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HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH BREAST CANCER SURGERY AND UNDERGOING CHEMOTHERAPY IN AHMEDNAGAR DISTRICT.

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Conflicts of Interest: Nil

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Abstract:

The purpose of the study was to evaluate health related quality of life in patients who had been followed up after the breast cancer surgery for chemotherapy at our hospital. Quality of life was documented using European Organization of Research and Treatment for Cancer Quality of life Questionnaire-Cancer 30 (EORTC QOL-C30) and European Organization of Research and Treatment for Cancer Quality of life Questionnaire-Breast 23 (EORTC QOL-BR23). After analysis of EORTC QOL-C30 questionnaire, participants had maximum affection of cognitive, social and physical functions and reported high levels of pain, fatigue and insomnia. Domains of EORTC QOL-BR23, the such as worry about self-body image, sexual dysfunction, upset by hair loss, systemic therapy side effects, breast and arm symptom were reported by maximum participants. Various domains of quality of life were maximally affected in patients of breast cancer surgery undergoing chemotherapy. Health care professionals in the field of Oncology should address the above mentioned domains of quality of life in Indian patients with breast cancer surgery undergoing chemotherapy. Comprehensive cancer management plan should include psychological counseling, emotional support, physiotherapy care for pain and other musculoskeletal problems etc. adjunct to medical treatment of patients with breast cancer.

Keywords: Breast cancer surgery, Chemotherapy, Quality of life, QLQ-C30, QLQ-BR23.

Introduction

Many factors such as biological, social and cultural issues are inter-related to overall women health in India.[1].Prevalence of breast cancer is increasing in Indian females. Breast cancer is abnormal collection of mass, which exceeds its growth in uncoordinated fashion than healthy tissues in the breast. Previous literature reported the increasing incidence of breast cancer of around 1.67 million new cancer cases diagnosed in 2012 in the world with an annual incidence of approximately 1, 44,000 new cases of breast cancers in India which can be a major cause of poor quality of life of Indian women. In developed countries, the chances of survival from breast cancer has increased to 85%due presence of advance screening practices, awareness and availability of latest treatment optionsand the survival rate in developing countries remains around only 50-60%(WHO-IARC,2008) [2]. However, breast cancer in India it varies from as low as 5 per 100,000 female populations per year in rural areas to 30 per 100,000 female populations per year in urban areas [3].

Due to increased medical awareness, screening strategies and early diagnosis and appropriate medical treatments for rural as well as urban population reduces mortality in patients with breast cancer which increases survival rate. Medical treatments of surgery, chemotherapy etc. for cancer usually precipitates with serious adverse effects affecting overall quality of life in physical, psychological and social aspects [4].

Indian women frequently report to hospital during various stages of cancer [5] in which time of diagnosis, initial stage of the treatment and at the end of the treatment is the hard time for the patients physically and mentally. Maximum reported cases underwent breast surgery at different stages of cancer. Modified radical mastectomy is a usual choice of option in our clinical set up which is followed by repeated chemotherapy sessions for such patients. During this whole process from diagnosis to ongoing cancer treatment patient's quality of life is impaired significantly. Model of quality of life proposes the objective and subjective indicators of broad range of life domains, and also includes individual values. It takes account of concerns that externally derived

norms should not be applied without reference to individual differences[6]. If there is delay in detection of breast cancer and solving the problems of the patients, this causes prolonged treatment and the increased duration of hospital stay and its cost which can affect the patient compliance and quality of life [7].

Shiela Perry et al. (2007) reported that the implementation of quality of life assessment into clinical practice for breast cancer treatment has a high potential to benefit the patients in western population.[8] However, Fatemeh Homaee Shandiz.et al. (2017) reported the poor quality of life in women having breast cancer. But limited literature is available to describe the quality of life in patients underwent breast surgery undergoing chemotherapy in Indian population. Hence due to early diagnosis of cancer, surgery and continued chemotherapy treatment the patient may land up with associated signs and symptoms which can affect the quality of life in Indian women. Therefore the purpose of this study was to evaluate the health related quality of life in patients operated with breast cancer and undergoing chemotherapy by administrating cancer specific questionnaire- European Organization for Research and Treatment of Cancer Quality of Life BR23 (EORTC QOL-BR23) and breast cancer specific questionnaire - European Organization for Research and Treatment of Cancer Quality of Life C30 (EORTC QOL-C30) in India in rural set up.

Methodology& Materials:

Research setting and study participants:

Approval for this study was sought from Institutional ethical committee of DVVPF'S College of Physiotherapy. This study was performed at Oncology Centre of Vikhe Patil Memorial Hospital, Ahmednagar. A total of fifty patients of age above the age of 20 years, who were followed up for ongoing chemotherapy after breast cancer surgery (modified radical mastectomy) were included in this study. After taking informed and written consent, the two questionnaires were administered to evaluate quality of life. Fifty patients wanted to participate and gave their written consent. However, patients those were not interested to participate and patients undergone radiation therapy or on hormone therapy were excluded from the study.

