

ORAL SIDE EFFECTS OF SYSTEMIC TREATMENT IN WOMEN WITH BREAST CANCER VISITING REHMAN MEDICAL INSTITUTE PESHAWAR A CROSS-SECTIONAL SURVEY

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ABSTRACT

Objectives: The aim of the study was to characterize the oral health in breast cancer survivors treated in the Rehman Medical Institute, Peshawar.

Materials & Methods: This was a cross-sectional study conducted at the Rehman Medical Institute Peshawar between Jan 2017 and June 2018 of women diagnosed with Breast Cancer who received care. Forty three patients were selected in both breast cancer groups as well as in control group. Initially diagnosed patients of breast cancer, followed by surgical therapy and additional radio and chemotherapy were included in this study. Whereas female patients who received (supplementary/solely) endocrine or immunological therapy were excluded from this study, similarly were the women with severe chronic diseases such as chronic heart disease, chronic obstructive pulmonary disease and other cancers. Statistical analysis analysis were performed with the SPSS, Version 22.0.

Results: Unfavorable oral health status of women who received breast cancer treatment compared to the oral health status of the control group has been shown in this study.

Conclusion: Results indicate a need for more education about the potential oral effects of breast cancer therapies and about providing the best possible care for patients undergoing breast cancer treatment.

Introduction

Breast cancer is the most common cancer among women responsible for the second largest number of cancers related to deaths in developed and developing countries¹. The risk of developing breast cancer during a lifetime is about 12% in western industrialized countries². Due to improved treatment regimens, survival is the Rate of women being treated, including surgery Radio/chemotherapy and targeted biotherapy, significantly changed over the past decades, with a 5-year survival of 86-90%³.

Etiology of breast cancer is mostly unknown; some of the well-known Risk factors include genetics, age, and early menstruation, late occurrence of menopause, alcohol abuse and obesity⁴. Treatment of breast cancer is mostly dependent upon the stage of the disease at presentation and histological & molecular profile of the tumor. Treatment includes surgical treatment which can be combined with adjuvant therapy to minimize the risk of distant metastases development.

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Chemotherapy and antiestrogen therapy are given before or after surgery⁵.

Breast cancer treatment has well documented adverse effects on patient oral health, which includes disturbance in taste, increased xerostomia and oral mucositis⁶. Oral mucositis was present in approximately 40% of these patients, with nearly half requiring medical intervention, including modification of the cytotoxic cancer therapy. Oral mucositis can be painful, and it badly affects patient food ingestion which can potentially cause even malnutrition. This can be accompanied by general health risks, including lowered immunity and aspiration of food due to swallowing disorders. Moreover, difficulty in ingesting food and poor oral hygiene can result in a synergistic increase in oral bacteria and an increased risk of aspiration pneumonia, resulting in a vicious circle⁷.

However, evidence on chronic dental infections and periodontitis is extremely rare, with only a few reports on the increased likelihood of developing caries in patients undergoing systemic chemotherapy⁸. Furthermore, it has been postulated that the improvement of oral health would alleviate the symptoms of oral mucositis in patients undergoing chemotherapy for solid tumors. Unfortunately, this hypothesis has not been validated⁹.

MATERIALS AND METHODS

This was a cross-sectional survey of women diagnosed with Breast Cancer who received care at the Rehman Medical Institute Peshawar between Jan 2017 and June 2018.

Breast Cancer patients who were scheduled to receive treatment at the Rehman Medical Institute Breast Care Center, Peshawar, were approached for inclusion in this study. A Breast Cancer patient was defined as a patient with a histologically confirmed diagnosis of non-metastatic cancer who was undergoing an active phase of adjuvant Breast Cancer treatment: conventional chemotherapy, or being treated with tamoxifen or AI therapy for at least three months.

The recruitment of Breast Cancer patients occurred during their regularly scheduled medical oncology clinic appointments. Trained research assistants approached potential study subjects in the waiting area of the oncology clinics and informed them about the study. Inclusion criteria were the initial diagnosis of breast cancer, followed by surgical therapy and additional radio- and chemotherapy. Women who received (supplementary/solely) endocrine or immunological therapy were excluded from this study, as were women with severe chronic diseases such as CHD, COPD or other cancers. Details about the type and length of chemotherapy were obtained from the patients' medical records.

