withdrawal in patients with RA in remission. In a previous post hoc analysis of the AVERT trial (NCT01142726), in which several potential factors were assessed, erosion, supra-threshold MRI bone oedema, bone erosion (assessed by MRI individual and combined scores) and HAQ-DI scores in patients with DAS28 (CRP) >2.6 were associated with clinical relapse 6 and 12 months after complete drug withdrawal following 12 months of blinded treatment with abatacept + MTX or abatacept or MTX alone.\(^1,2\) Knowledge of the thresholds for these measures, above which relapse is more likely to occur, may aid clinical decisions about when to withdraw treatment in patients who have achieved remission.

Objectives: To evaluate post hoc the association between different thresholds of MRI and HAQ-DI scores at Month 12 and the risk of relapse at Months 18 and 24 in AVERT.

Methods: This analysis compared relapse event rates at Months 18 and 24 in patients with DAS28 (CRP) >2.6 but with differing severities of synovitis, bone oedema and erosion (assessed by MRI individual and combined scores) and HAQ-DI scores at Month 12. A relapse event was defined by the doubling of TJC28 and SJC28 and an increase in DAS28 (CRP) >1.2 relative to the Month 12 visit. Synovitis, bone oedema and erosion in the dominant hand and wrist MRI were scored using the OMERACT RAMRIS. Severity of each score was defined by cut-offs of >3 for synovitis, >2 for bone oedema, >7 for erosion and >0.5 for HAQ-DI. Univariate logistic models were conducted for comparisons and odds ratios (OR) with 95% CI and associated p-values.

Results: All randomised and treated patients with DAS28 (CRP) >2.6 at Month 12 and relapse status available at Months 18 and 24 (n=155) were included. Among the overall study cohort at Month 12, 70 (45.2%) patients with DAS28 (CRP) >2.6 had a higher synovitis score (>3), 28 (18.1%) had a higher bone oedema score (>2), 39 (25.2%) had a higher combined score (>7), 73 (47.1%) had a higher erosion score (>5) and 42 (27.1%) had a higher combined score (>7). Among patients with low categories of both proteins, 79% achieved low DAS28 at 3 months, while only 18% of those in high categories for MMP-7 and 58% versus 22%, respectively, achieved low DAS28 (p<0.001; figure 1B and C). Among patients with low categories of both proteins, 60% of patients with low versus high levels of either MMP-7 or FGA, 60% versus 24% and 58% versus 22%, respectively, achieved low DAS28 (p<0.001; figure 1B and C). Among patients with low categories of both proteins, 79% achieved low DAS28 at 3 months, while only 18% of those in high categories for both proteins (p<0.001; figure 1D).

Conclusions: It was possible to define MRI and HAQ-DI scores in patients with DAS28 (CRP) remission that were predictive of relapse 6 and 12 months after complete drug withdrawal in AVERT. Assessment of imaging and physical functional scores was important in patients achieving remission may aid clinical decisions on when to withdraw therapy in MTX-naive patients with RA.

REFERENCES:

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Abstract FR0044 – Figure 1. Association Between Month 12 MRI and HAQ-DI Scores and Relapse Status at Months 18 and 24

Conclusions: It was possible to define MRI and HAQ-DI scores in patients with DAS28 (CRP) remission that were predictive of relapse 6 and 12 months after complete drug withdrawal in AVERT. Assessment of imaging and physical functional scores was important in patients achieving remission may aid clinical decisions on when to withdraw therapy in MTX-naive patients with RA.

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Abstract FR0045 – Figure 1. Association of baseline levels of MMP-7 and FGA as predictors of LDA at 3 months. Receiver operating characteristic curve analysis and area under the curve of MMP-7 and FGA (A), proportion of patients achieving low DAS28 among groups dichotomised by MMP-7 (B), FGA (C) or using combination of MMP-7 and FGA (D), respectively.
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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FR0047 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. 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. 1T 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 19 age-matched controls. To understand the anatomical basis for MRI IT inflammation, a cadaveric study was performed on 20 fresh hand specimens; coloured dyes were injected after 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, 8.8) 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-tenonitis rather than TSV. Dye studies indicated no clear communication between the IT and the adjacent joint (figure 1).

Disclosure of Interest: None declared


FR0046 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 out 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 where 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 and feet (RR 2.2 (1.5–2.9), p<0.001) or feet (RR 1.72 (1.2–2.4), p<0.001) 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% (425/337)) 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) of 37.8% (14/37); p<0.007).

Conclusions: Selecting individuals with new non-specific MSK symptoms without out 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 more likely to be CCP+ than those without shoulder symptoms and had the same prevalence of CCP+ as those<60 years.

REFERENCE:

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