COMPARISON OF QUALITY OF LIFE OF CANCER PATIENTS UNDERGOING CHEMOTHERAPY IN A TERTIARY CARE HOSPITAL, RAWALPINDI

Shamaila Mohsin, Mahmood Ur Rehman, Naila Azam*, Syed Fawad Mashhadi
Army Medical College, National University of Medical Sciences Rawalpindi Pakistan, *Armed Forces Post Graduate Medical Institute (AFPGMI) Rawalpindi Pakistan

ABSTRACT

Objective: To compare the Quality of Life (QOL) of cancer patients at different chemotherapy (CT) cycles.

Study Design: Cross sectional analytical.

Place and Duration of Study: Tertiary Care Hospital, Rawalpindi.

Material and Methods: Study was conducted in a Tertiary Care Hospital in Rawalpindi. Non-probability purposive sampling technique was used to select a sample of 50 cancer patients undergoing chemotherapy. The patients were grouped in two on the basis of number of chemotherapy cycles, those having ≤ 2 CT cycles and those undergoing >2 CT cycles. After taking informed consent the data was collected using the European Quality of Life Questionnaire (EORTC QLQ-C30) to measure QOL in the patients. Data was entered and analyzed using SPSS version 21. Baseline distinctiveness (demographic and HRQOL) was summarized by descriptive statistics. Mean and standard deviation of individual items in the two scales was calculated in two groups and statistical inference was drawn using Independent T test between the two groups, p value of ≤ 0.05 was considered as significant.

Results: The study sample comprised of 31 males and 19 females. Mean age of participants was 43.88 ± 12.72 (Range 18-70) with the most common age group being 41-50 years. There was a male preponderance (63%) and majority 36% were doing house hold work. Among the 50 subjects, 32 % were suffering from lung carcinoma, 26% had genitourinary cancer, 24% had cancer of the oral cavity while 18 % had carcinoma breast. As per the QOL scoring, in the Global Health Scale (GHS) the four items of symptom scale that is fatigue (p=0.02), nausea (p=0.00), pain (p=0.01) and appetite loss (0.03) attained a significant difference. Nevertheless, a significant difference was found between the level of QOL in patients with ≤ 2 CT cycles and with >2 cycles (p<0.001). In the functional scale items only role functioning was significant.

Conclusion: This study suggests that the quality of life is related to chemotherapy cycles. Although QOL scoring system did not show significant improvement in all areas of our study, but the obtained results indicated a significant association between QOL and number of CT cycles in cancer patients.

Keywords: Cancer, Chemotherapy, QOL.

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INTRODUCTION

The term quality of life (QOL) evaluates the general well-being of individuals and societies. The World Health Organization (WHO) defines QOL as the perception of an individual’s life, values, objectives, standards, and interests in the framework of culture. Health Related Quality of life (HRQOL) and its evaluation has become increasingly important in health care especially in field of chronic diseases such as cancer.

The International Agency for Research on Cancer (IARC), estimates that globally an estimated 14.1 million new cancer cases and 8.2 million cancer-related deaths occurred in 2012, and is projected to rise to 30 million around year 2020. A vast majority almost 70% of these cases will encumber the health care facilities in under-resourced countries. In Pakistan there is no accurate estimation of the percentage of deaths due to cancers at national level, despite it being the third leading non-communicable cause of mortality in 2012. The deaths reported per annum were over 1 lakh with over 148,000
new cases identified every year. More than 70% of the cases report for diagnosis and treatment in the advanced stages of the disease, leading to a poor survival and high mortality rate.\(^4\)

Nowadays, Punjab is acknowledged as cancer hub of Pakistan with rising burden of cancer that leads to additional load of non-communicable diseases. According to the cancer registry report of Shaukat Khanum Cancer Hospital in 2015, a total of 34,508 patients diagnosed with malignant cancers in a ten year period nearly, 72.95% (25,173) belonged to the province of Punjab.\(^5\)

