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Chapter 11

Breast Cancer Post Treatment Quality of Life

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Additional information is available at the end of the chapter

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1. Introduction

Malignant tumors are one of the biggest medical as well as social problems worldwide. The number of patients suffering from malignant diseases has doubled in the last 30 years. Therefore, malignant diseases are a global problem among which breast cancer is the most common malignant tumor in women (25% out of all malignant tumors). The diagnoses of cancer as well as functional disability due to therapeutic interventions affect life quality of breast cancer patients. Effects of therapeutic interventions, viz.lymphoedema, limited shoulder movement, along with socio-psychological effects, play a major influence on these patients, but these topics have not received any significant attention.

Due to lack of National Cancer Registry as well as precise data, within Bosnia and Herzegovina, it is still impossible to determine the exact number of breast cancer patients. The estimated number of breast cancer patients can only be assessed based on the World malignant illnesses database along with average malignant illnesses occurrence within the European region. Based on literature, 1373 new breast cancer patients can be estimated on annual basis in Bosnia and Herzegovina. (GLOBOCAN 2000. Cancer Incidence, Mortality and Prevalence Worldwide. Version 1.0)

The total number of registered malignant illnesses patients within the Federation of Bosnia and Herzegovina in 2007 was 4. 147. Within the Federation of Bosnia and Herzegovina a total of 487 new breast cancer patients were registered, with 98.2% (478) females and 1.8% (9) males. [1] n 148/487 were in the age group 45-54 years followed by 132/487 in 55-64 years and 125/487 breast cancer patients belonged to age group above 65 years of age. [1]

Based on Canton Sarajevo malignant illnesses database, incidence of breast cancer ranks accounts for a total of 181cases (177 women, 4 men) [1]

In the same year, in Republic Srpska from 4.268 registered malignant cancer patients, 8.83% were patients of breast cancer, (409) with 397 women and 12 men.

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In Brcko District no malignant diseases registry exists. The number of affected patients is roughly estimated from the District hospital reports. Information as such is deemed unreliable and therefore invalid.

Due to lack of cooperation between the two entities and Brcko District the total number of malignant diseases in Bosnia and Herzegovina does not exist.

Quality of life is defined as individual perception of his or her own position of existence based on two contexts. Namely, within cultural context as well as within personal assessment system context of one`s existence in relation to one`s expectations, goals, standards and priorities. This concept is truly broad as its complexity encompasses individual physical health, psychological status along with social and economic circumstances surrounding each individual. Quality of life reflects individual perception in relation to the level by which their needs have been met as well as the level by which their happiness has been achieved, personal satisfaction etc., regardless of their physical health status and their social and economic circumstances. Quality of life at its simplest definition would pose the following question, `How good is my life for me`. Life quality enhancement truly necessitates nourishment of human power and capability that include; optimism, creativity, inner motivation and sense of responsibility for oneself as well as for close ones. This is a basic human principle which projects the idea that the life we have is the life worth living.

Breast cancer patients therefore must have a realistic view on life and be aware of all possibilities. Their life quality can be affected not only by physical and functional deficit caused by the malignant illness, but also by medical intervention effects which include therapeutical interventions that significantly impair their physical as well as psychological life quality during and after the treatment. The major effects of medical therapeutical interventions are limited shoulder movement of the operated arm-side, lymphedema on the operated arm-side as well, and socio-psychological effects which impair emotional ability to function within social context.

As the treatment takes course, effects mentioned above take root. In line with that interdisciplinary cooperation for efficient treatment and rehabilitation where the breast cancer patient is the focus becomes of immense importance. It is also important to mention that animation of patients' interest and will to fight is of utmost significance. However, the lack of maintenance and the post treatment life quality downfall among breast cancer patients has failed to draw any significant attention of health professionals in Bosnia and Herzegovina. Causes of this situation are many, namely health professionals are overburdened by new cases to the extent that follow-up treatments and consultations happen only in cases of illness residue. Needless to say this situation leaves absolutely no space for adequate breast cancer post treatment, life quality consultation and rehabilitation.

