

Factors Affecting Quality of Life among Cancer Patients with Chemotherapy at Qena University Hospital in Upper Egypt

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Abstract: Cancer is one of the leading causes of morbidity and mortality worldwide. Several detrimental symptoms experienced by cancer patients due to disease and treatment adversely affect their quality of life.

Objectives: To evaluate factors affecting the quality of life (QOL) among cancer patients with solid tumors and at different chemotherapy (CT) cycles

Methods: A total of 205 cancer patients were included. With some modification, the European Organization for Research and Treatment of Cancer (QoL) Questionnaire (EORTC QLQ-C30) was used to measure QoL in the student patients.

Results: There was no correlation between the QoL and variables such as age, sex, marital status, duration of disease, economic conditions, and occupational function. Furthermore, no correlation was found between QoL and the patients' educational level (literate or illiterate). Nevertheless, a significant difference was found between the level of QoL in patients with ≤ 2 CT cycles and/or with 3-5 cycles ($p < 0.001$).

Conclusion: This study suggests that encouraging cancer patients to complete a CT course plays an important role in the treatment outcome and the (Q o L) in cancer patients undergoing CT.

Keywords: Cancer patients, Chemotherapy, Quality of life

I. Introduction

Cancer patients face some psychological problems - stress, anxiety, depression; some physiological side-effects - hair loss, pain, tiredness, nausea, vomiting; some social side-effects - social isolation, role and function loss; and, eventually, a worsened quality of life Sema et al., (2015) \$ Lara T et al.,(2015).

Chemotherapy (chemo) is treatment with drugs to destroy cancer cells. Systemic (whole body) chemotherapy uses anti-cancer drugs that are injected into a vein or given by mouth. These drugs enter the bloodstream and reach all areas of the body, making this treatment potentially useful for cancers that have spread to distant organs Fedewa SA.,(2015). During chemotherapy you may have no side effects or just a few. The kinds of side effects you have depend on the type and dose of chemotherapy you get. Side effects vary, but common ones are nausea, vomiting, tiredness, pain and hair loss. Healthy cells usually recover after chemotherapy, so most side effects gradually go away. Radha.,(2015).

Cancer patients demand information to understand chemotherapy-related adverse effects and actions to be taken. Provision of sufficient pre-chemotherapy information including side effects and self-care strategies was proven to reduce certain treatment-related concerns , physical and psychosocial outcomes Aranda et al.,(2012). According to a local survey, possible side effects, their management, and prevention were ranked as the most important treatment-related informational needs besides rationale of treatment and how it would work against cancer. However, there is always a gap between patients' actual needs and information provided by healthcare professionals Lei at al., (2011). Cancer is a major public health problem in developed and developing countries, deserving increasingly more research in order to promote better quality and humanization of care to patients with this disease. It is estimated that by 2020, the number of new cases per year will be nearly 15 million, of which about 60% occur in developing countries.

Worldwide, more than 12 million individuals have newly diagnosed with cancer annually (Torpy et al., 2010). Of 8.2 million cancer deaths in 2012, 65% occurred in less developed regions. The most prevalent cancers were lung (13.0%), breast (11.9%) and colorectum (9.7%) (IARC, 2012). Increases in cancer prevalence have been leading to the ever-improving treatment modalities. On top of surgery and radiotherapy, the use of chemotherapy as well as targeted therapy has increased along with the availability of supportive treatment for its side effect management Dohler et al., (2011). Generally, physical side effects caused by chemotherapy have been well-characterized Sun et al., (2005); Arslan et al., (2013). Among the most common chemotherapy-induced side effects are bone marrow suppression, neuropathies, gastrointestinal disorders. hair loss, fatigue and skin disorders. Some drug-specific side effects have also been identified. For examples, anthracyclines and bleomycin are associated with cardiotoxicity and pulmonary toxicity, respectively Ismail et al., (2011). The most frequent are the following cancers :nonmelanoma skin, prostate, lung, colon, rectum and stomach for the

