RHEUMATOID ARTHRITIS: CLINICAL FEATURES

081. RADIOGRAPHIC PROGRESSION RATES OVER THE FIRST 10 YEARS IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS: A SYSTEMATIC REVIEW

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Background: Long-term radiographic progression is an important outcome measure in RA. The presence of erosions and joint space narrowing can mark the failure or success of a treatment. Understanding the natural course of the disease, and the way in which radiographic damage progresses over time, is fundamental in improving the clinical management of RA. Using data from published, longitudinal cohort studies on patients with early RA, this meta-analysis aims to update a review conducted in 2003 on radiographic progression ($n = 7$), and provide a summary of the overall progression rates of radiographic damage over the first 10 years of disease.

Methods: Publications were identified by computerized searches of PubMed, Cochrane Library (including CENTRAL, CDSR, DARE and HTA) and Scopus. All databases were searched from inception to 31 February 2014. Studies had to fulfil the following inclusion criteria for meta-analysis: observational cohort studies; long-term data (>5 years) and patients with early RA (<3 years from symptom onset to first visit). The sample size, mean and S.D. of either the Larsen or total Sharp score for radiographic damage was recorded at all available follow-up time points. These estimates were then meta-analytically modelled using an inverse variance weighted least squares regression to estimate annual progression rates for both scoring methods.

Results: A total of 2618 publications were identified in the literature search. Of these, 28 studies were eligible for inclusion into the meta-analysis. Ten of these studies provided sufficient data for the analysis. Three studies reported Larsen scores, while seven studies reported Sharp scores. The meta-analysis indicated an annual rate of 2.6 (95% CI 2.3, 2.9) Larsen units per year and 6.1 (95% CI 5.8, 6.4) Sharp units per year over the 10-year follow-up period. This represents a change of 1.3% of maximum damage per year for both scoring methods. The models indicate that the Larsen exhibits a linear rate of progression over 10 years, whereas the Sharp score progresses more rapidly, with the rate of damage accelerating each year.

Conclusion: This review provides precise estimates of radiographic progression over the first 10 years of disease for patients with early RA. The review found relatively few publications on the long-term (>5 year) progression of radiographic damage in RA. Compared with figures reported previously, the annual progression rate for Larsen scores was lower (3.8 *vs*. 2.6), while the annual progression rate for total Sharp scores was higher (4.3 *vs*. 6.1). This highlights the differences in radiographic scoring methods and the potential pitfalls in comparing studies that use different radiographic scoring methods. The influence of potential confounding factors on these rates of progression will be examined.

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