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Assessment of Quality of Life in Cervical Cancer Patients Undergoing Concurrent Chemo Radio Therapy- A Comparative Analysis

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Quality of life, Cervical cancer, Cross-sectional, Chemotherapy, Radiotherapy.

Abstract

Background: Cervical cancer incidence and mortality rates are increasing annually. Most of the cervical cancer cases are diagnosed late leading to poor outcomes which affects Quality of life (QOL).

Aim: The aim of the present study is to assess and identify the impact of treatment on quality of life of advanced or recurrent carcinoma of the cervix and to assess the factors affecting the QOL in cervical cancer patients.

Methods: A Cross-sectional, Observational study conducted for 8 months in a Tertiary care cancer hospital, in cervical cancer patients receiving concurrent chemotherapy from November 2021 to June 2022 were enrolled in this study. The study was conducted among 94 cervical cancer patients attending the Department of Oncology who met the Eligibility criteria and were interviewed with a structured questionnaire of QOL. The baseline observations were recorded initially and after 3 and 6 months post treatment. We used the European Organization for Research and Treatment of cancer core-30 item (EORTC QLQ-C30) and cervical cancer module (EORTC QLQ-CX 24) to assess the survivors overall QOL.

Results: A total of 100 patients were included for analysis among them few lost to follow-up so sample of (n=94) were taken into consideration. A statistically significant improvement found in domains like physical, emotional function, pain, fatigue and vaginal and sexual function worsened significantly. No improvement in social, cognitive, sexual activity. Vaginal and sexual function worsened significantly. Overall based on Education, stage and type of cancer and severity had great impact on the quality of life.

Conclusion: Quality of life in cervical cancer patients have great improvement in terms of physical and emotional functioning. About 60% of the survivors had a good QOL. Cervical cancer patients with early stage of disease had better QOL. Carboplatin and paclitaxel in combination along with radiotherapy seems to have better QOL.

INTRODUCTION: Cervical cancer is the second common cancer in women in developing countries, ranking wise second most common malignancy and fourth most common cancer overall in women.[1] Studies have been published concerning the health of cervical cancer patients and survivors.[2-6] Effective therapy for cervical cancer included Chemotherapy, radiotherapy, surgery, immunotherapy, biologic therapy, hormonal therapy, and cryosurgery are the diverse treatment modalities available for cancer which can treat 80% of women with early-stage disease. International Federation of Gynecology and Obstetrics (FIGO) stages I-II and 50-60% of women with stage-III disease.[7] Chemotherapy is a significant component of treatment for many cancers, and new anti-cancer drugs represent one of the largest areas of pharmaceutical development [8]. Drugs included in the present study to treat cervical cancer are Carboplatin and Paclitaxel and their combinations are used. Before starting the therapy Laboratory tests like - Complete blood picture, Urinalysis, Liver, Kidney function tests, and ECG and Radiographic studies like Chest X-ray,

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Ultrasonography, CT scan, and MRI scan. The side effects of chemotherapy affect an individual's physical health, quality of life, and emotional state [9].

Majority of the cervical cancers are diagnosed at a relatively younger age and Quality of life has become more significant issue with increased number of survivors of Ca.Cervix.[10]

Quality of life (QOL) of patients with cervical cancer is an essential assessment for personalized treatment and in providing better patient care, Studies identified that health- related QOL will help to predict survival in patients with cancer. [11,12,13]

Study variables: The overall QOL Score was the dependent variable. Different variables included in the present study were the clinical characteristics, which includes Body mass index (BMI), parity, FIGO stage, Primary treatment type and the Co-morbid conditions and these variables are measured in planning and monitoring of the therapeutic process in cervical cancer patients.

Data Collection: Data collection was done by taking consent from each patient, telephone and face-to face interview were included. Medical records written manually and electronic were considered for data collection. The Available information for the subjects was retrieved into a data collection sheet. UID, age, contact details and histology report number all are considered in order to avoid data duplication.

Questionnaires: The survey instruments were the EORTC QOL Questionnaires, EORTC QLQ CX-24 items consisting of three multi-item scales (symptom experience, body image, and sexual/vaginal functioning scale) and six single item scales. EORTC QLQ- C30 scale comprised global health status/overall QOL subscale: five functional domains (physical, role, cognitive, emotional, social functioning): three multi-item symptom scales (Fatigue, pain, and Nausea/vomiting).

Aim and Objectives:

The aim and objectives of the study was-

1) To assess and identify the impact of treatment modalities (carboplatin alone, carboplatin and paclitaxel combination, and radiotherapy in both therapies) on quality of life of advanced or recurrent carcinoma of the cervix.
2) To assess the factors affecting the QOL in cervical cancer patients.

METHODOLOGY:

Study Sample- The present study was conducted among 100, out of them 6 missed for follow-up (n=94) women patients with cervical cancer.

Study Period- The present study was conducted for a period of 8 months, (November 2021 to June2022).

Study Site - The present study was conducted in a tertiary care hospital in the Pragna cancer hospital, Anantapur.

