Journal of
Cancer Science & Therapy

Alzabaidey, J Cancer Sci Ther 2012, 4.3
DOI: 10.4172/1948-5956.1000110

Case Report Open Access

Quality of Life Assessment for Patients with Breast Cancer Receiving Adjuvant Therapy

Fakhriya Jaber Alzabaidey*

University of Al-Zarqa, Zarqa, Jordan

Abstract

Breast cancer is the most common cancer among women and the second leading cause of the cancer death. It may cause physical, psychological disorders and it may damage the body image. As well as, it is of great importance to estimate the risk and demand patient to seek specialist's opinion, after making a diagnosis and before starting treatment.

This study aimed to asses the adjuvant therapy on quality of life in (100) patients with breast cancer. The patients were divided into two groups those who had mastectomy with chemotherapy and other group with mastectomy receiving radiation therapy.

The questionnaires were developed on the basis of other previous studies and previous researchers experiences; it was design and filled by the researchers through interview technique. They were tested for validity and reliability.

This study revealed that the quality of life (QOL) of both groups were impaired but there were no significant differences between the two groups regarding the psychosocial wellbeing domain, while regarding the other two domains the physical complains and the daily activities, There were significantly differences between them P = 0.002 for the physical complains and P = 0.004 for the daily activities domain. Most of them were unable to having fun, they didn't have normal life, and in addition, the highest percentages were worried about their future and both groups were not satisfying about their lives. The researchers recommended further researches about the relationships between the socio-demographic variables and the quality of life for patients receiving adjutants' therapy.

Keywords: Adjuvant therapy; Quality of life; Patients with breast cancer

Introduction

Breast cancer is a disease in which malignant (cancer) cells form in the tissues of the breast. It is considered a heterogeneous disease differing by individual, age group, and even the kind of cells within the tumors themselves. Obviously, no woman wants to receive this diagnosis, but hearing the words "breast cancer" does not always mean an end to their life. It can be the beginning of learning how to fight; getting the facts and finding hope [1,2].

Breast cancer is the most common cause of cancer-related deaths among women worldwide. It accounts for 31% of cancers among women, and 19% of deaths among women are due to cancer [3]. Epidemiological data showed that one in 8 women in the United States of America meanwhile, one in 10 women in Europe will develop breast cancer at some time during their lives. There is marked geographical variation in incidence rates, being highest in the developed world and lowest in the developing countries in Asia, Middle East, and Africa [3-5]. Patients with cancer are exposed to different types of stress and the length of survival depends on disease, free interval changes related to the size of tumor and its metastasis, and toxicity of treatment in addition, the value of cancer treatment is judged not only on survival but on quality of that survival. The quality of life analysis evaluates the result of treatment from different points of view. This evaluation consists of social, physical, functional and psychological status of health interpreted by the patient [5-7].

Many authors [8-11] mentioned that quality of life included: physical functioning, social interaction, psycho-emotional wellbeing and disease or treatment related symptoms. Its important to be concerned about the quality of patients life with cancer because cancer is considered a mind / body illness with emotional issue affecting physical states and vice versa [10-12]. According to World Health Organization (WHO), quality of life (QOL) is defined as individual perception of life, values, objectives, standards, and interests in the framework of culture [12-14].

Chemotherapy and radiotherapy can be an integral component of the adjuvant management strategy for women with early-stage breast cancer. A modern adjuvant strategy now comprises one or more chemotherapy agents, hormonal maneuvers, immunotherapy agents, or experimental agents. The use of adjuvant chemotherapy is generally based on estimates of an individual's risk of recurrence and the expected benefit of therapy, in addition to the psychosocial issues and physical disorders that may be caused by these type of treatments [15-17].

The majority of past researches were conducted either North America or North European countries, which has implications on conclusions drawn on wider international countries. Even though the

***Corresponding author:** Fakhriya Jaber Alzabaidey, University of Al-Zarqa, Zarqa, Jordan, Tel: 0096277925260; E-mail: iftekharmajeed@yahoo.com

Received October 07, 2011; **Accepted** March 24, 2012; **Published** March 26, 2012

Citation: Alzabaidey FJ (2012) Quality of Life Assessment for Patients with Breast Cancer Receiving Adjuvant Therapy. J Cancer Sci Ther 4: 051-055. doi:10.4172/1948-5956.1000110

case findings in one country are used to support health care practice in other countries, however it is possible that differences in cultural, regulations, social conditions and differences in practice make it difficult to generalize the finings of the studies to other eastern populations.

Little is known about the impact of adjuvant therapy on the quality of life of patients with breast cancer in Iraq. The aim of this study was to evaluate or to assess the impact of adjuvant therapy on quality of life in patients with breast cancer, and to find out the differences in the quality of life between patients receiving chemotherapy and radiation therapy.

