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Research Article

FRAX Calculated without BMD Resulting in a Higher Fracture Risk Than That Calculated with BMD in Women with Early Breast Cancer

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Background (and Purpose). The aim of this study was to investigate the importance of including the measurement of bone mineral density (BMD) in reliable fracture risk assessment for women diagnosed with early nonmetastatic breast cancer (EBC) before AI treatment if zoledronic acid is not an option. *Material and Methods*. One hundred and sixteen women with EBC were included in the study before initiating AI treatment. Most participants were osteopenic. The 10-year probability of hip fracture and major osteoporotic fracture was calculated with and without BMD based on clinical information collected at baseline using the fracture risk assessment (FRAX) tool. To compare data, the nonparametric tests were used. *Results*. There was a significant difference ($p<0.001$) in the number of high-risk and low-risk FRAX score of hip fracture between before and after including BMD values. The high-risk category decreased by 50.9%, while the low-risk category increased by 42.9%. In FRAX score of major osteoporotic the findings were similar ($p<0.001$): The high-risk and moderate-risk category decreased by 70.4% and 4.9%, respectively, while the low-risk category increased by 43.8% when including BMD value. When stratified by age, patients aged 65 years or older were at a significantly ($p<0.001$) higher risk of suffering a hip or major osteoporotic fracture, highlighting the importance of including BMD measurements in this age group. *Conclusions*. Our data support that DXA scanning of women with EBC should be performed to avoid overestimation of osteoporosis before AI treatment. It is particularly important in patients older than 65 years of age and when zoledronic acid is not an option.

1. Introduction

Breast cancer treatment has improved in Europe over the past decades with an 82% 5-year age-adjusted relative survival for women diagnosed between 2000 and 2007 [1]. However, breast cancer is still the number one cause of cancer-related death in Europe, although lung cancer as the number two cause of death in Europe is the most frequent cause of cancer death in Denmark. The currently expected levels of survival are improved in part due to breast cancer screening programs providing earlier detection and new improved adjuvant therapy options [2]. The decreased mortality rate is mainly seen among younger patients [2].

After initial treatment of breast cancer by surgery patients are often offered adjuvant treatments such as radiotherapy, chemotherapy, HER2-directed treatment, and antihormonal therapy for patients with estrogen receptor positive disease (approximately 75%). Adjuvant antihormonal treatment is for premenopausal patients usually 5-10 years on tamoxifen and for postmenopausal patients five years on the aromatase inhibitor (AI) [2]. The AIs improve both disease-free survival