Study design - The present cross-sectional, observational study was conducted in the Oncology department. Demographic profiles, clinical details, and prescription data were collected in specially designed proforma and analyzed after obtaining written informed consent from patients.

Study Criteria-

Inclusion criteria of the study were patients in the age group of 21 years and above.

Patients who receive chemoradiation, before the start and after 3 and 6 months of post treatment.

All the patients who are able to communicate and willing to participate in the study.

Exclusion criteria- Patients who are not willing to participate in the study and were unable to respond were excluded from the study. Males are excluded from the present study.

Patients with psychological, cardiac, renal problems and any life-threatening illness patients were excluded from the study.

Ethical Approval: Ethical Approval was obtained from Institutional Ethics committee.

Statistical analysis: Descriptive statistics are used for the calculation of Demographics and Clinical data of the patients. The results are presented in Mean ± standard deviation and percentages. Data were analyzed using Prism graph-pad.

RESULTS: In this study, 100 patients were enrolled, and out of this 5 missed for follow-up and 1 patient expired before the completion of 6 months of treatment (n=94). The Demographic details of the patients are mentioned in Table 1.

Table -1: Demographic details of the patient (n=94)

S.No	Demographic details	Percentage (%)
1.	Age (In Years)	
	21-31	5.31 %
	32-41	10.6 %
	42-51	27.65%

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	51-61 >61 years Mean ± SD	52.1% 4.25% 99.85%
2.	Education Literate Illiterate	 37.23% 62.76%
3.	Occupation Working Homemaker Others	 26.59% 54.25% 19.14%
4.	Marital status Married Unmarried Divorced/Widow	 80.85% 18.08% 1.06%
5.	Socioeconomic status Low Middle High	 56.38% 36.17% 7.44%
6.	Residence Rural Urban Others	 48.93% 40.42% 10.63%
7.	Menstrual status Pre Post	 30.85% 69.14%
8.	Social habits Yes No	 40.42% 59.57%
6.	Hormonal Replacement therapy Yes No Unknown	 38.29 % 44.68 % 17.02%
7.	Staging 1 II III IV	 15.95 % 34.04 % 44.68 % 5. 31%
8.	Tumour type Squamous Adenocarcinoma	 92.55% 7.44%
9.	Treatment Mode Chemoradiation Surgery	 92.55% 7.44%
10.	Tumour size Less than 4 cm More than 4cm	 63.82% 36.17%

Table 1- Results include basic demographic details of the patient like Age, Education, Occupation, marital status, Socioeconomic status, Residence, Menstrual status, Social habits, HRT, Staging of cancer, Tumor type, Treatment mode and Tumor size all these data represented in Table 1.

Table: 2 Comparison of Cancer Cervix specific Quality of life score (EORTC Cx-24) From baseline to 3 and 6 months after treatment (n=94)

S.No	Domain	Baseline	3 months	6 months	Overall P-Value
1.	**Functional Scale**				
	Body image	5.69 ± 1.00	4.73 ± 0.91	4.50 ± 0.99	
	Sexual activity	1.79 ± 0.28	2.10 ± 0.09	2.68± 0.09	0.08
2.	Sexual enjoyment	4.89 ± 0.57	3.95 ±0.69	3.76 ±0.58	

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	Sexual function	16.99 ± 1.89	13.83 ± 2.38	12.57 ± 2.64	
	Symptom Score				
	Symptom experience	18.00 ± 2.99	13.42 ± 2.02	11.35 ± 1.59	0.06
	Lymphoedema	2.03 ± 1.58	1.96 ± 0.93	1.63 ± 0.52	
	Peripheral neuropathy	1.78 ± 1.02	1.67 ± 1.05	1.37 ± 0.73	
	Menopausal symptom	1.69 ± 0.90	1.69 ± 0.85	1.69 ± 0.80	
	Sexual worry	4.50 ± 0.19	2.72 ± 0.69	2.56 ± 0.42	

Table 2 indicates that there is a significant difference was found among the people with cervical cancer in baseline, 3 months, and 6 months during the therapy in terms of Functional scale and symptom score and no significant difference in terms of single item domains.

Table: 3 Comparison of Cancer cervix specific Quality of life (EORTC QLQ C-30) scale score from baseline to 3 and 6 months after treatment (n=94)

S.No	Domain	Baseline	3 months	6 months	P-Value
1.	**Functional Scale**	8.95 ± 2.30	10.39 ± 2.81	13.10 ± 3.81	
	Physical function	2.96 ± 0.96	3.48 ± 1.65	4.67 ± 2.10	**0.05**
	Role function	7.95 ± 1.62	9.56 ± 2.05	12.90 ±2.03	
2.	Cognitive function	2.83 ± 0.89	3.01 ±1.18	3.50 ± 1.18	
	Social function	6.82 ± 1.59	7.87 ± 0.93	6. 75 ±1.89	
	Single item				
	Financial difficulties	2.69 ± 0.93	2.43 ± 0.89	2.56 ± 0.89	
3.	Diarrhoea	1.73 ± 0.85	1.49 ± 0.67	1.54 ± 0.59	
	Constipation	2.65 ±1.19	2.13 ± 0.79	2.10 ± 0.78	**0.09**
	Appetite loss	3.58 ± 0.96	2.55± 0.96	3.00 ± 1.00	
	Insomnia	2.58 ± 0.87	1.90 ± 0.65	1.84 ± 0.62	
	Dysponea	1.82 ±1.21	1.62 ± 0.83	1.45 ± 0.56	
	Symptom scale				
	Pain	6.90 ± 1.67	4.87 ±1.50	3.54 ± 1.05	
	Nausea and vomiting	2.81 ± 0.90	2.24 ± 0.49	2.20 ± 0.17	**0.001***
	Fatigue	10.23 ± 1.96	8.65 ±2.00	8.00 ± 2.37	

