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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. The presence of vertebral fractures increases the risk of new vertebral and non-vertebral fractures. The prevalence of vertebral deformities in the Dutch population aged >55 in women and men is 15 and 12%, respectively. For patients with established RA (mean duration 16.6 years), an odds ratio (OR) for vertebral deformities of 2.0 was found, 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. 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>
<thead>
<tr>
<th>Vertebral deformities</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 deformity</td>
<td>70</td>
</tr>
<tr>
<td>1 deformity</td>
<td>21 (21.5%)</td>
</tr>
<tr>
<td>Grade I</td>
<td>16</td>
</tr>
<tr>
<td>Grade II</td>
<td>4</td>
</tr>
<tr>
<td>Grade III</td>
<td>1</td>
</tr>
<tr>
<td>2 deformities</td>
<td>7 (7.1%)</td>
</tr>
<tr>
<td>Grade I</td>
<td>2</td>
</tr>
<tr>
<td>Grade I + II</td>
<td>2</td>
</tr>
<tr>
<td>Grade II</td>
<td>1</td>
</tr>
<tr>
<td>Grade II + III</td>
<td>1</td>
</tr>
<tr>
<td>Grade III + III</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1. Number of vertebral deformations
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 population\(^6\) 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.

References


