Assessment of quality of life in breast cancer patients at a tertiary care hospital

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ABSTRACT

Objective: Breast cancer is one of the most important cancers among women across the world as well as in India and therefore there is a great need to evaluate Quality of Life (QoL). Hence, we carried out a study that could give us an idea to predict the affecting factors on QoL among women with breast cancer. **Materials and Methods:** The study was carried out in MGM Hospital, which is located at Warangal, Andhra Pradesh, India. We assessed the overall QoL, symptoms of patients affected by breast cancer by using QoL questionnaires such as EORTC QLQ C-30, EORTC QLQ-BR23, on ≤ 2 cycle as Review-I and on ≥ 5 cycles as Review-II. **Results:** In the functional scale of breast cancer patients, physical, role function, future perspective and in symptom scale, fatigue, insomnia, arm symptoms and upset by hair loss were found to be significantly affected ($P < 0.05$). Global Health Status was mainly influenced by physical, social function, body image, future perspective, insomnia, breast and arm symptoms ($P < 0.005$). **Conclusion:** These findings have shown that there exists a strong correlation between the length of treatment and the QoL among breast cancer patients. Future interventions should target each specific aspect of QoL.

INTRODUCTION

Individual perception of life, values, objectives, standards and interests in the framework of culture can be defined as Quality of Life (QoL). As the breast cancer is one of the most important cancers among women, there is a great need to evaluate QoL among women with breast cancer.[1] Even though there are varieties of reasons that can suspect a breast cancer in an early stage, but because of several reasons like lack of awareness, the treatment may be delayed. The exact diagnosis and mode of treatment for breast cancer can be done by biopsy or surgery. The type

of proliferating cell as well as its histological grade is decided by the tissue diagnosis, and by using this information, the prognosis and best treatment modalities are chosen. The irregular follow-up for the treatment is by the emotional stress after diagnosis and low socioeconomic status especially in developing countries like India. Most of the treatment modalities induce fatigue among women which ultimately affect the QoL and disturb the follow-up for treatment. The instrument that used to measure cancer-specific QoL can be related to all stages of the disease.[2,3]

We can analyze the effectiveness of any breast cancer treatment modality by using the QoL scores.[4-7] Along with the cancer-related problems, the long-term survivors mainly face certain issues related to social/emotional support, health habits, spiritual/philosophical view of life and body.[8-11] The European Organisation for Research and Treatment of Cancer (EORTC) Quality of Life Questionnaire QLQ-C30, Breast Cancer module BR23 are widely used

instruments for assessing the Health-Related Quality of Life (HR QoL) of breast cancer patients.[12] Palliative care that aims specifically to improve the QoL of people living with a life-threatening illness like cancer should need first to evaluate the QoL and factors that affect QoL, so that it can be used as a reference for any health care personnel dealing with any type of cancer patients.[13,14] Even though there are several research works available on QoL exploring with different cancer subtypes, a few QoL studies were carried out among breast cancer patients in South India. Therefore, we carried out a study that can give us an idea to predict the affecting factors on QoL among South Indian breast cancer patient population. Information from our study can help to decide about the effect of treatment among breast cancer patients, improving patients' awareness by providing those data regarding the side-effects of such treatment, improving the organizational setup and quality of health care facilities.

MATERIALS AND METHODS

This study was carried out in the Department of Oncology at Mahatma Gandhi Memorial (MGM) Hospital, a government tertiary care teaching hospital located at Warangal, Andhra Pradesh, India. The hospital is well known for its services to poor people who come from various rural areas of this state. Present study was approved by the Human Ethics Committee of Kakatiya Medical College/Hospital. We recruited those breast cancer patients, whose age was greater than 19 years, receiving chemotherapy or radiotherapy and we excluded those patients who were ambulatory and terminally ill. Before data collection, patients were informed about the study using patient information form, and the written consents were obtained from the patients or their caregivers. In this study we recruited cancer patients attending the outpatient unit of the Department of Oncology at the study site from March 2011 to August 2011. Patient demographics like age, height, weight and medical histories including drug allergies were entered in the specially designed data entry form. The EORTC QoL Questionnaires like QLQ-C30, known as core questionnaire and QLQ-BR23, known as breast cancer module were administered to the patients on initial chemotherapeutic cycles (≤2 cycles) and the scores were recorded as Review-I, followed by Review-II on final chemotherapeutic cycles while they were undergoing ≥5 cycle treatment.