Materials and Methods

Design of the study

The investigators carried out a descriptive study from mid of March 2010 through mid of December 2010. A purposive sample of (100) patients were selected, they were divided in two groups (50) Patients who were taking chemotherapy and (50) patients were receiving radiation therapy with the following criteria:

1. Patient diagnosed with breast cancer.
2. Patients with mastectomy receiving chemotherapy and patients with mastectomy receiving radiation therapy.
3. Patients free from chronic disease such as heart disease or diabetes mellitus and had no physical deformity and not being treated for psychiatric conditions.
4. Patients having the treatment for more than six months to allow sometime for adjustment.

Data collection

Interview technique was used as method to gather data, with the aid of nurses the questionnaires were filled out during patient's interview, all the patients were selected from outpatients Nuclear Medicine hospital in Iraq, a formal consent was obtained and all of them agreed to participate in this study.

Tools

Assessment tool was adopted from previous studies and literatures [18-20] and the researchers experience, a number of questionnaires can be used to assess quality of life. These questionnaires were modified because we think it accommodate best to the social culture status of Iraqi women. They were used to measure the three domains of quality of life namely, the physical complains, the daily activities and psychological wellbeing.

In order to determine the validity of the questionnaires, they were reviewed by 20 experts most of them agreed about the items concerning the quality of life.

Test retest reliability was ($r > 0.85$ and internal consistency reliability $r = 0.75$. Answers to the questioners to each item were given on 3 point scale never, sometime, always. For each scale the score was calculated as the mean of response to the items.

Statistical analysis was performed using the Statistical Package for the social sciences (SPSS, 1997) version 11.5.A descriptive statistics were used to characterize the sample with regard to socio-demographic characteristics, in addition the mean, standard deviation and t test was used to compare between the two groups and for data analysis.

The reliability was tested using Cronbachs alpha reliability coefficient. For comparison between the two groups the t test was used ($P < 0.05$) was considered to be significant.

Results

The socio-demographic information of the patients represented in Table 1, the majority of the patients age was between (38-47) years old (36%) for CT patients, and (34%) for RT with a mean and standard deviation of age was (49.5 ± 9.949) for CT patients, and M ± SD for RT was (48.3 ± 10.515). Most of the patients were married (60%) in CT group and (70%) in RT., primary school graduates (40%) in CT and (36%) in RT, and housewife were (60%) in CT and (76%) in RT.

Breast cancer at stage III was the most common cancer accounting for (46%) in CT and (44%) for RT patients as shown in Table 2.

There was a significant differences at ($\alpha = 0.05$), and ($P = 0.001$) in QOL regarding the physical functioning between the two groups (Table 3). The RT patients had bad mean for this domain (1.43 ± 0.4792), while the CT patients had better mean for the same domain (2.09 ± 0.5994). In addition, the most common problems in regards to physical problems were anorexia (80%) in patients taking chemotherapy, and

Characteristics	Chemotherapy patients		Radiation therapy patients	
	Frequency	Percentage	Frequency	Percentage
Age:				
18- 27	1	2	1	2
28- 37	3	6	6	12
38- 47	18	36	17	34
48- 57	17	34	16	32
58- 67	10	20	9	18
> 67	1	2	1	2
Total	50	100	50	100
M ± SD	49.5 ± 9.949		48.3 ± 10.515	
Marital status:				
Single	11	22	10	20
Married	30	60	35	70
Divorce	4	8	2	4
Widow	5	10	3	6
Total	50	100	50	100
Level of education:				
Cannot read and write	5	10	8	16
Read and write	19	38	15	30
Primary school	20	40	18	36
Secondary school	5	10	7	14
College	1	2	2	4
Total	50	100	50	100
Occupation:				
Employee	10	20	8	16
Student	1	2	1	2
Housewife	30	60	38	76
Retired	9	18	3	6
Total	50	100	50	100

Table 1: Socio-demographic characteristics of the sample.

Adjuvant therapy	Stages		Total
	Stage II	Stage III	
Radiation therapy group	4	46	50
Chemotherapy group	6	44	50

Stage II some spreading to surrounding tissues: stage III involves metastasis to distant lymph nodes.

Table 2: Stages of the disease.

(32%) for patients receiving radiation therapy. Moreover, most of the patients complained from fatigue (66%) in patients receiving CT, and (24%) in patients taking RT.

In regarding the daily activities domain (Table 4), the chemotherapy patients had bad QOL the mean total QOL was (1.68 ± 0.5029), however, there was a statically differences between the two groups P = 0.004, the most common problems in regard to this domain were not able to having fun (86%), and not able to work (70%) in CT patients while, in RT patients were (76%) and (40%).

