



Libraries and Learning Services

University of Auckland Research Repository, ResearchSpace

Version

This is the Accepted Manuscript version of the following article. This version is defined in the NISO recommended practice RP-8-2008

<http://www.niso.org/publications/rp/>

Suggested Reference

McQueen, F., Chapman, P., Pollock, T., D'Souza, D., Lee, A., Dalbeth, N., . . . Doyle, A. (2017). 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. In *Internal Medicine Journal: Special Issue* Vol. 47, Supp 2 (pp. 8-9). doi: [10.1111/imj.13426](https://doi.org/10.1111/imj.13426)

Copyright

Items in ResearchSpace are protected by copyright, with all rights reserved, unless otherwise indicated. Previously published items are made available in accordance with the copyright policy of the publisher.

This is the peer reviewed version of the following article: McQueen, F., Chapman, P., Pollock, T., D'Souza, D., Lee, A., Dalbeth, N., . . . Doyle, A. (2017). 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. In *Internal Medicine Journal: Special Issue* Vol. 47, Supp 2 (pp. 8-9). doi: [10.1111/imj.13426](https://doi.org/10.1111/imj.13426)

This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving

For more information, see [General copyright](#), [Publisher copyright](#), [SHERPA/RoMEO](#).

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) Δ DAS28CRP (A, B) were -0.92 (-3.30, 1.61), -1.38 (-3.59, 0.26) ($p = 0.31$) and for Δ MRI(i) were 0 (-25, 7) and 0 (-7, 28) ($p = 0.37$). Combining groups, Δ MRI(i) correlated with Δ DAS28CRP (Spearman's 0.33, $P = 0.009$). Using multiple linear regression analysis adjusting for age, gender, duration, and anti-CCP titre, Δ DAS28CRP was associated with Δ MRI(i); so that for every unit increase in Δ DAS28CRP there was 1.57U increase in Δ MRI(i), $p = 0.0697$. Group A Δ MRI(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, $p = 0.0167$. Δ MRI(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.