Statistical analysis
The obtained data such as patient's family and medical histories were thoroughly analyzed for categorization.

As the patients were studied in the context of Review-I and Review-II, the observed values were compared with each other in order to determine the direction and magnitude of difference between values of two reviews by using non-parametric test, Wilcoxon Signed Rank Test. In order to measure the correlation that exists between the global health status and the individual scales of QoL, Spearman's Correlation Test was used. The values for $P < 0.05$ were considered statistically significant.

RESULTS

The total number of breast cancer patients included during the study period based on their inclusion/exclusion criteria was found to be 41. In order to find out the prevalence of breast cancer among different age groups, the patient population was split according to their age. The age categorization of the study population is given in Table 1.

The mean age of study population was found to be 46.1 ± 11.2 years. Characteristics of the study population are given in Table 2.

The study population was subjected to various laboratory investigations. The results of reason for admission revealed that 36.53% had nipple discharge. In the study population, 5.76% suffered with diabetes and hypertension, 2.88% suffered with diabetes and 7.69% with hypertension. In combination doxorubicin, vincristine and cyclophosphamide were the most commonly prescribed drugs for these patients. Among overall study population, 32.69% of patients were treated with surgery and supported by chemotherapy.

The individual Qualities of Lives among the breast cancer patients were assessed and the obtained values were subjected to statistical analyses. Wilcoxon analysis revealed that in functional scale, physical, role function and in the extended functional scale using EORTC QLQ-BR23, future perspective were found to be significant ($P < 0.05$) and in symptom scale, fatigue, insomnia, arm symptoms and upset by hair loss were found to be significant ($P < 0.05$). The non-parametric

Table 1: Age distribution of the study population	
Age group in years	Patients % (*n*)
Young adult (19-35)	14.42 (15)
Adult (36-50)	8.65 (9)
Old adult (51-64)	8.65 (9)
Young older (65-74)	7.69 (8)
Old (75-84)	0

Table 2: Characteristics of the study population

Characteristics	Number of patients (N=41)	n %
Marital status		
Married	28	68.29
Divorced/Widowed	12	29.26
Unmarried	1	2.43
Occupation		
Farmers	6	14.63
Daily wage	0	0
Labor	4	9.75
House wives	31	75.60
Habitat		
Rural	31	75.60
Urban	10	24.39
Body mass index		
Underweight	09	21.95
Normal weight	29	70.73
Overweight	2	4.87
Obese	1	2.43
Mean BMI	22.045	(SD: 2.43)
Food habits		
Vegetarians	2	4.87
Non-Vegetarians	39	95.12
Education		
Illiterate	23	56.09
Primary school	14	34.14
Secondary/high school	4	9.75
Higher	0	0
Mode of treatment		
Single	19	46.34
Combination	22	53.65
Menopausal status		
Pre-menopausal	17	41.46
Post-menopausal	20	48.78
Unknown	4	9.75
Co-morbidity		
Yes	16	39.02
No	25	60.97
Cohabitants		
Living alone	8	19.51
Living with partner	23	56.09
Living with others (children and relatives)	10	24.39