male sex; and for the female sex: nonmelanoma skin, breast, uterine cervical, colon, rectum and thyroid glandule Ministério.,(2011). The objective of the treatment of cancer is the cure, to prolong life when there is no cure and to provide palliative care. When the treatment does not result in the cure, it must lead to an improvement of the welfare and the quality of life Saevarsdottir T.,(2010).Quality of life is the effect of patients' physical (movement, physical activities and ability to succeed in work and in family responsibilities), social (social activities, being beneficial, body image, anxiety and depression) and psychological (life satisfaction, social support need and role function) for well-being. Symptoms of disease and therapy are pain, respiration difficulty, nausea, alopecia, impotence and, of course, side-effects of the same Rodrigues AM.(2012). Many factors affect quality of life positively or negatively. Tiredness, anxiety, concern for the future and the family, difficulties to meet basic demands and changes in body image worsen the quality of life of cancer patients. [3],[5] Social support, economic security and faith in recovery improve the quality of life. Eom CS.,(2013), Miller RC et al.,(2010), Timperi AV et al.,(2013).

The aim of this study is to evaluate the QoL among cancer patients with solid tumors at different chemotherapy cycles. QoL has become an important endpoint for treatments comparison in randomized controlled trials so that in these patients clinical studies increasingly incorporate QoL as the endpoint. The main problems facing long-term cancer survivors are related to social/emotional support, health habits, spiritual/philosophical view of life, and body image concerns Casso D, Kornblith AB,(2004),(2003).

Many studies have shown good or adequate overall QoL in these cancer patients. However, among long-term survivors, psychosocial issues and physical symptoms such as pain and lymphedema, particularly the adverse effects of systemic adjuvant therapy (chemotherapy) on QoL still persist Bower JE(2006)., The aim of this study is to evaluate the QoL in cancer patients with solid tumors at different chemotherapy cycles. The technological advancement, in the scope of medical science, has provided a greater optimism in the treatment of cancer and an increase in the rate of surviving patients; therefore, it is necessary to evaluate the quality of life of these patients, while this is an important indicator of welfare Silva CB et al., (2010). An optimum level and high quality of care for patients with different types of cancer treated for cancer in Qena city could be achieved by frequent and regular measurement of the quality of their life. This study, therefore, was conducted to evaluate the QoL in its several domains, physical, social, emotional and functional well-being among certain prevalent types of cancer in Qena city

Objectives: To evaluate factors affecting the quality of life (QOL) among cancer patients with solid tumors and at different chemotherapy (CT) cycles.

II. Methods

A total of (205)cancer patients were included in this present analysis. The study was conducted in Qena university hospital. Before taking part in the study, A descriptive study was conducted using structured questionnaire amongst 205 in Cancer Patients with Chemotherapy at Qena University Hospital in Upper Egypt from the first of March (2016) to the end of August (2016). Subjects filled out a QoL questionnaire, and a formal consent was obtained from all of them. Following Chen et al. 2008, if the following criteria met by the patients, then they were invited to participate: (1) diagnosed with solid tumors, (2) planning to receive chemotherapy, (3) no history of other chronic disease such as diabetic or heart disease, and (4) aged 22 years or older. Chen M-L,(2008). With some modification, the European Organization for Research and Treatment of Cancer QoL Questionnaire (EORTC QLQ-C30) was used to measure QoL in the patients. The test consisted of 56 questions and was arranged into five domains

Chemotherapy section contains a section of 12 bed rooms (6 men + 6 ladies). The clinic every day except Wednesdays and Thursdays and Fridays, beside that in average, 24-25 cases in the week as Wednesdays and Thursdays and Fridays. The number of doctors 3 plus 8 nurses.

The number of meetings every 21 days a meeting for breast cancer:.

But for the colon cancer, the meeting is every two weeks and one week off or 5 meetings during 48 hours.

And about 6-7 day before chemotherapy and radiation around 50 cases a day once a month, and other cases, according to the doctor and may be turned from the doctor's office as Sarcoma .