Demographic characteristics along with medical history data regarding breast cancer were gathered from the medical records of the corresponding participants. The duration of diagnosis of breast cancer, duration of surgery were also noted.

Instruments:

The European Organization of Research and Treatment for Cancer Quality of life-C30 version 3.0 is a cancer specific measure of Health Related Quality Of Life. It consist of 30 items to assess physical, role, emotional, cognitive and social functioning, global health status or Quality of life scales, fatigue, pain, nausea and vomiting, dyspnea, insomnia, appetite loss, constipation, diarrhea, financial difficulties and global ^{health} status/QOL. This scale is reliable and valid as there was acceptable good Cronbach's alpha score of 0.846 for European Organization of Research and Treatment for Cancer Quality of life questionnaire - C30[14].

European Organization of Research and Treatment for Cancer Quality of life -BR23 is a breast-specific module that comprises of 23 questions to assess body image, sexual functioning, sexual enjoyment, future perspective, systemic therapy side effects, breast symptoms, arm symptoms and upset of hair loss. This scale is valid as the Cronbach's alpha score for Quality of life-BR23 was 0.873 with strong internal reliability[14].

Results:

The mean age of participants was 54.02±10.86 yr. Mean duration of breast surgery at which the cancer specific questionnaire was administered was 67.6±20.02 days (i.e. post- operative modified radical mastectomy duration).Mean duration of diagnosed breast cancer was 4.6 ± 1.2 months.

Cancer specific Quality of life questionnaire-C30 had higher scores of pain domain and other domains such as fatigue, cognitive functioning, social functioning, insomnia, physical functioning also had high score(i.e. more than 50). Cancer specific Quality of life questionnaire-C30 the item role functioning and emotional functioning had minimum score and the symptom scale which includes nausea/vomiting, constipation, and diarrhea, had high minimum scores and appetite, dyspnea had minimum scores which was less than 50 percent.

The data acquired from other breast cancer specific scale i.e, Quality of life questionnaire -BR23, the item upset by hair had high maximum score, thereafter items like systemic therapy side effect and body image had maximum score which was more than 50.Thefunctional scale of Quality of life

questionnaire-BR23 the item sexual functioning had zero score and sexual enjoyment was not applicable.

Table 1: Mean scores of the questionnaires

	Variables	Mean ±SD
QOL-C30	**Global health status / QoL**	45.94 ± 12.90
	Functional scales	
	Physical Functioning	55.86 ±3.13
	Role Functioning	35.74 ±21.55
	Emotional Functioning	33.97 ±33.59
	Cognitive Functioning	65.24±34.64
	Social Functioning	58.24 ±12.67
	Symptom Scales / Items	
	Fatigue	64.64 ±29.48
	Nausea and vomiting	11.82 ±15.51
	Pain	73.5 ±23.16
	Dyspnoea	39.78 ±37.62
	Insomnia	56.5 ±41.76
	Appetite loss	24.42 ±26.24
	Constipation	11.22 ±20.46
	Diarrhea	2.64 ±8.95
	Financial difficulties	35.64 ±22.71
	Functional scales	
QOL-BR23	Body image	53.12 ±11.49
	Sexual functioning	0
	Sexual enjoyment	NA
	Future perspective	32.4 ±27.50
	Symptom scales/items	
	Systemic therapy side effects	60.78 ±16.65
	Breast symptoms	45.36 ±18.75
	Arm symptoms	49.5 ±13.06
	Upset by hair loss	76.9 ±17.20

Discussion:

Present study evaluated cancer related quality of life using EORTC-QOL -C30 (European Organization for Research and Treatment of Cancer, Quality of life questionnaire) and breast cancer specific quality of life using EORTC-QOL questionnaire -BR23.

Findings from the symptom scale and global health status of EORTC-QOL- C30 questionnaire demonstrated poor overall health and quality of life due to presence of various symptoms among the participants. Maximum impairment of cognitive, social & physical function was observed in participants undergoing chemotherapy after thesurgerywhich may be due to the various adverse effects of chemotherapy.

Various domains of function and symptom scales of breast cancer specific quality of life - EORTC-QOL questionnaire -BR23 also demonstrateda maximal affection.

On analysis of global health status or quality of life in Indian patients with post-operative breast cancer undergoing chemotherapy had mean scores of 45.94 ± 13.03 i.e less than 50 on likert grading demonstrating poor quality of life.

In our setup, Indian patients with breast cancer surgery undergoing chemotherapy had maximum difficulty (approximately 65%) in concentrating on things like reading newspaper or watching television and in remembering things suggesting impaired cognitive function amongst them. These participants were found to be disturbed socially (by approximately 65%) i.e. they felt that their physical condition or medical treatment interfered with their family life and social activities. In addition, all patients had had trouble in doing strenuous activities and taking long walk and short walk outside of the house, and some patients needed to stay in bed or chair during the day(physical function impaired by 55%). However, role function and emotional function was limited in doing either their work or other daily activities and also limited in pursuing their hobbies or other leisure time activities and the emotional functioning as they felt tense, worried, irritable, and depressed due to their condition.(role functioning was impaired by 35% and emotional was impaired by 33%).