The goal of cancer treatment is to cure, prolong life when there is no cure then provide palliative care and consequently to maintain or improve patients’ QOL.\(^6\) In oncology chemotherapy is used as a front-line therapy, as an adjuvant to surgery or radiotherapy and even in palliative care. However, in a large majority of cases, despite initial reduction in tumor size, the vast majority of cancers become unresponsive to chemotherapy.\(^7\) When treatment can not result in cure, it should lead to an improvement of well-being and quality of life.\(^8\) Consequently to maintain or improve patients’ QOL represents a main treatment goal in most of the cancer treatments.

Chemotherapy can give rise to acute and long term side effects which in turn can significantly compromise patient’s QOL. In this new era of cancer management more emphasis is on QOL then quantity of life and where total cure is a remote possibility so there is a need of measurement of QOL which may indicate adaptation to disease and chemotherapy by the patients.\(^9\) There are notable gaps in the literature regarding the cancer treatment’s specific psychosocial issues for cancer patients in Pakistan. This study highlights the impact of various cycles of chemotherapy and their impact on patients’ QOL.

Therefore the objective of this prospective study was to analyze and compare patient-reported QOL and their physical/psychosocial symptom burden, measured by completion of a validated questionnaire in this heterogeneous cancer cohort patients during their respective chemotherapy sessions.

### MATERIAL AND METHODS

A total of 50 cancer patients were recruited in the present, comparative analysis. By using the WHO sample size calculator with a confidence level of 95%, anticipated population proportion (P) of .85 and absolute precision (d) of 10. The sample size calculated was 50. The time duration was 4 months. This cross sectional study was conducted in the Oncology Department of a tertiary care center in Rawalpindi after taking permission from the Institutional Ethics Committee. A formal informed consent was obtained from all the patients before the start of the study. The inclusion criteria outlined in advance before

### Table-1: Demographic details of cancer patients (n=50).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Group</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>Unemployed</td>
<td>7 (14%)</td>
</tr>
<tr>
<td></td>
<td>Professional</td>
<td>14 (28%)</td>
</tr>
<tr>
<td></td>
<td>Household</td>
<td>18 (36%)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>11 (22%)</td>
</tr>
<tr>
<td>Age</td>
<td>18-30</td>
<td>7 (14%)</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
<td>10 (20%)</td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>20 (40%)</td>
</tr>
<tr>
<td></td>
<td>51-60</td>
<td>10 (20%)</td>
</tr>
<tr>
<td></td>
<td>above 60</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>31 (62%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>19 (38%)</td>
</tr>
<tr>
<td>Type of cancer</td>
<td>Lung cancer</td>
<td>16 (32%)</td>
</tr>
<tr>
<td></td>
<td>Breast cancer</td>
<td>9 (18%)</td>
</tr>
<tr>
<td></td>
<td>Genitourinary cancer</td>
<td>13 (26%)</td>
</tr>
<tr>
<td></td>
<td>Oral cavity cancer</td>
<td>12 (24%)</td>
</tr>
</tbody>
</table>
recruiting patients for study was the patients
diagnosed with cancer and visiting the
institution to receive chemotherapy and having
no history of other chronic disease such as
diabetes or heart disease. Sample of 50 patients
was selected by using non probability
purposive sampling technique. Two groups
were made on the basis of chemotherapy cycles
in order to assess the comparison of effects of
chemotherapy on quality of life. Patients with ≤
2 cycles were stationed in group-1 and those
with >2 cycles in group-2. The data collection
was performed by administering validated
questionnaire EORTC QLQ-C30 in local
language (Urdu). Baseline distinctiveness
(demographic and HRQOL) was summarized
by descriptive statistics. Mean and standard
deviation of individual item in the two scales
were calculated in the two groups and
statistical inference was drawn using
Independent T test between the two groups.
*p value of ≤ 0.05 was considered as significant.
Data was entered and analyzed in SPSS version
21.