Table 5 shows the psychological wellbeing domain, there was no statistical differences between the two groups P = 0.621, the mean for total QOL regarding this domain were relatively similar (2.09 ± 3262) for chemotherapy patients, and (2.11 ± 0.4786) for radiation therapy patients. The most common complains regarding this category: were both groups were not satisfying in their lives (92%) for RT and (80%) in RT, the two groups were worried about their future (92%) in CT, and (80%) in RT patients. In addition, they were concerned and worried about their appearance. The highest percentage was in CT (84%) but slightly differ in RT patients (72%).

Discussion

Various factors such as mutilation of the body, problems due to adjuvant therapies, worries and anxiety about the disease, and fear of death interferes with Quality of life in patients with breast cancer. QOL has been used as an endpoint for comparison of treatments in many types of cancer [9,10]. It is considered an early indicator of disease progression which could help the physicians and nurses in daily practice to closely monitor the patients [21].

Signs	Chemotherapy patients			Radiation therapy patients			Significant test
	Non %	Moderate %	Severe %	Non %	Moderate %	Severe %	T value & P value
Pain	48	20	32	50	36	14	
M ± SD	1.64 ± 0.7217			1.64 ± 0.7217			T = 1.236 P = 0.118
Nausea	12	24	64	56	32	12	
M ± SD	1.64 ± 0.7217			1.56 ± 0.7045			T = 6.799 P = 0.000*
Vomiting	20	16	64	92	8	0	
M ± SD	1.08 ± 0.2740			1.08 ± 0.2740			T = 11.221 P = 0.000*
Anorexia	4	16	80	52	16	32	
M ± SD	1.80 ± 0.9035			1.80 ± 0.9035			T = 6.522 P = 0.001*
Diarrhea	16	24	60	84	12	4	
M ± SD	1.20 ± 0.4949			1.20 ± 0.4949			T = 9.672 P = 0.000*
Constipation	72	8	20	82	8	10	
M ± SD	1.28 ± 0.6402			1.28 ± 0.6402			T = 1.366 P = 0.076
Mouth sores	60	24	16	78	22	0	
M ± SD	1.20 ± 0.4949			1.20 ± 0.4949			T = 2.769 P = 0.004*
Fatigue	10	24	66	44	28	24	
M ± SD	1.80 ± 0.8081			1.80 ± 0.8081			T = 5.108 P = 0.002*
U.T.I.	84	16	0	88	12	0	
M ± SD	1.12 ± 0.3283			1.12 ± 0.3283			T = 0.571 P = 0.349
Alopecia	18	44	20	90	10	0	
M ± SD	1.10 ± 0.3030			1.10 ± 0.3030			T = 9.000 P = 0.000*
Loss of sexual desire	36	44	20	88	12	0	
M ± SD	1.12 ± 0.3283			1.12 ± 0.3283			T = 6.305 P = 0.001*
Headache	16	22	62	20	36	44	
M ± SD	2.24 ± 0.7709			2.24 ± 0.7709			T = 1.436 P = 0.068
Total M ± SD	1.43 ± 0.4792			1.43 ± 0.4792			T = 6.077 P = 0.001*

*Statistically significant

Table 3: The physical complains of patients receiving chemotherapy and the radiotherapy patients, the percentage, the mean, standards deviation and t test.

Activities	Chemotherapy patients			Radiation therapy patients			Significant test
	Non %	Moderate %	Severe %	Non %	Moderate %	Severe %	T value & P value
Able to work	70	24	6	40	16	44	
M ± SD	1.52 ± 0.8142			2.04 ± 0.9249			T = 2.985 P = 0.003*
Able to eat	0	16	84	0	4	96	
M ± SD	2.84 ± 0.3703			2.96 ± 0.1979			T = 2.020 P = 0.007*
Able to having fun	6	14	0	76	14	10	
M ± SD	1.06 ± 0.2399			1.34 ± 0.6581			T = 2.828 P = 0.004*
Able to communicate	76	8	16	56	24	20	
M ± SD	1.40 ± 0.7559			1.64 ± 0.8020			T = 1.540 P = 0.062
Able to sleep	60	24	16	40	16	44	
M ± SD	1.56 ± 0.7602			2.04 ± 0.9249			T=2.834 P=0.004*
Total M ± SD	1.68 ± 5029			2.00 ± .6161			T=2.847 P=0.004 *

*Statistically significant

Table 4: The daily activities for patients receiving chemotherapy and radiotherapy, the percentage, the mean, standards deviation and t test.

