Background: Breast cancer is the most common cancer affecting women both before and after the menopause. Aromatase inhibitors (AIs) used as adjuvant therapy cause bone loss and increase the risk of osteoporosis (OP) (1).

Objectives: To assess the bone status and the frequency of OP in breast cancer patients using AIs.

Methods: We conducted a retrospective study in the rheumatology department, over 5 years (2016-2020).

Inclusion criteria: patients followed for breast neoplasm in oncology department on AIs therapy and referred to rheumatology department for bone evaluation. All of these patients underwent an evaluation of bone mineral density (BMD) and phosphocalcic assessment.

Exclusion criteria: patients treated by another type of hormone therapy and having other risk factors for OP.

Results: 200 breast cancer women were enrolled for the study, 92 patients (46%) were treated with AIs, the average age was 58.22 years (41 - 75 years) with an average age of discovery of the breast cancer of 46.75 years and the average time between the start of AIs therapy and the diagnosis of OP was 21.6 months. The characteristics of the patients are summed up in Table 1. 97% of patients were postmenopausal and 38% of them had menopause secondary to treatment.

In AIs users, 85 patients (92.3%) were osteoporotic, and 11% had bone fractures. In regard to osteodensitometry measurement, lumbar spine was the most affected site (88%) with mean T score of -2.98 and mean BMD of 0.854, followed by femoral neck (17%) with mean T score of -2.8 and mean BMD of 0.740 and total hip (14%) with mean T score of -3.10 and mean BMD of 0.497.

The cancer was metastatic in 15.18% patients, 75% of the group had bone metastasis and 25% had visceral metastasis.

The phosphocalcic status of the osteoporotic patients was: mean calcemia: 2.83 mg / l, mean calcium: 131.8 mg / 24h, mean phosphatemia: 48.09 mg / l, mean 25 OH Vit D level: 19.78 mg / ml, mean PTH: 79 pg / ml.

Osteoporotic patients were treated with bisphosphonates, 60% women had received Alendronate, 17% Risedronate and 12% Zoledronate in addition to dietary measures and correction of calcium and vitamin D deficiency.

Conclusion: AIs are correlated with a high risk of OP and fractures in 30% of patients (2), the frequency of OP in our series is estimated at 42.5%. Assessment of bone status and OP clinical risk factors should be systematic in all breast cancer patients receiving adjuvant AIs therapy.

Bisphosphonates appear to be beneficial in treating secondary OP, in preventing bone fractures, and in reducing the incidence of breast cancer bone metastases.

REFERENCES:

Table 1. Characteristics of osteoporotic patients using AIs therapy

<table>
<thead>
<tr>
<th>Scale</th>
<th>Subscale</th>
<th>Group1</th>
<th>Group2</th>
<th>Group3</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH</td>
<td></td>
<td>58.3[50;58]</td>
<td>58.3[51;63]</td>
<td>50[50;66.7]</td>
</tr>
<tr>
<td>FS*</td>
<td>Physical functioning</td>
<td>73.3[60;86.7]</td>
<td>73.3[60;86.7]</td>
<td>86.7[70;90]</td>
</tr>
<tr>
<td></td>
<td>Role functioning</td>
<td>66.7[66.7;100]</td>
<td>83.3[50;100]</td>
<td>100[83.3;100]</td>
</tr>
<tr>
<td></td>
<td>Emotional functioning</td>
<td>83.3[66.7;100]</td>
<td>75[66.7;91.7]</td>
<td>91.6[83.3;100]</td>
</tr>
<tr>
<td></td>
<td>Social functioning</td>
<td>83.3[66.7;100]</td>
<td>83.3[50;100]</td>
<td>100[83.3;100]</td>
</tr>
<tr>
<td>SS*</td>
<td>Pain</td>
<td>33.3[50.0]</td>
<td>16.7[33.3]</td>
<td>0[0;16.7]</td>
</tr>
</tbody>
</table>

*There are only the scores that had got a statistical difference between the groups.

Kruskal-Wallis H and post-hoc (Dwass-Steel-Critchlow-Fligner (DSF) pairwise comparisons) tests for data analysis were performed.

Results: A Kruskal-Wallis H test has shown a statistically significant difference in physical (χ2(2)=75.4; p=0.023), role (χ2(2)=98.7; p<0.001), emotion (χ2(2)=76.9; p=0.021) functioning and pain (χ2(2)=8.4; p=0.015) scores between the different groups. A post-hoc test with DSF pairwise comparisons of median has shown a statistically significant difference between 1 and 3 groups (W=3,904; p=0.016) for physical functioning, between 2 and 3 groups (W=3,353; p=0.004) for role functioning, between 2 and 3 groups (W=4,03; p=0.012) for emotional functioning, between 1 and 3 groups (W=3,97; p=0.014) for pain scale.

Conclusion: The study has shown that MD associated with anticancer drug treatment adversely affected the QoL of cancer patients received anticancer drug treatment by reducing a physical functioning and by increasing pain scores. Presence of other types of MD adversely affect the QoL by reducing emotional and role functioning.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.22686