RHEUMATOID ARTHRITIS

DXR-BMD FORETELLS 20-YEAR EROSIONS

Early loss of bone mineral density (BMD) in rheumatoid arthritis (RA), as measured by a computerized method for analyzing standard hand radiographs, predicts 20-year joint damage as measured by Larsen score. Stratifying an early RA cohort on the basis of a high or low early rate of change revealed that early loss in hand BMD predicts the extent of long-term radiographic damage. Predictive capability was evident “as early as at 1 year and all the way up to 20 years,” says Meliha Kapetanovic, lead author of a report of the findings. Nevertheless, the authors note in the paper that the prognostic value in RA “must be confined to the group level”.

Digital X-ray radiogrammetry (DXR) is a reliable method for quantifying BMD, and is less affected by human error than other methods for assessing bone loss or joint damage, such as Larsen score. Kapetanovic and colleagues used DXR to measure BMD of the second to fourth metacarpal bones in 183 patients from the Lund early RA cohort, recruited between 1985 and 1989. “Studies of potential new predictors of progression are very hard to perform in cohorts recruited today, as these patients will be treated much more aggressively,” explains Kapetanovic, adding that the Lund cohort “reflects the natural course of RA”. The study included those patients with early, definite RA for whom two radiographs were available in the first year of clinical assessment. The early rate of DXR-BMD change (indicating bone loss) was calculated from these radiographs, and joint damage was assessed after 1, 2, 3, 4, 5, 10, 15 and 20 years by DXR-BMD and Larsen score.

The data confirm previous studies of DXR-BMD’s capacity to predict radiographic damage, and extend the follow-up timescale. In future “the idea is to try to combine DXR with other putative markers of progression, since no single marker has sufficient prognostic power.”

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Original article Kapetanovic, M. C. *et al.* Early changes in bone mineral density measured by digital X-ray radiogrammetry predict up to 20 years radiological outcome in rheumatoid arthritis. *Arthritis Res. Ther.* **13**, R31 (2011)