Fracture incidence after 3 years of aromatase inhibitor therapy

Submitted by a.bergoend on Fri, 04/24/2015 - 13:41

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Type de publication Article de revue
Auteur Bouvard, Béatrice [1], Soulié, P. [2], Hoppé, Emmanuel [3], Georgin-Mege, Martine [4], Royer, Mathieu [5], Mesgouez-Nebout, N [6], Lassalle, C [7], Cellier, Patrice [8], Jadaud, E. [9], Abadie-Lacourtoisie, S. [10], Tuchais, C [11], Vinchon-Petit, S. [12], Audran, Maurice [13], Chappard, Daniel [14], Legrand, Erick [15]
Pays Royaume-Uni
Editeur Oxford University Press
Ville Oxford
Type Article scientifique dans une revue à comité de lecture
Année 2014
Langue Anglais
Date 2014 Apr
Numéro 4
Pagination 843-847
Volume 25
Titre de la revue Annals of Oncology
ISSN 1569-8041
Mots-clés Age Factors [16], Aged [17], Aromatase Inhibitors [18], Bone Density [19], Breast Neoplasms [20], Female [21], Fractures, Bone [22], Humans [23], Middle Aged [24], Postmenopause [25]
BACKGROUND: The purpose of this study was to describe the fracture incidence and bone mineral density (BMD) evolution in a large cohort of post-menopausal women with breast cancer after 3 years of aromatase inhibitor (AI) therapy.

PATIENTS AND METHODS: A prospective, longitudinal study in real-life setting. Each woman had an extensive medical assessment, a biological evaluation, a BMD measurement, and systematic spinal X-rays at baseline and after 3 years of AI therapy. Women with osteoporosis at baseline (T-score < -2.5 and/or non-traumatic fracture history) were treated by oral weekly bisphosphonates.

RESULTS: Among 497 women (mean age 63.8 ± 9.6 years) included in this study, 389 had a bone evaluation both at baseline and after 3 years of AI therapy: 267 women (mean age 61.2 ± 8.6) with no osteoporosis at baseline and 122 women (mean age 67.2 ± 9.1) with osteoporosis at baseline justifying a weekly oral bisphosphonate treatment. Women without bisphosphonates had a significant decrease in spine BMD (-3.5%, P < 0.01), neck BMD (-2.0%, P < 0.01), and total hip BMD (-2.1%, P < 0.01) over the 3 years but only 15 of them (5.6%) presented an incident vertebral or non-vertebral fracture. In osteoporotic women treated with bisphosphonates, spine and hip BMD were maintained at 3 years but 12 of them (9.8%) had an incident fracture. These fractured women were significantly older (74.1 ± 9.8 versus 66.5 ± 8.8) but also presented BMD loss during treatment suggesting poor adherence to bisphosphonate treatment.

CONCLUSION: This real-life study confirmed that AIs induced moderate bone loss and low fracture incidence in post-menopausal women without initial osteoporosis. In women with baseline osteoporosis and AI therapy, oral bisphosphonates maintain BMD but were associated with a persistent fracture risk, particularly in older women.