And for the Upper and lower gastrointestinal bleeding, intensive care 2 bed + 13 bed unit –admission every day 4-6 clients on average

6 staff nurse + 3 doctors + the higher percent cases are hematemsis

III. Result

Table (I): (a) physical, role, cognitive, emotional, and social functioning demographic data as well as cancer/treatment information (b) patient's general conditions (c) patient's physical activities (d) social status and occupational function and (e) sleep pattern.

With the aid of a nurse and/or a medical student, the questionnaires were filled out during the interview. Each question had an equal value and the QoL was quantified as the sum of the scores for all domains. The scores were classified into three categories, namely; nonfavorable, fairly favorable, and favorable. The higher scores on this scale represent a better QoL. The χ^2 test was used to find the correlation between the clinical variables and QoL scores using the SPSS software (version 17). The level of significance was set at $p < 0.05$ for all tests. :- The quality of life was lower in the patients with pain compared to those had no pain (Table 1). In addition, statistical analyses indicated that there was a significant relationship between the pain intensity with reducing or losing body performance and QoL ($P < 0.05$)

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Table 1: The Scores used to evaluate QoL in Cancer Patients undergoing CT (N=205).

Domain	Scores		
	Non Favorable	Fairly Favorable	Favorable
Patients general condition	24-54	55-86	87-117
Physical activities	13-27	26-38	40-56
Social status & Occupational function	14-33	33-53	53-72
Sleep pattern	11-18	19-29	29-40
Quality of life	62-132	133-206	209 -285

Table 2: Demographic and Cancer/Treatment among Cancer Patients with CT(N=205)

Variable	Value			Variable	Variable	N0	% value
	No	%					
Mean age	46.17				GI system	75	36.6
Gender	Male	113	55.1	Cancer type	Other system	130	63.4
	Female	92	44.9				
Marital status	Yes	90	44	Cancer stage	1	16	7.9
	No	115	56		11	64	31.2
					111	73	35.6
					1V	52	25.3
Education	Yes	72	35.1	Knowledge about disease	Yes	185	90.2
	No	133	64.9		No	20	9.8
Job position	Yes	99	48.2	Disease acceptance	YES	180	87.9
	No	106	51.8		No	25	12.1
Sufficient income	Yes	45	22	Extent of disease	Year1>	122	59.6
	No	160	78		≥year1	83	40.4
Health insurance	Yes	196	95.7	Number of ct session	≤2	57	27.8
	No	9	4.3		3-5	81	39.5
					6≤	67	32.7

Table 3: Frequency and Percentages of Cases in Different Domains regarding QoL among Cancer Patients undergoing CT (N=205)

Domains	Non favorable		Fairly favorable		favorable	
Patients general condition	4	2%	92	45%	110	54%
Physical activities	8	4%	150	73.1%	47	23%
Social status\$ occupational function	2	1%	40	19.5%	158	77%
Sleep Pattern	29	14.1%	57	27.8%	116	56.5%
Quality of life	23	12%	132	64.3%	45	22%

Table 4: Frequency of CT Cycles regarding QoL among Cancer patients undergoing CT (N=205); In Each Case $p < 0.001$

Number of CT cycles	Quality of life						Sum	
	Non favorable		Fairly Favorable		Favorable			
□ 2	11	5.3%	31	15.1%	13	6.3%	55	26.8%
3-5	9	4.3%	62	30.2%	14	5.8%	85	41.4%
6 □	7	3.4%	31	15.1%	27	7.8%	65	31.7%
Total	27	13.1%	124	60.4%	53	17.5%	205	100

IV. Results

Table (2). Demographic and cancer/treatment information of the (205) patients are presented in table two. The majority of patients (55.1%) were male, aged 22-75 years, with a mean age of (46.16), (56%), unmarried insufficient income (78%) and low education. GI (gastrointestinal)(36.6%) cancer at stage III was the most common cancer,(35.6%) in all the patients. Most of the patients had (90.2%) were aware of their disease.

