

Oncological and Antiresorptive Treatment of Breast Cancer: Dental Assessment and Risk of MRONJ Development

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Abstract : Background: Breast cancer (BC) is the most common cancer among women worldwide, and cases are continuing to increase in Sweden. Bone is the most common metastatic site in breast cancer patients, where > 65-75% of women with advanced breast cancer develop bone metastases during their disease. To prevent the skeletal-related events of metastases (e.g., pathological fractures, bone loss, cancer-induced bone pain, and hypercalcemia bone), two different classes of antiresorptive medications (AR), bisphosphonate and denosumab are typically administered every 3 to 4 weeks. Since 2015, adjuvant bisphosphonate treatment has been used every six months for three to five years in postmenopausal women for the prevention of skeletal metastases and improved survival. Methods: A case-control study was conducted to test the hypotheses that patients treated with high-dose AR are at higher risk of developing MRONJ than breast cancer patients with adjuvant bisphosphonate treatment at a lower dose. Medical and odontological data was collected between 2015-2020. Assessment of oral health and dental care before and during oncological treatment took place at the specialist clinic for Orofacial medicine linked to the specific hospital. Results: In total, 220 patients were included, 101 patients in the high-dose group and 119 patients in the adjuvant BP-treatment group. MRONJ was diagnosed in 13 patients (14%) in the high-dose group. The mandible was affected in most of the cases (84.6%), with a mean duration of high-dose treatment of 19.7 months. In 46.2% of cases, no dental cause of MRONJ could be identified. Overall, estrogen receptor-positive (ER+) BC was the most representative type in 172 patients (78.2%). However, this was 83.9% in the high-dose cases group. The most used drug was denosumab. Twenty-five patients (26.9%) switched their medication from ZOL to denosumab during their oncological treatment. Patients with ER+ breast cancer were reported in 88 patients (87.8%) in the adjuvant group that was treated with ZOL. Conclusions: MRONJ was diagnosed only in the high-dose AR group. Dental assessment and care of patients in the adjuvant group should be considered, with a recommendation to potentially prolong ZOL treatment from 3 to 5 years, with concomitant use of hormonal therapy in patients diagnosed with ER+ breast cancer to prevent bone loss induced by oncological treatment. A new referral for dental assessment is very important in the case of bone metastases when treatment with high dose AR will be required since it is associated with a higher risk of MRONJ.

Keywords : antiresorptive therapy, breast cancer, dental care, MRONJ

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