Australian Rheumatology Association annual scientific meeting abstract

Changes in the total MRI inflammation score are associated with changes in clinical disease activity in RA patients who are escalating therapy in a treat-to-target (T2T) regimen

Aims

To investigate whether changes in RA disease activity were associated with MRI inflammation on T2T escalation.

Methods

80 seropositive rheumatoid arthritis (RA) patients on conventional disease-modifying anti-rheumatic drugs (cDMARDs) were enrolled if they had DAS28CRP > 3.2: Group A escalated to another cDMARD combination, Group B to anti-TNF therapy/cDMARDs. Contrast-enhanced 3T-MRI wrist scans were obtained before and 4 months after regimen change. Scan pairs were scored by one experienced reader (reliability to be presented) for synovitis, osteitis and tenosynovitis, summed as MRI(i) score. Associations between DAS28CRP and MRI inflammation were investigated.

Results

58 patients were enrolled in Group A (42 female / 12 male) and 22 in Group B (18 / 4). 62 scan pairs were available. DAS28CRP and disease duration were lower in Group A than B ; 4.22 vs 5.16 (p = 0.001) and 30 vs 77 months (p = 0.01). Median (range) ΔDAS28CRP (A, B) were -0.92 (-3.30, 1.61), -1.38 (-3.59, 0.26) (p =0.31) and for ΔMRI(i) were 0 (-25, 7) and 0 (-7, 28) (p =0.37). Combining groups, ΔMRI(i) correlated with ΔDAS28CRP (Spearman's 0.33, P = 0.009). Using multiple linear regression analysis adjusting for age, gender, duration, and anti-CCP titre, ΔDAS28CRP was associated wth ΔMRI(i); so that for every unit increase in ΔDAS28CRP there was 1.57U increase in ΔMRI(i), p = 0.0697. Group A ΔMRI(i) (-3.38, 95%CI -5.53 to -1.23) was greater than Group B (1.62, -1.99 to 5.22) by -5 units, p = 0.0167. ΔMRI(i) was associated with the baseline MRI erosion score (beta estimate -0.285, p = 0.0023).

Conclusions

We report the first study investigating the link between clinical and imaging inflammation on T2T escalation. The association was surprisingly weak, especially in those escalating to anti-TNFs where some inflammation may have been fixed, associated with erosion and longer disease duration, and less amenable to intervention.