Table (3). Findings about QoL in the rest of four domains are depicted . The most common problems in regard to this category were: fear about future (31%), thinking about the disease and its consequences (27.5%), impatience (26%), and depression (19.5%). The QoL was fairly favorable in majority (60.3%) of the patients. There was no correlation between the QoL and variables such as age, sex, marital status, duration of disease, economic conditions, and occupational function. Furthermore, no correlation was found between QoL and the patients' educational level (literate or illiterate).

Table (4). Revealed that the relationship between QoL and the number of CT cycles is demonstrated in As shown, majority (60.4%) of the patients had fairly favorable QoL. A strong correlation was found between QoL and number of CT cycles. Nevertheless, a significant difference was found between the level of QoL in patients with ≤ 2 CT cycles and/or with 3-5 cycles ($p < 0.001$).

This was also the case for the level of QoL in patients with ≥ 6 cycles ($p < 0.001$). Frequency of CT Cycles regarding QoL in Cancer patients undergoing CT (N=205); In Each Case $p < 0.001$.

V. Discussion

To our knowledge, this is the first study that comprehensively evaluates factors affecting the quality of life among cancer patients with solid tumors. This also the first study in Upper Egypt to encourage cancer patient to complete a chemotherapy course plays an important role in the treatment and QoL among cancer patients with chemotherapy. Cancer can produce many different symptoms some are subtle others not so much. They occur according to the type and stage of cancer and some types of cancer do not present any symptoms until they are in advanced stages. The time from the diagnosis, the acceptance of the patient the intensity of the disease and the level of psychic suffering experienced by the caregivers can affect the Quality of Life (QOL) of the patients with cancer Heydarnejad MS.,(2011). The goal of palliative chemotherapy for patients with incurable cancer is to prolong survival and promote QOL. We have shown that chemotherapy use among patients with metastatic cancer whose cancer has progressed while receiving prior chemotherapy was not significantly related to longer survival but was associated with more aggressive medical care in the patient's final week and heightened risk of dying in an intensive care unit. Different scales had been used to evaluate the burden of cancer on different domains of QoL of patients and as a tool for the relationship between different strategies used in the treatment of cancers (Heydarnejad, Hassanpour, & Dehkordi, 2011). Thus, improving quality of life has become one of the outcomes expected both of care practices and public policies for the sector in the fields of health promotion and disease prevention Thalyta C,etal.,(2012).

Studies report significant changes in many dimensions of the quality of life of cancer patients. The use of high doses of chemotherapy drugs for treatment of cancer patients has led to large number of symptoms or problems caused by those symptoms Hedström et al., (2005); Thatcher et al., (2005); Hockenberry and Hooke,(2007); Atay et al., (2012); Krull et al., (2013). Through ongoing observations, we found that they were generally from low socioeconomic backgrounds with relatively low income. Low education has been associated with the forgetting of medical information this agrees with Kessels,(2003), McCaffery et al., (2003) and this also harmony with Harminder S et al.,(2014) \$Sema D et al.,(2015). Low socioeconomic status is also negatively correlated with health-related QOL among the cancer patients similar to Ashing- Giwa and Lim, (2009).

QoL refers to "global well-being," including physical, emotional, mental, social, and behavioral components. In the last few years, a number of informative and valid QoL tools have become available to measure health-related QoL Rizzo PB .,(2008).The most widely applicable instrument to measure the QoL in cancer patients is the EORTC QLQ-C30. Using this method, the current study assessed the QoL in cancer patients undergoing CT. Several studies also support these findings on the influence of CT on good or adequate QoL among the cancer patients undergoing CT Dehkordi A, et al.(2009).