Table 3: Spearman's correlation test EORTC-QLQ-C30 and BR23

Domain	Review–I	Review–II	P value
EORTC QLQ-C30 global health status			
Global health status/QoL	58.24±21.69	47.75±18.77	0.593
EORTC QLQ-C30 functional scales			
Physical function	64.30±24.33	51.62±12.65	0.008*
Role function	67.88±10.67	56.01±19.80	0.005*
Emotional function	71.13±12.13	62.80±24.77	1.19
Cognitive function	80.89±16.66	69.91±19.97	0.842
Social function	68.69±14.24	58.95±15.78	0.512
EORTC QLQ-C30 symptom scales			
Fatigue	44.35±16.56	56.19±23.53	0.017*
Nausea and vomiting	34.58±18.49	43.89±21.01	0.593
Pain	31.70±27.73	40.64±27.66	0.585
Dyspnea	18.29±16.87	52.84±19.05	0.214
Insomnia	41.46±12.93	51.62±12.65	0.04*
Appetite loss	21.13±17.29	35.77±18.48	0.981
Constipation	4.87±14.61	15.85±29.23	1
Diarrhea	5.69±0	15.03±9.24	0.16
Financial problems	31.54±31.80	37.64±36.39	0.774
EORTC QLQ-C30 and BR23 functional scales			
Body image	67.06±12.90	62.80±10.87	0.38
Sexual functions	96.74±19.74	87.39±22.95	0.495
Sexual enjoyment	99.18±9.24	91.05±19.88	0.842
Future perspective	48.93±24.63	42.83±24.38	0.013*
EORTC QLQ-C30 and BR23 symptom scales			
Systemic therapy side effects	31.42±13.02	37.50±13.64	1
Breast symptoms	18.61±9.98	27.15±14.62	0.483
Arm symptoms	34.39±13.21	42.61±15.74	0.017*
Upset by hair loss	43.89±16.01	55.68±21.68	0.042*

*Statistically significant (*P*<0.05). EORTC=European organisation for research and treatment of cancer

test, Spearman's Correlation analysis revealed that the global health status when paired with physical, social function, body image, future perspective in functional scale, insomnia, breast symptoms and arm symptoms in symptom scale were found to be highly significant (*P* < 0.005). It is shown in Tables 3 and 4.

DISCUSSION

Quality of Life (QoL) refers to "global well-being", including physical, emotional, mental, social, and behavioral components of life. Recently a number of valid tools have become available to measure health-related QoL.[1] By using EORTC QLQ-C30 and BR23, the current study assessed the QoL in breast cancer patients undergoing various treatment modalities. Several studies also support these findings on the influence of treatment on QoL among the breast cancer patients. For example, Hurny C *et al.*, have shown that chemotherapy had a measurable adverse effect on QoL in women with node-positive operable breast cancer.[15] The results from this current study indicated that disease burden deteriorating the QoL. Rustoen and Holzner in two separate studies found QoL getting deteriorated with time.[16,17]

Past studies in our study site have shown that the incidence of breast cancer is more predominant among women.[18] The age distribution indicated

Table 4: Spearman's correlation test EORTC QLQ-C30 and BR23

Variable pairs	Spearman's Rho (rs)	P value
EORTC QLQ-C30 functional scales		
GHS/QoL status with physical function	0.62	0.003***
GHS/QoL status with role function	−0.20	0.36
GHS/QoL status with emotional function	−0.29	0.17
GHS/QoL status with cognitive function	−0.35	0.10
GHS/QoL status with social function	0.00	0.00***
EORTC QLQ-C30 symptom scales		
GHS/QoL status with fatigue	0.29	0.17
GHS/QoL status with nausea and vomiting	−0.32	0.13
GHS/QoL status with pain	−0.18	0.40
GHS/QoL status with dyspnea	0.06	0.79
GHS/QoL status with insomnia	−0.83	0.00***
GHS/QoL status with appetite loss	−0.11	0.62
GHS/QoL status with constipation	−0.24	0.26
GHS/QoL status with diarrhea	−0.18	0.43
GHS/QoL status with financial problems	0.20	0.40
EORTC QLQ-C30 and BR23 breast cancer module functional scales		
GHS/QoL status with body image	0.67	0.00***
GHS/QoL status with sexual functions	−0.20	0.40
GHS/QoL status with sexual enjoyment	0.16	0.48
GHS/QoL status with future perspective	0.62	0.003***
EORTC QLQ-C30 and BR23 symptom scales		
GHS/QoL status with systemic therapy side effects	0.03	0.89
GHS/QoL status with breast symptoms	0.00	0.00***
GHS/QoL status with arm symptoms	−0.64	0.002***
GHS/QoL status with upset by hair loss	−0.07	0.78

