Conclusions: Low levels of MMP-7 and FGA at baseline were associated with better clinical outcome in eRA patients. Following further characterisation, such biomarkers would be of high clinical relevance for the optimisation of treatment of RA.

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FRI0046

PATIENTS PRESENTING WITH NEW MUSCULOSKELETAL SYMPTOMS IN THE WRISTS, HANDS AND FEET ENRICHES DETECTION OF ANTI-CCP ANTIBODIES IN PRIMARY CARE – A NATIONAL COHORT STUDY

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Background: Selecting patients with new non-specific musculoskeletal complaints can enrich the prevalence of anti-cyclic citrullinated peptide (anti-CCP) antibodies compared with the general population.¹ Patients with rheumatoid arthritis (RA) frequently present with involvement of the wrist, hands and feet. Patients with elderly onset RA have a higher frequency of polymyalgic onset. However, it is unknown if elderly patients with shoulder complaints are more likely to be CCP positive.

Objectives: To confirm the proportion of individuals with new-onset, non-specific MSK symptoms who were anti-CCP positive (CCP+) across a national cohort and investigate the initial presenting complaint of all individuals, as this may help determine whether there is a symptom complex that would prompt antibody testing. In addition to determine if the risk of being CCP + is increased in older patients presenting with shoulder symptoms.

Methods: Individuals aged ≥ 18 years with new musculoskeletal complaints without synovitis from primary care were recruited prospectively. Participants completed a questionnaire on baseline musculoskeletal symptoms and provided a blood sample for anti-CCP antibody (Phadia CCP-2) testing. CCP+ individuals were invited to attend follow-up in the rheumatology department, Leeds. The association between CCP status, smoking and shared epitope status was also assessed.

Results: 4257 individuals were recruited, 2.9% (125/4257) were CCP+, a significantly higher proportion compared with the general population (1% (95% CI 2.4% >3.5% $p < 0.001$)). Patients who presented with pain in the wrists, hands (RR 2.2 (1.5–2.9), $p < 0.001$) or feet (RR 1.72 (1.2–2.4), $p < 0.001$) had an increased relative risk of being CCP+. Patients who were older than 60 years who presented with shoulder symptoms (4.8% (7/146)) were no more likely to be CCP + than those who did not have shoulder symptoms (3.2% (31/1007), chi square $p = 0.313$) and had the same prevalence of CCP + as those <60 years (3.5% (13/370), chi square $p = 0.461$). A significantly higher proportion of ever smokers were CCP+ (14.2% (48/337)) compared with never smokers (3.3% (64/1926); chi square $p < 0.001$). Ever smokers were also more likely than never smokers to be shared epitope positive in CCP + individuals (62.2% (23/37) cf 37.8% (14/37); $p < 0.007$).

Conclusions: Selecting individuals with new non-specific MSK symptoms without synovitis enriched the prevalence of anti-CCP positivity to 2.9%. Patients presenting with symptoms localising to the wrists, hands and feet were more likely to be CCP + which could prompt anti-CCP testing in these patients in primary care. Patients with shoulder complaints were no more likely to be CCP + than those without shoulder symptoms and had the same prevalence of CCP + as those <60 years.

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FRI0047

MRI INTEROSSEOUS TENDON INFLAMMATION OCCURS IN ANTI-CCP POSITIVE AT-RISK INDIVIDUALS AND MAY PRECEDE THE DEVELOPMENT OF SYNOVITIS

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Background: Tenosynovitis (TSV) occurs in individuals at-risk of developing RA and could explain pain and stiffness in the absence of synovitis. TSV of the wrist and finger flexor tendons has been described in at-risk individuals but involvement of other hand tendons has not been well investigated. The hand interossei are crucial to hand function and can become inflamed in RA.¹ Whether the interosseous tendons (IT) are sites of inflammation in at-risk individuals, and how this relates to joint inflammation and clinical features is unknown.

Objectives: To describe the anatomy, prevalence, pattern and clinical associations of IT inflammation in anti-CCP positive at-risk individuals.

Methods: Anti-CCP positive individuals with no synovitis (CCP+), healthy controls (HC), DMARD-naïve early RA patients (ERA) and treated 'late' RA patients (LRA) were recruited. All subjects underwent clinical and MRI assessment. 1.5T or 3T unilateral hand MRI scans were consensus scored for RAMRIS, TSV and IT inflammation by two radiologists. IT inflammation was defined as enhancing tissue around the tendon evident in two planes. For RAMRIS and tenosynovitis, scores were adjusted for 193 age-matched controls.² To understand the anatomical basis for MRI IT inflammation, a cadaveric study was performed on 20 fresh hand specimens; coloured dyes were injected along the first dorsal IT and into the adjacent second MCP joint and specimens were frozen and sectioned.

Results: 93 CCP+, 20 HC, 47 ERA and 28 LRA were recruited. Frequency of swollen and tender joints, MRI inflammation (synovitis, BME, erosions, TSV) and CRP level increased along the RA continuum with increasing disease duration. The proportion of patients with IT inflammation increased along the RA continuum. No HC, 18/93 (19%) CCP+, 23/47 (49%) ERA and 16/28 (57%) LRA patients had inflammation of ≥ 1 IT ($p < 0.001$). The number of affected ITs increased along the RA continuum ($p < 0.001$) and tendons associated with MCPJs 2 and 5 were most commonly affected. IT inflammation and MRI synovitis were associated with MCPJ swelling [OR 2.7 (0.9, 8.1) and OR 3.1 (1.0, 9.8) respectively] but IT inflammation was the only feature independently associated with MCPJ tenderness [OR 3.1 (1.4, 6.8) $p = 0.004$]. In CCP+, 99/372 (27%) MCPJs had only one MRI abnormality; in 68% of these the abnormality was extra-capsular (57% TSV and 11% IT inflammation). No IT sheath was identified in the cadaveric specimens suggesting the MRI findings represent peri-tendonitis rather than TSV. Dye studies indicated no clear communication between the IT and the adjacent joint (figure 1).

Axial MRI showing inflammation of the 3rd palmar interosseous tendon and frozen section showing green dye around the interosseous tendon and blue dye within the MCP joint

Abstract FRI0047 – Figure 1. Axial MRI showing inflammation of the 3rd palmar interosseous tendon and frozen section showing green dye around the interosseous tendon and blue dye within the MCP joint