For instance, Nematollahi showed in patients suffering from lymphatic tumors that there was a positive correlation between CT and QoL. Likewise, the QoL of African American women with breast cancer was found to be relatively high; cancer recurrence and metastasis to the lymphatic glands had a significant effect on the QoL. It has also been shown that CT had a measurable adverse effect on QoL in women with node-positive operable breast cancer. Hurny C (1996) \$ Dehkordi et al.,(2009): The results from this current study indicate that CT may improve the QoL in cancer patients. Currently, QoL has been introduced as an endpoint for treatment comparisons in many cancer types, particularly in advanced stages. Bottomley A, (2005). QoL also, as an early indicator of disease progression could help the physician in daily practice to closely monitor the patients Velikova G.,(2008). As reducing mortality and ensuring optimal health-related QoL are perhaps the main objectives of medical care, this study showed that improvement of QoL in the cancer patient can be carried

out by means of CT Casso D,(2004). In fact, improving QoL is as important as the survival benefit that a pharmacological treatment may provide. However, this is not always the case. For example, Nemati et al(2003). reported that the level of QoL in patients with leukemia was most of the sample lower than that in the control group.

The differences may be due to different patients' population (sample size or patient age), or cancer types. The current study selected patients (aged ≥ 22 years) with various solid tumors while Nemati et al (2003).sampled 40 adolescence patients (aged ≥ 22 years) with leukemia. Velikova G,(2008).

In this study, the majority of the patients nearly two third who had completed 3 or more cycles of CT reported a fairly favorable or favorable level of QoL (Table 4). This may show that QoL is directly related to cancer treatment procedure, i.e. CT. Likewise, except for a small group (14.1%) of the patients reported that their sleep pattern was not favorable, the others had good QoL. This implies that CT can lead to the better sleep pattern in cancer patients. The results are consistent with other studies. For instance, Chen et al.,(2008). found that QoL in lung cancer patients during the fourth cycles of CT improved slightly over the baseline values; the patients perceived more sleep disturbances during the early cycles of CT. Chen M-L,(2008). Similar results have been found in patients suffering from advanced cancer by Mystakidou and from breast cancer by Fortner \$ Mystakidou K, (2002),(2007).

The findings of the present study showed that there was no correlation between QoL and age, gender, social status, marriage, and job. Similar results have been reported by Nematollahi \$ Vedat et al.,(2006),(2007).. and Rustøen studies, (2006). Furthermore, there was no correlation between the extent of the disease and QoL. In contrast, Rustøen and Holzner in two separate studies found that the extent to which QoL of cancer patients depends on the time elapsed since initial treatment; with an increase in the extent of the disease, a decrease in the QoL was observed. The difference may be due to the duration of the disease; the extent of the disease, in nearly three third of the patients from the current study, was less than two years whilst it was more than 2 years in Rustøen and Holzner studies., (2001). It is noteworthy to report that the number of emotional symptoms that influenced the quality of life were considerably higher than physical symptoms. We eventually recommend that the emotional characteristics of patients with cancer should be evaluated and appropriate care initiatives should be implemented to improve their quality of life cancer and its treatment affected somehow the patients causing deficits in the functions and presence of more symptoms, jeopardizing their QoL among cancer patients .The improvement in the QoL in cancer patients of the patients can occur in as much as the side effects of the treatment can be avoided , controlled, and also in the adhesion of complementary effective treatments which could help the patients to better face the disease and the treatment received. Researches of longitudinal section are suggested so that the nurse can better understand and explore the QoL of patients with cancer, to better explore the changes occurred in the QoL in the course of time, and also to modify the factors associated with these changes and the possible interventions which face their reduction or control.. .

VI. Conclusion

Cancer is an important health issue influencing QoL. An appropriate treatment which may provide care to the cancer patients is CT. The obtained results here indicate a strong correlation between QoL and number of CT cycles in cancer patients. Since CT is socially stigmatized in some countries encouraging patients to complete a CT course may play an important role in the treatment outcome and the QoL of among cancer patients.

VII. Recommendations

The study recommends doing a research related to the variable of Gender differences in factors predicting QOL, and identifying these differences and how it may assist health care providers in tailoring treatment modalities to individual patients for optimal outcomes.

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