Control group participants were postmenopausal women without a cancer diagnosis who were recruited from the Rehman College of Dentistry and Private Dental Clinic in various location of KPK. The control patients were mostly treated for acute pain, odontogenic abscesses, or dental trauma with the need for comprehensive restorations, and some patients were allocated to the hospital due to the complexity of their diagnosis. The consulted control women were in good general health and had no history of cancer.

In both patient groups, women who had less than six remaining teeth were excluded from this study. Inclusion criteria were also the provision of informed consent to participate in all examinations described in the protocol, including X-ray examinations and completing questionnaires.

All women were asked about their education levels, and they were required to complete two questionnaires about their general well-being and oral health impact profile.

All women, breast cancer survivors, and healthy controls were informed verbally and in writing about the nature of the investigation, and they all provided written consent to participate. While the women who underwent breast cancer therapy were recruited and asked to attend a special appointment for their oral assessment, the healthy women were examined after dental treatment, which comprised patients with acute dental pain and patients attending regular dental appointments.

Detail history of oral health status brushing habits and usual complaints of ulcer and mucositis was taken. The dental examination included the number of teeth, caries frequency (DMFT) and an examination of pulp necrosis using a cold thermal test.

STATISTICAL ANALYSIS

The data were entered into an Excel spread sheet (Microsoft), and then examined for accuracy and completeness. They were then imported into SPSS (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp; Released 2013). For descriptive analyses, means and standard deviations (SD) were calculated for normally distributed continuous variables, and medians and quartiles for non-normally distributed continuous variables and ordered variables. In addition, absolute and relative frequencies were computed for categorical variables.

RESULTS

Total of 43 patients having breast cancer were recruited in this study. The number of control patient was also kept 43 to make the result comparable.

The dental examination confirmed an unfavorable oral health status of women who received breast cancer treatment compared to the oral health status of the control group.

Table 1:

	Women with breast cancer	Healthy women
Age (years)	59 (±5.2)	60(±6.1)
Brushing habits daily	26%	22%
Dental visit in a last3 month	38%	17%
Body Mass Index	25 (±3)	23(±4.1)
Diabetes mellitus		

Table 2:

Oral health status	Women with breast cancer	Control healthy women	P value
DMFT	20(15-23)	18(16-22)	0.041
Missing teeth	4(2-5)	3(0-4)	0.03
Root canal treated	2(1-3)	1(0-2)	0.05
Xerostomia in last three months	2.31 ± 1.17	1.60 ± 1.26	0.04
Mucositis in the last three months	2.03 ± 1.13	1.21 ± 0.26	0.05
Halitosis in the last three months	1.87 ± 1.16	2.11 ± 0.82	0.043

DISCUSSION

This study assessed breast cancer patients and a control group of healthy postmenopausal women regarding their subjective oral health, oral health-related symptoms, dental health behaviors, and communication with health care providers. The data show that while breast cancer patients had high dental utilization, they nevertheless had serious oral health concerns and symptoms.

Regarding the oral health-related symptoms of breast cancer patients, the data showed that a higher percentage of these patients reported xerostomia than health postmenopausal women. Given that saliva is vital to overall oral health because a lack of saliva is associated with increased caries and other oral health impacts¹⁰, this finding needs to be communicated to health care providers interacting with breast cancer patients and should be followed up in future studies. Nevertheless, we believe that it is necessary to perform oral care focused on maintaining oral moisture to prevent deterioration of the oral environment due to dryness.

Patients with cancer had greater numbers of missing teeth and apical lesions, particularly lesions of endodontic origin. According to Taichman et al., a woman's estrogen status modulates the health of soft tissues within the oral cavity, as well as alveolar bone density and tooth loss. Hence, when women have conditions characterized by decreased hormonal activity, such as menopause, or receive chemotherapy and immunotherapy, the odds of developing gingivitis and losing teeth are substantially increased¹¹.

Since it can be anticipated that the future will see greater numbers of such patients, the importance of conducting clinical studies in these patients is apparent.

Depression and anxiety have negative impacts on self-care, including oral hygiene habits, and may eventually lead to a higher prevalence of periodontal disease, caries, and tooth loss^{12,13}. Numerous studies have reported that women undergoing cancer therapy experience a significant reduction in quality of life and suffer from depressive symptoms^{14,15}.

CONCLUSION

Breast cancer patients receiving systemic chemotherapeutic treatment often suffer from painful oral complications. In this study xerostomia, oral mucositis and tooth loss were highly prevalent in breast cancer survivors. Exercise has been shown to be an effective intervention in post-treatment care and to improve survivors' quality of life, a preventive oral health evaluation should be available prior to cancer treatment.

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