

Physiological Problems and Quality of life of Patients with Breast Cancer: A Review

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ABSTRACT

Breast cancer is not only the second most prevalent type of cancer, but also most frequent cause of cancer deaths in women. Breast cancer is a steroid hormone dependent tumor. In worldwide breast cancer considered to be the important and prevalent cancer among women. The disease itself may have an impact on the patient's psychological well-being and quality of life. Breast cancer patients with depression during treatment are found to have poorer health related quality of life. Still a lot of differences were observed between depression and treatment type. In this paper breast cancer related physiological problems, treatment processes and quality of life based on these processes are reviewed. Result: After thorough review of various works and observation of studies it is concluded that the screening practices of breast cancer is still low and Patient health related quality of life should be improved.

Key words: Chemotherapy, QOL, Breast cancer, Receptors.

INTRODUCTION

One out of two breast cancer patients are said to be having a psychiatric disorder, Depression. Estrogen(ER) and progesterone(PR) that can increase the normal and abnormal breast cell growth are the key determinants of hormone status in breast cancer therapy. This receptor hormonal status is determined by Immunohistochemistry and the results are correlated with the chemotherapy, hormone therapy and quality of life responses. Estrogen, a nuclear receptor protein has estrogen and DNA binding domains. It binds directly to the DNA and regulates the expression of other genes like PR. ER and PR receptors are highly predictive of breast cancer. Progesterone, the heterodimer encoded by a single gene¹⁸.

In Arab countries breast cancer is diagnosed mostly at advanced stages^{1, 14, 21-22} hence the incidence and mortality rates are high. By early detection of the cancer through screening activities

will show an effective reduction in Morbidity and mortality²⁻⁴. Still in some countries, women won't participate in screening activities like low participation rates in breast cancer screening activities have been reported among Arab women.

In an article depression prevalence with respect to health related quality of life¹³ in women with breast cancer was investigated with a sample of 60 women with the mean age of 43.8 years and concluded that more than half the patients are in depression and can be improved by increasing palliative care and clinical diagnosing in high risk group patients. Health related quality of life is assessed with functional assessment, detecting expressive symptom and Beck depression inventory. Most patients in chemotherapy group are found to be in much depression than in the radiotherapy group.

Lack of expression of the following receptors estrogen receptor (ER), Progesterone

receptor (PR) and HER2neu receptors causes Triple-negative breast cancers (TNBC), and it is of 15% of all breast cancers²⁰. In terms of therapeutic importance patients are classified according to estrogen and progesterone (ER/ PR) receptor status and nodal metastasis. Furthermore, they may be classified into sub-groups as ER/PR positive, negative and mixed statuses. In a test comprised of 79 post- and pre-menopausal breast cancer patients⁸ and it is concluded that in post-menopausal women ER+/PR- and ER-/PR- tumors were more frequent than ER+/PR+ tumors. Also, ER+/PR+ tumors are smaller than ER+/PR- tumors.

Immunotherapy Strategies

Immunotherapy is a kind of cancer treatment that use material made by the body or in a laboratory to restore the immune system; designed to boost the body's self defense to fight against cancer. By understanding the role of host immune system response in affecting the cancer growth and their response to the treatments, lot of advancements have been made in this field.

Various treatments have made over the years like Coley's adjuvant, high-dose interleukin 2, interferon alpha, intravesicular bacille Calmette Guérin, and allogeneic stem cell transplants, utilize the immune system to eradicate tumor cells^{10,15,17,19}.

The intrinsic properties exist within certain breast tumors that provoke a beneficial CTL response, in turn synergizes with chemotherapy. Some Other tumors can manipulate inflammatory pathways to promote metastatic tumor spread. The cytokine milieu is manipulated within the tumor microenvironment⁶ and a beneficial immune response during neoadjuvant therapy was triggered, thereby pathologic complete response rates have been enhanced and reducing the metastatic tumor spread.

Psychological Problems in Breast Cancer Patients

Psychological problems like depression, anxiety, poor self image and use of unhealthy strategies affect quality of life of breast cancer patient¹². Significantly pain and suffering are associated with the available treatment procedure.

In addition to the physiological, social and medical stress, chronic and persistent pain acts as an additional stress. Nerve damage and certain sensory disturbances like burning and sensory loss are the pathogenic mechanism involved in breast cancer and also be a part of side effects of surgical processes⁵.

Following the breast cancer surgery the patient has chronic neuropathetic syndrome like phantom breast pain, Intercosto brachial neuralgia and Neuroma pain. Radical mastectomy, a disfiguring type of breast cancer surgery that involves removal of breast, Major and minor breast muscles and lymph nodes⁷.

The sex hormone level in healthy women due to the effect of physical activity intervention is determined⁹. For primary and secondary prevention of several health problems the practice of regular physical activity is suggested by many health agencies worldwide. The main risk factor for breast cancer in post menopausal women is the prolonged exposure to high levels of endogenous estrogens. Independent of the menopausal state, 25% of reduction in the risk of breast cancer in the women associated with the physical activity¹¹.

The effect of physical activity on circulating sex hormones is relatively modest, and probably not clinically significant⁹. The amount of circulating sex hormones may not necessarily reflect their effects on target tissues, and physical activity may still have an effect on sex hormone function by modulating target-tissue sensitivity to these hormones.

RESULTS

Various databases like Medline, PubMed, Cochrane Database of Systematic Reviews, CINAHL Plus, Google Scholar, Index Medicus for WHO Eastern Mediterranean, and Asian Pacific Journal of Cancer Prevention are referred. Breast cancer screening participation rates are still low. Existence of depression in cancer patients has negative impact on quality of life in turn interfaces with the patient's ability to cope as well as with evolution of diseases

DISCUSSION

Depression, in most cases it is under diagnosed and under treated. Depressive symptoms like sadness, fatigue and weight alteration are considered to be normal and result of the treatment. In addition, several studies⁸ states that cell biology may influence the biochemical pathways promoted by the interaction of hormones to the respective receptors.

It is nature that women play an important role in a family, thus when a woman affected with breast cancer, there are possibilities that all the family members have some sort of apprehensions that may cause some ill. Hence the survivorship becomes important in breast cancer care in turn demands investigation of long term breast cancer diagnosis and treatment.

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