***Highly significant (*P*<0.005), EORTC=European organisation for research and treatment of cancer

that the adult and elderly people were commonly getting affected. The similar findings reported by other literature.[19] Habitat is one of the contributing factors for breast cancer incidence. Our study found that most of the patients (75.60%) were having rural background since the rural population is more in this area. Among all the patients only 43.89% were literate. This shows the illiteracy rate in the patient group. According to some researchers,[20] performance of marital role or duties, relationship with spouse, looking after the family are important regarding the QoL for Indian cancer patients. We found that 29.26% of our study population were divorced and/or separated. Of the total population, 48.78% were in post-menopausal state. Occupationally most of the patients were housewives and they were 75.60% of the total patient population. The reasons behind may be uncertain. Body mass index of the patients was calculated and found that 70.73% were having normal weight and 21.95% of the patients were underweight.

As the cancer treatment may deteriorate the weight of the patients, there was an increase in the number of underweight patients thereby reducing their QoL. Main reasons for admissions included nipple discharge in breast (46.53%). This shows the need for causing awareness about signs and symptoms for early detection of cancers among common public. Hypertension (7.69%) was found as a major co-morbidity, followed by diabetes (2.88%), and both of them were found in 5.76%. The co-morbidities were very well treated with respective drugs.

In the early phase after initial treatment (≤2 cycles), patients had a good QoL in many areas. This is especially true for the functional scales. Similar observations were also made by Dow *et al.*[21] Restrictions in the social domain might be due to illness-related changes in social roles. The majority of the women were housewives having been responsible for the organization of households. Impairments reported in role functioning might be similarly explained, in that support initially offered in occupational and household activities may tend to disappear with time. The "rebound effect" observed in this study (a recurring reduction of QoL after initial improvement) was most pronounced, as mentioned earlier, in the areas of emotional functioning, role functioning, social well-being and sexual life. A study by Ganz *et al.*[10] reported similar results, indicating that a whole series of psychosocial and sexual problems not only continue to plague breast cancer patients, but might also worsen with time. In the functional scale of breast cancer patients, physical, role function and the extended functional scale using EORTC QLQ-BR23 questionnaire, future perspective were found to be significant and in symptom scale, fatigue, insomnia, arm symptoms and upset by hair loss were also found to be significant. Similar observations were found by previous studies among breast cancer patients.[22,23] As these findings are similar to the existing studies, there will be a dramatic improvement in the QoL among this patient group by improving these issues. By using this data the health care professionals can consider these aspects among breast cancer patients in their routine health care program. The scores were also analysed with the non-parametric test of correlation. Spearman's correlation analysis revealed that the global health status when paired with physical, social function and body image, future perspective, insomnia, breast symptoms and arm symptoms were found to be highly significant. Most of these findings are similar to the past studies in the breast cancer

patients.[23-25] These findings are showing that the QoL was mostly influenced by the above-mentioned breast cancer-specific as well as women-specific factors and have some interesting implications for management and treatment of breast cancer.

CONCLUSION

In the functional scale of breast cancer patients, physical, role function, future perspective and in symptom scale, fatigue, insomnia, arm symptoms and upset by hair loss were significantly affected. Global health status was mainly influenced by physical, social function, body image, future perspective, insomnia and breast and arm symptoms. From these results we can conclude that there exists a strong correlation between the length of treatment and the QoL. These findings are showing that the health care professionals need to understand these differences in the treatment. Even though it is not always possible to consider the individual perception of patients regarding their personal life, a simple consideration of these is very important to the patients and their QoL. A weakness of our analysis is that it may not include the statistical correlations of sociodemographic factors. There are a multiple reasons for and consequences of less QoL in these breast cancer patient population, and future interventions should target each specific aspect of QoL.

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