Early detection and diagnosis of medical intervention effects during breast cancer treatment, offers higher treatment success and better control possibilities. [3] Patient education on

preventive measures of post-treatment effects as well as medical treatment effects during the course of treatment itself should be included in the breast cancer treatment protocol in order to better enhance the quality of breast cancer patients lives.

Taking into consideration that in Bosnia and Herzegovina team work between health professionals and breast cancer patients during the course of an early stage protocol for prevention and rehabilitation, is not included as a standard protocol procedure, it is important to note that proposal of such inclusion is a crucial factor in establishing a continuum for quality of life to prevent possible side effects. Breast cancer patients' quality of life estimates based on standardized questionnaire of EORTC (The European Organization for Research and Treatment of Cancer QLQ-C30 and Module BR23) [4] enables an efficient overview of the proposed treatment protocol.

2. Goals

Goals of this research are breast cancer patients' quality of life though post treatment period, all estimates are based on standardized questionnaire of European Organization for Research and Treatment of Cancer (hence onwards referred to as EORTC) QLQ-C30 and Module QLQ-BR23 (version 3). This study will help develop a protocol, to prevent breast cancer patients medical treatments side effects by offering an early intervention.

3. Material and methods

100 patients were selected from a Sarajevo Canton Breast Cancer Patients Association (Renesansa) previously treated for breast cancer. Research sample selection was based on three criteria; a)patients had completed their treatment between 1-20 years prior to enrollment in the study b) patients had not experienced a relapse c) patients had not experienced infection. All patients were examined and completed the quality of life questionnaires QLQ-C30 and Module QLQ-BR23. These questionnaires are standardized by the European Organization for Research and Treatment of Cancer (EORTC) – The Quality of Life Unit and consist of 30 questions which include the following: [5, 6]

1. Five functional scales: physical, role, emotional, social, and cognitive.
2. Three scales of symptoms: fatigue, pain, nausea, and vomiting.
3. Scale of global health status / quality of life

QLQ-C30 includes a string of single items which estimate additional symptoms that are often the subject of complaints of breast cancer patients: dyspnea, loss of appetite, insomnia, constipation, diarrhea and experiencing financial burden of the disease.[5, 6]

QLQ-BR 23 consists of 23 questions and includes the following:

1. Five multiple point scales: self-body image, sexual functioning, sexual satisfaction, future perspectives, and scales of symptoms that encompass systematic therapy side effects, breast symptoms, arm symptoms, disturbance due to hair loss.[5, 6]

Questionnaire result interpretation was carried out according to EORTC scoring manual.[5, 6] The patients were divided into a) limited shoulder movement group (39%), b) lymphoedema group (49%), c) both (27%), d) patients who experienced no effects (39%).

Correlation between risk-factors (BMI (body mass index), smoking, alcohol consumption and physical activities) and lymphoedema occurrence was calculated. In addition a correlation between above mentioned risk-factors and scale of physical performance was also calculated. The quality of life differences amongst the patients, who underwent radical mastectomy and partial mastectomy, were also examined. Moreover the correlation among breast cancer patients who manifested side effects of a given medical treatment in contradistinction to those who did not experience any of the side effects was assessed.

4. Results

Average age of study group was 58 (±1) years. 76% (n=100) of patients fall into the age group of over 50 years of age, while 38% belonged to the age group 51 – 60 years and 3% were <40 years of age**.** The study group included 54% retired, 31% employed and 15% unemployed patients. Work absence analysis shows 64% employed patients (n=31) had to take leave from 7 to 12 months from work for illness related reasons while 23% had leave of absence more than a year. A total of 48% patients (n=54) retired due to breast cancer.