RESULTS

All 50 eligible patients participated in the
study with response rate of 100%. Mean age of
Out of all the participants 7 (14%) were
unemployed, 14 (28%) were professionals, 18
(36%) were doing household work and 11(22%)
were either retired armed forces personnel or
businessmen as shown in table-1. Out of our 50
subjects, 32 % were suffering from lung
carcinoma, 26 % had genitourinary cancer, 24%
had oral cavity cancer while 18% had carcinoma
breast.

Statistically there was no significant
association observed between demographic
variables such as age (p=0.33), gender (p=0.54)
and employment status (p=0.76) with QOL.

According to the findings of the present
study in the GHS the four items of symptom scale, that is, fatigue (p=0.02),
nausea and vomiting (p=0.00), pain (p=0.01)
and appetite loss,(0.03) attained a significant
difference [table-2]. GHS significantly improved
in group two as compared to the group one
(p<0.001), indicating that the patient rated their
overall health/QOL improved and better as the
chemotherapy session progressed as shown in
fig-1 .In the functional scale items only role

<table>
<thead>
<tr>
<th>Components</th>
<th>Mean (SD) Group 1 (n=25)</th>
<th>Mean (SD) Group 2 (n=25)</th>
<th>p -value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global health status scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global health status</td>
<td>6.28 (1.242)</td>
<td>7.92 (1.037)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Functional scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical functioning</td>
<td>13.00 (1.154)</td>
<td>13.28 (1.10)</td>
<td>0.384</td>
</tr>
<tr>
<td>Role functioning</td>
<td>3.84 (1.178)</td>
<td>4.76 (1.051)</td>
<td>0.005*</td>
</tr>
<tr>
<td>Emotional functioning</td>
<td>8.60 (2.00)</td>
<td>8.92 (1.681)</td>
<td>0.543</td>
</tr>
<tr>
<td>Cognitive functioning</td>
<td>6.76 (1.011)</td>
<td>6.40 (1.224)</td>
<td>0.263</td>
</tr>
<tr>
<td>Social functioning</td>
<td>4.08 (1.222)</td>
<td>4.00 (1.154)</td>
<td>0.814</td>
</tr>
<tr>
<td>Symptoms Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>8.96 (1.368)</td>
<td>8.04 (1.368)</td>
<td>0.022*</td>
</tr>
<tr>
<td>Nausea and vomiting</td>
<td>4.00 (0.957)</td>
<td>3.08 (0.759)</td>
<td>0.00*</td>
</tr>
<tr>
<td>Pain</td>
<td>5.00 (1.322)</td>
<td>4.20 (0.957)</td>
<td>0.018*</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>1.76 (0.273)</td>
<td>1.88 (0.725)</td>
<td>0.561</td>
</tr>
<tr>
<td>Insomnia</td>
<td>2.16 (0.850)</td>
<td>2.00 (0.763)</td>
<td>0.487</td>
</tr>
<tr>
<td>Appetite loss</td>
<td>2.32 (0.556)</td>
<td>1.92 (0.759)</td>
<td>0.039*</td>
</tr>
<tr>
<td>Constipation</td>
<td>2.24 (0.663)</td>
<td>1.84 (0.746)</td>
<td>0.051</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>1.60 (0.577)</td>
<td>1.40 (0.50)</td>
<td>0.197</td>
</tr>
<tr>
<td>Financial difficulties</td>
<td>3.36 (0.637)</td>
<td>3.50 (0.58)</td>
<td>0.360</td>
</tr>
</tbody>
</table>

*p <0.05 (Independent T-Test)
functioning was significant ($p=.005$). Rest physical functioning ($p=0.38$), emotional functioning ($p=0.54$), cognitive $p=0.26$ and social functioning ($p=0.81$) were not significant.

**DISCUSSION**

QOL refers to "well-being, "including physical, emotional, mental, social, and behavioral components which is an important issue in cancer research. The present study shows that there was an improvement in QOL as perceived by the patients as their chemotherapy session progressed.

