Change in Functional Disability in ACPA-positive Arthralgia Patients Prior to Progression to Inflammatory Arthritis

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Background: Only one study (1) has assessed functional limitation in the pre-clinical phase of rheumatoid arthritis. Finding that functional limitations already exist during the symptomatic pre-arthritis phase. We assessed baseline and change in patient reported outcomes (PROs) in the lead up to progression to inflammatory arthritis (IA) and its association with progression to IA.

Methods: From June 2008 to August 2016, 205 CCP positive patients without clinical synovitis were observed 3 monthly for 12 months and then as clinically indicated. The end point was development of IA within 12 months. - One patient was excluded as only baseline data were available. PROs including HAQ, fatigue VAS, disease activity (DA) VAS and pain VAS were recorded at each visit. Cox regression was used to assess the association of each PRO at baseline with progression, then latent growth curves (LGC) were constructed to model change in PRO over time. The LGC were added as covariates in the cox regression models to determine whether changes in PROs over 12 months were associated with progression.

Results: 50 out of 205 cases developed IA (Progressors), within 12 months (Table 1).

Table 1: Patient Demographics and Mean baseline PRO's

	Non Progressors (n=155)	Progressors (n=50)
Number of Males (%)	37 (24%)	17 (34%)
Mean Age	53.6	53.4
Mean HAQ	0.54	0.59
Mean Pain VAS	28.4	26.9
Mean Fatigue VAS	32.2	37.8
Mean DA VAS	25.5	25.1

There was no significant relationship between any of the PRO's at baseline and progression to IA using the initial Cox regression model. When change in PROs were added as covariates to the cox regression models, there were small but statistically significant effects of change in HAQ, Pain, DA and fatigue on progression. . The hazard ratio (HR) for progression increased by 2.0 per 1.0 unit increase in HAQ per 12 months (95% CI 1.81, 31.34, p=0.005); by 1.01 per additional 1mm of fatigue VAS per 12 months (95% CI 1.01, 1.07, p=0.002); by 1.03 per mm increase in DA VAS per 12 months (95% CI 1.00, 1.11, p=0.036) and by 1.05 per mm increase in pain VAS per 12 months (95% CI 1.02, 1.08, p<0.001).

Conclusion: We found no association with baseline HAQ, fatigue, disease activity and fatigue with progression to IA in ACPA-positive patients. However, the rate of change in each PRO was associated with a small but statistically significant increase in HR of progression.

1. ten Brinck RM vSH, Mangnus L, Burgers LE, Reijnierse M, Huizinga TW, van der Helm-van Mil AH. Functional Disability in Patients Presenting with Clinically Suspect Arthralgia and Progression to Clinical Arthritis [abstract]. Arthritis Rheumatol. 2016;68 supl 10.