longer duration to IA compared to those with baseline symptoms (median 686 vs 363 days, p~0.09). At the time of diagnosis of IA, 'converters' had less symptoms, disease activity and lower CCP3 than patients with EarlyRA.

In CCP3+ individuals, morning stiffness and higher CCP3 and RFIgM were associated with incident IA; in addition, a subset of CCP3+ individuals without symptoms at baseline developed IA. These findings impact prediction models for future IA. The lower disease activity in 'converters' to IA versus EarlyRA indicates that prospective follow-up of ACPA+ individuals could identify IA when disease activity is less, perhaps indicating a stage of disease more responsive to therapy.