

# DENTAL AND PERIODONTAL HEALTH IN BREAST CANCER WOMEN IN ADJUVANT HORMONE THERAPY

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## Abstract

This cross-sectional study aimed to assess oral hygiene in a wide cohort (n=122) of BC patients, thus showing a possible correlation between bone health, vitamin D status, and oral health in BC women undergoing tamoxifen or AI treatment. Our findings showed that BC women had high prevalence of osteopenia/ osteoporosis, hypovitaminosis D, and a very high prevalence of mild/moderate periodontitis and low oro-dental care. This study might be a starting point for future works investigating the correlation between BC, osteoporosis and oral health to define a patient- oriented multidisciplinary management.

## Background:

Breast cancer (BC) is the most common malignancy and cause of mortality in women, presenting also with several treatment-related disabling complications. [1-4] In this scenario, an increased survival rate of women affected by BC with estrogen receptor-positive (ER) tumors has been observed after the introduction of adjuvant therapies, such as tamoxifen (TAM) and aromatase inhibitors (AIs), aimed at reducing the proliferative effects of estrogens on breast tissue in ER-positive BC patients. [5] However, these anti-hormonal pharmacological interventions, promoting bone resorption through aromatase blockade at bone tissue level might lower bone mineral density (BMD) with a resulting pathological condition, defined as cancer treatment-induced bone loss (CTIBL). [6] Moreover, BC women undergoing cancer treatments and anti-osteoporotic drugs might experience osteonecrosis of the jaw (ONJ) and periodontal tissue diseases, including gingivitis, and infections. [7]

## Materials and Methods:

The aim of this study was to assess the oral health status in patients with previous BC in adjuvant hormone therapy with TAM or with AIs (anastrozole, letrozole and exemestane). We recruited post-menopausal BC women referred to the Outpatient Clinic for Oncological Rehabilitation of the Physical Medicine and Rehabilitation Unit of the University Hospital "Maggiore della Carità", Novara, Italy from January to June 2020.

All the participants underwent a specialistic oral health evaluation, including the following outcome measures: the Decayed, Missing and Filled Permanent Teeth Index (DMFT), to assess dental caries prevalence as well as dental treatment needs; the Oral Hygiene Index (OHI), for the presence of debris/stain and calculus on the dental elements; the

Plaque Control and Record Index (PCR), to assess the presence of plaque on the dental elements; Gingival Bleeding Index (GBI), to evaluate gingival inflammation; the Periodontal Screening and Recording Index (PSR), to assess periodontal status; the Winkel Tongue Coating Index (WTCL), to evaluate the amount of tongue coating.

### Results:

Thus, 122 postmenopausal BC women (mean aged  $55.6 \pm 10.4$  years) were included in the final analysis. DMFT index had a high average value of  $16.07 \pm 7.05$  and similarly, OHI showed that only 11.5% (n=14) had good oral hygiene while 35.3% had a sufficient oral health and 53.2% (n=65) had an insufficient status. PCR index showed that in 33.6% (n=41) the plaque was present from 50% and 75% of the sites investigated and in 18.0% (n=22) of BC women in more than 75%. From PSR index assessment, it emerges that only 2.5% (n=3) had good oral health while 18.9% (n=23) had gingivitis, 63.1% (n=77) had a moderate periodontitis and 15.6% (n=19) had serious periodontitis.

### Conclusion:

Taken together, our findings showed that BC women had a very high prevalence of mild/moderate periodontitis and low oro-dental care. Oral hygiene assessment might be considered as crucial in BC women and could be implemented and screened in the clinical practice even in other disabling conditions. In this context, rehabilitation and oral health interventions could be included within the quality-of-life interventions for an adequate management of BC survivors.

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