Table 3 indicates that there is a significant difference was found among the people with cervical cancer in baseline, 3 months and 6 months during the therapy in terms of physical, role function in functional scale and no significant difference in terms of single item domains.

It is always essential to recognize that cervical cancer and its treatment can impact patient physical, emotional and social well-being. In terms of treatment Surgery, radiation therapy and chemotherapy can lead to various side effects that impact patient's daily life.

Table : 4 Comparison of Global health score from Baseline to 3 and 6 months after treatment (n=94)

S.No.	Evaluation time	Mean ± SD	P-Value
1.	Baseline	4.98 ± 1.92	
	3 months	5.62 ± 1.82	0.05*
	6 months	5.79 ± 2.31	

Table 4 depicts the comparison of overall global health score from baseline and after treatment and there is a significant difference (P= 0.05*)

DISCUSSION - Health related QOL has become an important element within therapeutic standards in clinical practice. In our study, there was a significant improvement in the global health and QOL of patients of the patient after treatment. Pasek et al. conducted a study which had same results.[14]

A study conducted by kumbhaj et al., and Kumar et al and showed that there is no statistically significant improvement in the emotional functioning in patients who undergone surgery and financial difficulties increased in a significant proportion. [15,16]

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Most of the cases are diagnosed at an early stage due to robust screening programmes, in developed countries, the incidence of cervical cancer cases has reduced.[17] Implementing such schemes in every cancer care unit can help in early diagnosis of cancer cases.

Loss of appetite is having negative effect on cervical cancer women in terms of QOL especially in Iran and Bangladesh which correlates with our study. [18,19]

In relation with the earlier reports of one publication suggested that financial difficulties and other symptoms like constipation, pain, insomnia, and fatigue were concerning issues with is relevant with our study.[20]

Cervical cancer patients socio economic status and rural area of living have negative impact on global QOL, and reports are clearly indicating that less education and limited knowledge about health issues and poor health had great impact on QOL.[21]

Several reports suggested a negative impact of sexuality across all cervical cancer patients and have concerns in case of its treatment. [22,23,24,25]

Sexuality is an important and worried aspect of gynecological cancer, thus being a crucial determinant of QOL. In our study sexual function, sexual desire and vaginal functioning score has been decreasing drastically and is often intact in older women but its course decreases with increasing age. [26,27] To improve the health outcome of cervical cancer patients the treatment and management and diagnosis should focus in time.

Cognitive functioning was good and improved in younger Ca.cervix patients and were more actively participating in day to day activities and remembered things well compared with aged women, reports similar to our study.[28]

Several studies suggested that overall QOL was higher in stage IV cancer when compared with Stage I, II, III [29] and also patients at the last stage of cancer had poor role functioning as these patients usually tend to opt for palliative management and therefore unable to perform much work.

CONCLUSION - The study concludes that the majority of cervical cancer patients receiving concurrent chemotherapy had satisfactory and Stable QOL, nearly half of the Ca.cervix patients had good QOL and acceptable levels of functioning after chemo-radiotherapy. Most of the patients are likely affected physically during treatment. Combination of concurrent chemoradiotherapy contributed to good functioning in most of QOL domains in both EORTC CX-24 and EORTC-C30. In the present study QOL assessment tool was so helpful to the oncology team in identifying and evaluating the specific parameters that affect QOL. Among patients with Ca Cervix, Carboplatin and Paclitaxel were the most prescribed drugs. Improvement in patient doctor relationship counselling about cancer-specific issues should be a objective in patient care to improve QOL effectively.

Our study highlighted the importance of clinical pharmacists in the oncology department by counseling the patient regarding the signs and symptoms, adverse effects of various treatment modalities, its early identification and management, and also finding a few medication errors regarding anti-neoplastic agents.

RECOMMENDATIONS- It is Mandatory to note that advances in treatment and supportive care has improved QOL in many Ca.cervix patients. In addition with Life style changes, stress management, and counselling can help improve QOL better for cervical cancer patients. Cervical cancer is generally a treatable disease, and prognosis has improved with advances in medical treatment and early detection by creating awareness.

LIMITATIONS- The sample size of the present study is very small, and the research conclusion requires further verification. As this is a cross-sectional study, the causality, and the relationship between QOL and factors affecting QOL is difficult to identify and also to correct it in less time.

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CONFLICT OF INTEREST -None declared.

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