According to the type of surgical treatment 71% patients underwent radical mastectomy with axillary dissection and 29% underwent partial mastectomy with axillary dissection. The nonexistence of National Program of Early Breast Cancer Detection adds to this number. In countries that have and practice early breast cancer detection programs around 60% of breast cancers are diagnosed at the early stage and have a 5 year survival up to 95%. [7, 8]

The study results show that there was a statistical significance in the difference in the quality of life between patients undergoing radical mastectomy as compared to partial mastectomy with partial mastectomy patients reporting a better quality of life. Thus indicating that, whenever possible, partial mastectomy should be prioritized in order to save and preserve QOL of breast cancer patients with reference to their body self-image.

None of the patients undergoing radical mastectomy received a breast reconstruction which could restore the body self-image, a key indicator for a better quality of life among the breast cancer patients. Total rehabilitation of breast cancer patients should include an option of reconstructive surgery and should be offered to breast cancer patients as a protocol.

72% received chemotherapy post operatively in the protocol, 79% had local radiotherapy (breast or chest wall), 76% received axillary and supraclavicular radiotherapy and 57% had hormonal therapy.

There were 61% overall survivors at 5-year 23% for 6-10 years, 9% at 11 to 15 years and 7 % for 16-20 year period. As compared to Bray F. et. al. [8] this study shows a lesser survival after 6 years post treatment period.

Body mass index (BMI) indicated that 72% patients were obese while only 28% had normal body weight. Variation range of BMI was between 22-49 kg/m^2. Average BMI value was 28.1kg/m^2 which indicated obesity, while in the research group of arm lymphoedema (n=49) average BMI value was 29.9 kg/m^2 which pointed to higher numerical value obesity.

Considering that World Health Organization lists obesity as postmenopausal breast cancer risk factor, it is recommended that breast cancer protocols must include compulsory body weight control along with nutritional programs and advice by a nutritionist. Several studies researched obesity as a lymphoedema risk factor. Memorial Sloan Kettering Cancer Center [9] study showed that BMI is a significant predictive lymphoedema risk factor among patients who received radiation and surgical treatment.

From the total number of research patients (n=100) preordained physical activity of minimum 30 minutes per day was done by 23% of research patients, while 77% followed sedentary lifestyle. Within its report on health conditions in 2002, the World Health Organization mentions physical inactivity as a breast cancer risk factor. [10] Sedentary way of life causes loss of energy that directly causes lack of care for one's physical and social condition thus negatively affecting breast patients' quality of life.

From the total number of research patients 34% were smokers and 77% suffered from fatigue while 60% suffered from breathing difficulties in from of dyspnea, thereby leading to a poor quality of life.

6-12% patients consumed alcohol either regularly or sporadically. Regular alcohol consumption increases breast cancer risk: two drinks a day by 30-40% and this is most probably due to increased level of estradiol. [11]

Risk factor correlation: BMI, smoking habit, alcohol consumption and physical activities with lymphoedema occurrence indicated the existence of statistical significance ($p<0,05$) only between BMI and physical activity. This enhances the need for body weight control along with physical activities program with the aim to prevent lymphoedema-medical-intervention side effects. Risk factors correlation: BMI and physical activities and physical scale, point out statistical significance on the level 0, 05 with 2 plasticity degrees, while between smoking habits and alcohol consumption no statistical relevance was noted.

According to medical intervention side effects, 39% experienced limited range of shoulder movement on the operated side, 49% experienced arm lymphoedema (the operated side arm circumference is bigger by 2cm or more than the circumference of the unaffected arm), 27% experienced lymphoedema and limited range of shoulder movement among which is one patient with affected plexus brachial on the operated side along with one patient with breast lymphoedema while 39% of patients experienced no side effects.

This study has shown the explicit statistical significance ($p<0, 05$) between breast cancer patients quality of life differences with medical intervention side effects (lymphoedema and limited range of shoulder movement) in relation to quality of life of breast cancer patients that experienced no medical intervention side effects. As was to be expected, this research

has shown that medical intervention side effects negatively affect life quality of researched patients, hence it can be concluded that medical intervention side effects prevention program is of immense importance and must be included in the breast cancer treatment protocol itself.