Another component i.e symptom scale of EORTC QOL-C30 questionnaire showed that patients had pain, fatigue; insomnia and it interfere with their

daily activities significantly. Other associated symptoms such asdyspnea, appetite, nausea/vomiting, constipation, diarrhea financial difficulties were present to some extent in such population.

This study assessed breast cancer specific quality of life usingEORTC QOL-BR23questionnairealso includes two component-functional scale and symptom scale. Participants had maximum worry about their body image i.e., patients feels physically less attractive and less feminine and they are even dissatisfied with their body and then therefore, they were worried about their health in future. The item of sexual functioning and had zero score as these patients were not interested in sex and was sexually inactive.

Almost all the patients were significantly upset by hair loss due to ongoing chemotherapy (upset by hair loss affection was by 76%). Most of the patients were having systemic therapy side effect as the patients had symptoms like dry mouth, food and drink tastes different than usual, their eyes was painful, irritated or watery, they had loss of hair, some patients was ill or unwell, some patients had hot flushes and headaches.

One of the important finding of this component was in relation toarm and breast symptoms (arm symptoms was 49% and breast symptoms was 45%). Maximum patients had pain and swelling in their arm, shoulder, hand and breast, they also had difficulty to raise their arm and moving it sideways and even the area of the breast which was affected was oversensitive and had skin problem as the area affected was itchy, dry and flaky.

The present study demonstrated the poor quality of life in terms of various domains as explained above. Similar findings were published by Shafika A Alawadiand Jude U Ohaeriin the year 2009 a study carried out on Kuwaiti women's having breast cancer.

In our study we found that in EORTC Quality of life questionnaire-C30, the component cognitive functioning and social functioning had high scores in accordance with the previous study[12]. However, physical and role functioning they found the lowest score showing maximum affection and our findings showed average affection of these functions[12]. In the same study authors found- future perspective and body image better in Kuwaiti women's in contraction with our findings of maximum affection and worry about body image and Indian patients were not much worried about future perspective as they were not hopeful for better life in their future and thought of having less life expectancy later[12].

Almost similar findings were demonstrated by Qing Chen, Shunping Li et al. in year 2018 in eastern China women with breast cancerusing quality of life questionnaire-C30. They also found lower scores in sexual functioning and sexual enjoyment while in our study we found zero score may be because of the side effects of chemotherapy or in India mostly women's don't like to discuss about their sexual life as it is a private topic and it should not be discussed publicly therefore they must have been selected any random answer [13].

Fatemeh Homaee Shandiz, Fatemeh Zahra Karimi.et al found highest levels for fatigue and insomniain Iranian population with breast cancer similar to our findings. In their study they found symptom such as nausea/vomiting, appetite loss more frequently but our study it was not observed frequently[11].Gokgoz S, Sadikoglu G, Paksoy E .et al in year 2011 in turkey population found highest score for fatigue, financial difficulties, insomnia and pain and for breast cancer specific symptoms it was about hair loss, systemic therapy side effects, arm symptoms and breast symptoms similarly among the symptom scale we found highest score for pain, fatigues and insomnia and for breast cancer specific scale hair loss, systemic therapy side effects, arm symptoms and breast symptoms had high scores but we did not found high scores for financial difficulties as in our they got free schemes for the cancer surgery. Authors found emotional functioning better in such population similar to our results which reflects the same may be because of stable mental status due to acceptance of cancer and its ill effects after its cure [2].

Study Limitations: Limitation of the study was that we were not able to assess the quality of life at various stages of breast cancer individually which can be a future scope of the study and even sample size was small. Another limitation was we considered only patients having breast cancer surgery following only chemotherapy but not other treatments such as radiotherapy and hormone therapy. One of the limitations is that the population taken is only from Ahmednagar district so it may not be applicable for whole Indian population but can be used as the reference data of various quality of life domains in Indian population.

Future scope of the study is that Quality of life-C30 and Quality of life-BR23 needs to be validated for Indian population in Marathi language.

Clinical implication: The advantage of the study is that health care professional will be aware of how much the quality of life of the patients is affected due breast cancer and chemotherapy so that instead of only focusing on improving the health of the patients by treatment they can focus on different domains and help them. They can counsel the patients psychologically and socially and support them emotionally and adding Physiotherapy cares for pain management can also be beneficial and all this can improve the acceptance of the patients towards their disease and help them improving their quality of life.

Conclusions: Negative effect of breast cancer underwent breast surgery and undergoing chemotherapy on various domains of quality of life was noted. The reference data (score values) of each domain of EORTC Quality of life-C30 and Quality of life-BR23 among Indian patients with breast cancer surgery undergoing chemotherapy is presented in this study for future reference.

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