These findings are consistent with the research done globally and several studies support our findings on the influence of chemotherapy on QOL among the cancer patients. In a similar study done in India it was found that Global Health Score significantly improved in group three undergoing more than three cycles of chemotherapy as compared to group one, indicating that the patient’s overall health improved. In another study done in Tehran a similar result was found. A significant difference was found between the level of QOL in patients with ≤ 2 CT cycles and/or with 3-5 cycles ($p<0.001$).

However, this is not always the case. For example, Bezjak et al., reported that the level of QOL in the patients with lung cancer, the scores on the Health and Functioning subscale were the lowest (20.33 ± 5.59). The difference might be due to different patients’ population (sample size or patient age), cancer types, or may be due to wide-ranging toxicity of chemotherapy agents.

According to the findings of the present study, there was no substantial relationship found between demographic variables such as gender, marital status, and employment status with Quality of life which is in accordance with other studies.

Statistically significant improvement was observed in fatigue, pain, nausea, vomiting and appetite loss parameter between group one and two which was consistent with other researches. This may be attributed to the subsequent improvement of symptoms that followed the advance stage of chemotherapy.

However, research has indicated increased severity of symptoms such as pain severity.

None of the functional scale items turned significant in our study including physical functioning, role functioning, emotional functioning, and cognitive and social functioning. Perhaps they remain stable during the progression of chemotherapy sessions with minor alteration which is in accordance with the research.

One of the limitations of the present study is small number of participants. The other limitation was that the clinical grading and duration of cancer of the patients was not included. Therefore generalization of the findings needs to be done with caution. Nevertheless our study highlighted that Global Health Scale significantly improved in group two as compared to the group one, indicating that the patient rated their overall health/QOL improved and better as the chemotherapy session progressed. QOL may be considered to be the effect of an illness and its treatment as perceived by patients and is modified by factors such as impairments, functional stress, perceptions and social opportunities.

**CONCLUSION**

The results of our study concluded that the quality of life is related to chemotherapy cycles. Although QOL scoring system did not show significant improvement in all areas of our study, but a provident diagnosis with a suitable treatment including chemotherapy may attenuate the negative aspects of cancer as a lethal disease and as an early indicator of disease progression could help the physician in daily practice to closely monitor the patients.

**ACKNOWLEDGEMENTS**

The authors greatly acknowledge the great efforts and inputs of the students of the 4th year MBBS of Army Medical College, Rawalpindi especially Hammad Ishaq, Ahsan Tanveer, Muhammad Zuhail and Tahir Iqbal.

**CONFLICT OF INTEREST**

The authors of this study reported no conflict of interest.
INTRODUCTION

Quality of life (QoL) is one of the most important outcomes of cancer care. It encompasses all aspects of life, including physical, emotional, social, and psychological well-being. The QoL of cancer patients is influenced by various factors, including the cancer stage, treatment type, and patient-specific characteristics. This study aims to assess the QoL of cancer patients treated at Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan.

METHODS

A prospective, cross-sectional study was conducted from January to December 2015. A total of 250 cancer patients, including those with various types of cancer, were recruited. The QoL was assessed using the European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30 and QLQ-C30-Pa questionnaires. The data were analyzed using descriptive and inferential statistical methods.

RESULTS

The mean age of the participants was 48.5 years, and the majority (65%) were females. The most common cancer types were breast (32%) and lung (28%). The QoL scores were lower in patients with advanced stages of cancer compared to those with early stages. The physical and social functioning domains were significantly lower in patients with advanced cancer compared to those with early-stage disease.

CONCLUSION

The QoL of cancer patients at Shaukat Khanum Memorial Cancer Hospital and Research Centre was lower in advanced stages of cancer compared to early-stage disease. Supportive care interventions and early detection programs are recommended to improve the QoL of cancer patients.

REFERENCES