Within sample group, lymphoedema manifestation in relation to the type surgery, from the total number of research patients with lymphoedema (n=49) 68% of patients underwent radical mastectomy and axilla dissection, while 32% of patients underwent partial mastectomy and axilla dissection.

In relation to radiotherapy treatment, 84 %(n=49) patients had received local and lymph area radiotherapy and developed lymphedema, while 16% belonged to the group which did not receive radiotherapy treatment. The more radical the surgery and area of radiotherapy, the bigger the chance of medical intervention side effects occurrence.

Average age within the lymphoedema research group of patients was 59, 8 years of age while the average number within the group of patients that experienced medical intervention side effects were 56, 5 years of age. Kiel and Rademacker [12] reported that age of breast cancer patients is a statistically speaking significant factor which leads to lymphoedema.

All data point out to the significance and the need of early rehabilitation treatment related to the basic illness. In this research, on the other hand, only 5% of the patients underwent early rehabilitation treatment, 13% underwent delayed rehabilitation treatment related to medical intervention side effects, while 82% did not undergo physical treatment related to the breast cancer. This is to be noted as lack of treatment protocol for breast cancer patients.

Guidelines given by health professionals regarding medical intervention side effects prevention were given to only 8% of breast cancer patients. This has severe effects on quality of life of breast cancer patients. It is safe to conclude that all health professionals must be educated about medical intervention side effects prevention and treatment possibilities and options.

According to questionnaire EORTC QLQ-C30 (version 3) result analysis 100% of research patients had satisfactory level of physical scale on different levels, 98% had satisfactory level of daily role on different levels, 92% had satisfactory emotional scale on different levels, 97% had satisfactory cognitive scale on different levels, 96% had social satisfactory scale on different levels while 94% had satisfactory global life quality scale on different levels.

According to the results gained within all the functional scales, the group subject matter of this research has exhibited high values. It is important to note that this research group is specific in type, namely all research patients have completed medical treatment protocol of breast cancer at least one year before joining this study group, they experienced no reoccurrence and are socially active.

70% (n=100) patients experienced varying fatigue symptoms on different levels. It can be said that excessive fatigue can be attributed to habits such as smoking and alcohol

consumption as the research group of patients who smoked (n=34) reported excessive fatigue among 73% of researched patients.

This research has shown that within the sample group of patients with limited range of shoulder movement (n= 39) 82% experienced pain on different levels. Based on the symptom scale results, from the total number of researched patients 89% experienced no nausea and vomiting. 68% of patients experienced insomnia on different levels. On the overall basis, 74% patients expressed concern for their future health which badly affects their existing quality of life. 82% experienced no loss of appetite, while 85% had no constipation and 86% experienced no diarrhea. 88% experienced financial burden caused by the illness suffered. It is also important to note that according to the result analysis based on EORTC QLQ-BR23 questionnaire, 88% of patients expressed dissatisfaction with their body image, while 62% experienced no sexual desire.

5. Conclusion

Results of quality of life questionnaire EORTC QLQ-C30 analysis indicate that functional scale analysis results and overall life health status / quality are valid and applicable estimation of our patients' life quality. Similar results were gained from fatigue and pain symptom scale analysis and items estimated were dyspnea, insomnia, and financial impact of disease. Results gained from nausea and vomiting symptom scale analysis and items which estimate loss of appetite, constipation, and diarrhea while taking into consideration the specificity of our group were not relevant. Results obtained from Module QLQ-BR23 analysis indicate that scales of body image, sexual function, estimation of sexual pleasure, future perspectives estimation, breast and arm symptoms scales are valid, applicable, and relevant indicator. Systematic therapeutic side effect scale result as the item which estimates disturbance caused by loss of hair, while taking into consideration the specificity of our group was not relevant. Average life span of researched patients is 58 years. 71% underwent mastectomy with axillary dissection while 79% underwent radiotherapy protocol, which causes frequent manifestation of medical treatment effects, and significantly affects quality of life.

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