

Chapter 8

High prevalence of vertebral deformities in elderly patients with early rheumatoid arthritis

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Letter

Generalized osteoporosis and local bone loss is a well-known complication of rheumatoid arthritis (RA). Vertebral fractures are the most common type of osteoporotic fracture, and are associated with increased mortality and morbidity.¹ The presence of vertebral fractures increases the risk of new vertebral and non-vertebral fractures.² The prevalence of vertebral deformities in the Dutch population aged >55 in women and men is 15 and 12%, respectively.³ For patients with established RA (mean duration 16.6 years), an odds ratio (OR) for vertebral deformities of 2.0 was found,⁴ leading to an expected prevalence of vertebral deformities in elderly RA patients of 30 and 24% for women and men, respectively. Since data on vertebral deformities in early RA are scarce, we measured the prevalence of this condition in a cross-sectional study.

Consecutive patients aged >60 years were included who fulfilled the 1987 American College of Rheumatology criteria for RA at the first visit to our early arthritis clinic and completed a minimum of 2 years follow-up. The cumulative disease activity per patient during follow-up was calculated as the average disease activity score (DAS28). Bone mineral density was measured of the total hip (BMD-hip) and vertebrae L2-L4 (BMD-spine). Radiographs of the spine (T5-L4) were performed and scored according to a standardized semi-quantitative method.⁵ Grades 0 to 3 represent a reduction in anterior, middle, and/or posterior vertebral heights of <20%, 20%-25%, 25%-40% and >40%, respectively.

Ninety-eight patients (69% female) were included. The mean age at study inclusion was 68.7 years and the mean duration of follow-up was 6.1 years, 60% was ACPA positive. Vitamin D levels of <20 nmol/l were not found. In 28 patients (29%) at least one vertebral deformity was found (table 1).

Table 1. Number of vertebral deformations

Vertebral deformities	N (%)
0 deformity	70
1 deformity	21 (21.5%)
Grade I	16
Grade II	4
Grade III	1
2 deformities	7 (7.1%)
Grade I	2
Grade I + II	2
Grade II	1
Grade II + III	1
Grade III + III	1

The group of patients with versus the group without vertebral deformities had similar mean cumulative DAS28 (3.59 vs 3.57) and HAQ-scores (0.63 vs 0.50, both NS). However, they were older at average ($p=0,001$), and had lower mean BMD-hip ($p=0.017$) compared to those without vertebral deformities, even a trend remained after correction for age, gender and rheumatoid factor status ($p=0.07$). The mean BMD-spine did not differ between the groups. The mean Z-scores were lower in those with a vertebral deformity; the difference was statistically significant at the hips. The use of corticosteroids, DMARDs, anti-TNF or bisphosphonates did not differ between the groups. Of 28 patients with vertebral deformities, only eight (29%) used bisphosphonates.

Almost 30% of these elderly patients with relatively early RA had vertebral deformities, which is in line with the pre-estimated percentage for patients >60 years with established RA. This figure is higher than was found in the healthy population⁶ and is in line with previous studies in longstanding RA of more than 15 years duration.⁷⁻⁸ The presently found association between vertebral deformities and low Z-scores and BMD-hip is also in accordance with previous data.^{7,9} Only a minority of patients received bisphosphonate treatment, although bisphosphonates can reduce vertebral fractures by almost 50%.¹⁰

In conclusion, these results support the need for alertness for vertebral deformities even in early RA.

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