WHAT ABOUT BONE MINERAL DENSITY IN RHEUMATOID ARTHRITIS PATIENTS USING GLUCOCORTICOIDS?

Keywords: Osteoporosis, Comorbidities, Rheumatoid arthritis

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Background: Osteoporosis is a major co-morbidity to screen for in patients with RA. Inflammation, low activity level, and treatments, particularly glucocorticoids, increase the risk of osteoporosis in RA patients and expose them to a high fracture risk. Few studies examined glucocorticoid-induced osteoporosis in patients with RA, especially in Africa.

Objectives: Our study aimed to compare the densitometric profile of RA patients receiving glucocorticoids with that of patients not receiving glucocorticoids, and to assess the fracture risk by the FRAX.

Methods: We conducted a retrospective observational study including patients with RA according to the ACR EULAR criteria in the rheumatology department of Kassab Institute of orthopaedics. General data, demographics, inflammation markers (sedimentation rate (SR) and C reactive protein (CRP)), and disease activity (DAS28 (CRP)) were collected. We compared the parameters of bone mineral density (BMD) and FRAX score for two groups: G1 patients who received glucocorticoids and G2 patients who did not.

Results: A total of 207 patients with RA (169 women and 38 men) were included. The mean age was 57±12.2 years [29-85]. The mean duration of disease progression was 7.1±7 years [0-41]. Sixty percent of RA patients had positive RF and/or ACPA. Obesity was noted in 34% of cases. The mean SR and CRP were 42±32mm, and 21.5±28mg/l, respectively. The mean DAS28 (CRP) was 6.23±4.49. Seventy percent of the patients (n=144) were using systemic corticosteroid therapy with a mean dose of 6.26mg±4.5 [0-15] prednisone equivalent. The mean age was 47.6±27mm, and 21.5±28mg/l, respectively. The mean DAS28 (CRP) was 6.23±4.49. Seventy percent of the patients (n=144) were using systemic corticosteroid therapy with a mean dose of 6.26mg±4.5 [0-15] prednisone equivalent.

Conclusion: Patients receiving glucocorticoids had a lower bone density, T-score, and a higher fracture risk. Osteoporosis and the high incidence of osteoporotic fractures are dramatic consequences of glucocorticoid therapy in RA patients, leading to marked impairment of their quality of life.

Table 1: Comparison of the BMD parameters and Frax score in the two groups

<table>
<thead>
<tr>
<th>Fracture type</th>
<th>BMD (T score)</th>
<th>BMD (BMD)</th>
<th>Frax</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>G2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertebral site</td>
<td>0.91±0.19</td>
<td>-2.11±1.51</td>
<td>22±8.1</td>
<td>0.002</td>
</tr>
<tr>
<td>Femoral site</td>
<td>0.79±0.16</td>
<td>-1.88±1.22</td>
<td>21±8.1</td>
<td>0.001</td>
</tr>
<tr>
<td>T score</td>
<td>0.22±1.8</td>
<td>0.93±1.07</td>
<td>0.002</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Fractured vertebrae characteristics, n= 42*

* In total, 44 fractured vertebrae were identified; only 42 are described in the table, since only 3 vertebrae were classified in the patient in whom 5 fractured vertebrae were detected.

METHODS: Cross-sectional study in a sub population of Latin American patients, older than 50 years with chest tomography indicated during hospitalization in 2020 for reasons other than suspicion of vertebral bone disease. Patients with secondary causes of vertebral fracture, trauma and spinal instrumentation were excluded. Reading by two independent expert researchers with Genant's semi-quantitative visual method and the ABQ method. Clinical and sociodemographic variables were captured (RedCap); Descriptive statistical analysis (STATA 17). The project was approved by the ethics committee.

RESULTS: A total of 317 patients with a mean age of 69.4 years and a predominance of males (57.1%) were included. The most frequent personal history was active smoking (15.8%), use of glucocorticoids in the last 5 years (12.9%), and alcohol consumption (75%). A prevalence of vertebral fractures of 8.5% was found, being more frequent in women in 51.8% of the cases, with T11 as the most frequent location (See Table 1 and Figure 1). Only two vertebrae did not define a fracture according to the ABQ method compared to Genant. A disagreement was found in 77.7% of the cases with respect to the final report.

Conclusion: The prevalence of vertebral fractures reported here is lower than that reported in the literature when x-ray imaging is used; it is possible that the use of the tomography influences this result and possibly allows a more objective assessment. Careful evaluation of chest tomographic studies performed during the hospital stay may contribute to an opportune diagnosis of insufficiency fracture associated with osteoporosis.

Table 1. Genant classification

- Grade 0.5
- Grade 1 - Mild
- Grade 2 - Moderate
- Grade 3 - Severe

Table 2. Association between bone metabolism markers and increases in bone mineral density in patients with postmenopausal osteoporosis treated with romosozumab

Keywords: Osteoporosis, Imaging

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Background: Osteoporosis is one of the main public health problems, leading to the appearance of fragility fractures. Within these, there are vertebral fractures, which in their vast majority have an asymptomatic course, which is why they are presented as incidental findings in imaging studies.

Objectives: To estimate the prevalence of insufficiency fractures in the thoracic vertebrae in patients hospitalized for any cause in a Hospital in Bogotá (Colombia).