Activities	Chemotherapy patients			Radiation therapy patients			Significant test
	Non %	Moderate %	Severe %	Non %	Moderate %	Severe %	T value & P value
Is your life satisfying	92	6	2	80	16	4	
M ± SD	1.10 ± 0.3642			1.24 ± 0.5175			T = 1.566 P = 0.061
Do you feel useful	84	16	0	72	24	4	
M ± SD	1.16 ± 0.3703			1.32 ± 0.5511			T = 1.706 P = 0.058
Do you worry about the cost of medical care	0	16	84	8	22	70	
M ± SD	2.84 ± 0.3703			2.62 ± 0.6354			T = 2.115 P = 0.006*
Do you worry about the future	4	4	92	0	20	80	
M ± SD	2.88 ± 0.4352			2.80 ± 0.4041			T = 0.955 P = 0.276
Do you have normal life	92	8	0	80	16	44	
M ± SD	1.08 ± 0.2740			1.24 ± 0.5175			T = 1.932 P = 0.057
Do you feel you are dependent	80	12	8	4	24	72	
M ± SD	2.72 ± 0.6074			2/68 ± 0.5511			T = 0.345 P = 0.517
Do you able to concentrate	76	8	16	48	20	32	
M ± SD	1.40 ± 0.7559			1.84 ± 0.8889			T = 2.667 P = 0.005*
Are you like to be alone	84	12	4	12	16	72	
M ± SD	2.80 ± 0.4949			2.60 ± 0.6999			T = 1.650 P = 0.061
Are you worried about your appearance	84	12	4	8	20	72	
M ± SD	2.80 ± 0.4949			2.64 ± 0.6312			T = 1.411 P = 0.069
Total M ± SD	2.09 ± 0.3362			2.11 ± 0.4786			T = 0.242 P = 0.621

*Statistically significant

Table 5: The psychosocial well-being domain for patients receiving chemotherapy and the radiotherapy patients, the percentage, the mean, standards deviation and t test..

QOL can be the indicators for the effect of the illness and its treatments as perceived by the patients and is modified by factors such as physical impairments, functional stress, perception and social opportunities [22,23].

In this study the CT had medium impairment of QOL in regarding the physical problems, while the RT had bad effects on patients QOL. Most of CT patients complained from anorexia (80%) and nausea (64%) while, in RT patients (12%) were complained from nausea and (32%) from anorexia. Mild nausea may lead to loss of appetite and moderate to sever nausea usually causes some degree of vomiting

which appear high in CT patients only. Appetite change may occur in all the breast cancer treatments with chemotherapy [19,20]. However, in regarding the daily activities domain the CT patients had bad QOL and medium QOL for RT patients. The reason for this finding could be due to disruption in every day lives resulting from toxicity of the therapy.

Arora et al. [24] studied 103 patients receiving adjuvant therapy, they stated that the QOL is especially low in regarding the daily activities domain and cancer had bad effects on life what ever its origin or type.

Regarding the psychological wellbeing domain (Table 5), shows that both groups were not satisfying in their lives, this could be due to various problem facing them, in addition most of the patients in this study were concerned and worried about their future (84%), and their appearance which represents (74%) in CT patients. These findings are supported by the other work carried out by Dehkordi et al. [25] they studied 200 patients receiving CT they found that (29%) of the sample had fear about their future and (26.5%) thinking about the disease and their consequences. Cancer treatments, especially chemotherapy create change in female body that may have an effect on emotional relations and psychological status, in addition to alteration in body image.

Newell [26] mentioned that mutilation caused by mastectomy makes women feel great emotional distress, chemotherapy and radiation therapy lead to depression and anxiety. Moreover, bad reaction about losing hair and change in appearance could be a source of physical and psycho-social difficulties. In conclusion, methodological problems were common in studying psychological and psychosocial aspects of breast cancer.

Conclusion

This study revealed that the means and standard deviations regarding patient's ages in both groups were slightly different, more than half of the patients were married, and housewives.

The quality of life of those patients were greatly impaired, The majority of both groups were complaining from anorexia, nausea and vomiting, but these disorders were more common in chemotherapy group, the main problem related to daily activity in RT patients was the ability to have fun, both groups were not satisfying in their lives, and the majority of them were concerned with their future. This study gives similar medium deterioration in both groups regarding the psychological well being domain. This can be minimize by effective psychological and emotional counseling and pharmaceutical to assist with the physiological issues. The researchers concluded that breast cancer and its treatment sequelae are associated with significant changes in quality of life and well-being.

The study suggests that health professionals should increase their awareness of existential aspects connected with the will to live, and assist women and their families in developing coping strategies. Moreover, establishment of cancer society center in Iraq can help those patients in coping with their illness.

The researchers recommended further researches with a large sample about the relationships between the socio-demographic variables and QOL.

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