

## A study to assess the Quality of Life (QoL) of cervical cancer patients undergoing chemotherapy or radiotherapy attending the Department of Radiotherapy of a tertiary care hospital in Kolkata.

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**Abstract:** *Introduction:* Cervical cancer is the 4th most frequent cancer in women worldwide and ranks as the 2nd leading cause of female cancer in India. A portrayal of the trauma undergone by these patients is provided by assessment of Quality of Life (QoL) and thus address their fears and concerns for their betterment. This study assessed QoL of cervical cancer patients undergoing chemotherapy or radiotherapy attending the Department of Radiotherapy, Medical College, Kolkata. *Methodology:* An observational cross-sectional institution based study was undertaken with 41 cervical cancer patients using EORTC QLQ-C30 and EORTC QLQ-CX24 questionnaires. *Results:* The mean age of the respondents was  $54.80 \pm 2.17$  years. The mean Global Health Status score was 53.05 with majority (56.10%) having score above mean. For EORTC QLQ-C30, the score of all 5 Functional Scales for majority were above mean while that of Symptom Scales were below mean except Fatigue, Nausea and Vomiting. In EORTC QLQ-CX24, Body Image and Sexual Enjoyment were identified as the major areas of crises. *Conclusions:* Special care can be taken to cater to the emotional needs of patients by family members and health care providers to improve QoL.

**Keywords** –Cervical cancer, Chemotherapy, EORTC, Quality of Life, Radiotherapy.

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### I. INTRODUCTION

Human Papilloma Virus (HPV), the most common viral infection of the reproductive tract affects most sexually active women at some point, with repeated infections in some. Persistent infections may lead to precancerous cervical lesions. If untreated, these may progress to cervical cancer.<sup>[1]</sup>

Cervical cancer is the 4th most frequent cancer in women worldwide with an estimated 528,000 new cases and 270,000 deaths in 2012.<sup>[1]</sup> Compared to developed countries, developing countries have higher incidence (84% of new cases i.e., 445,000 new cases and 85% of deaths occurred in developing countries in 2012).<sup>[1]</sup> It ranks as the 2nd leading cause of female cancer in India with 122,844 new cases and 67,477 deaths (estimations for 2012).<sup>[2]</sup> Even with the availability of methods for screening for early diagnosis, there is lack of periodic screening program in India and the level of awareness amongst the masses is very low.

Associated with the disease and its treatment are a number of negative consequences. The psychological distress include depression, fear, self-image changes, and economic worries. Associated with surgical treatment are changes in female genital anatomy affecting perception of body image and sexual functions. Radiotherapy leads to damage to vaginal mucosa and epithelium. Chemotherapy induces side effects like vomiting, diarrhoea, weight loss, and hormonal changes.<sup>[3]</sup> There is impaired fulfilment of family and social roles and even after successful treatment, fear of cancer recurrence persists.

As such a large population of women and their families undergo the trauma of the disease and treatment; it is of utmost importance to study their mental situation and address their fears, concerns and misconceptions and thus progress towards the betterment of their mental wellbeing- an objective which can be achieved by undertaking health related Quality of Life studies of these patients.

The present study was undertaken with an objective to assess the Quality of Life of cervical cancer patients undergoing chemotherapy or radiotherapy.

### II. METHODOLOGY

A observational, institution based, cross sectional study was undertaken among cervical cancer patients undergoing chemotherapy or radiotherapy attending the Department of Radiotherapy, Medical College, Kolkata. The study was undertaken for 2 months (1<sup>st</sup> August, 2017 – 30<sup>th</sup> September, 2017) and included 41

cervical cancer patients. The inclusion criteria were all women who had received at least one cycle of chemotherapy or had begun radiotherapy.

### **1.1 Study tools**

Along with a questionnaire to obtain general information, cancer history, and clinical survey of the patient; EORTC QLQ-C30 and EORTC QLQ-CX24 questionnaires version 3.0 were used for assessing Quality of Life of the patients in English, Hindi and Bengali.

The EORTC QLQ C-30 questionnaire comprises of 30 questions assessing Global Health Status, 5 Functional Scales and Symptom Scales.<sup>[4,5]</sup> The EORTC QLQ-CX24 questionnaire is a cervical cancer specific complementary questionnaire.<sup>[4,5]</sup>

A 4-point response scale to assess each Functional or Symptom Item.

For all scales, the RawScore (RS) is the mean of the component items:  $RS = (I_1 + I_2 + \dots + I_n) / n$  (1)

For Functional Scales: Score =  $\{1 - (RS - 1) / \text{range}\} * 100$  (2)

For Global Health Scale and Symptom Scales: Score =  $\{(RS - 1) / \text{range}\} * 100$  (3)

where I=Item, n= total number of items, Range = difference between the maximum possible value and minimum possible value of a given component item.<sup>[4]</sup>

Thus all measures ranged in score from 0 to 100. A high scale score represents a higher response level. Thus, a high score for a Functional Scale represents a high / healthy level of functioning, a high score for the Global Health Status / Quality of Life represents a high Quality of Life, but a high score for a Symptom Scale/ Item represents a high level of symptomatology / problems.<sup>[4,5]</sup>

### **1.2 Ethical consideration**

Institutional Ethical Committee approval was obtained prior to starting the study and informed consent form was signed by the patients.

### **1.3 Statistical analysis**

The data was entered in MS Excel and analyzed using Statistical Package for the Social Sciences (SPSS) version 19.0.

## **III. RESULTS**

This study analyzed data from 41 cervical cancer patients. The mean age of the respondents was  $54.80 \pm 2.17$  years. The mean Global Health Status score was 53.05 with majority (56.10%) having score above mean (TABLE 1). For EORTC QLQ-C30, the score of all 5 Functional Scales for majority were above mean (TABLE 2) while that of Symptom Scales were below mean except Fatigue, Nausea and Vomiting (TABLE 3). In the Functional Scales of EORTC QLQ-CX24, the score of majority of the population in all areas were below mean, except for Sexual/Vaginal Functioning scale (TABLE 4). For Symptom Scales of EORTC QLQ-CX24, the score of majority of the population in all areas were below mean except Menopausal Symptoms and Sexual Worry. (TABLE 5).

## **IV. TABLES**

Table1: Distribution of study population according to Global Health Status/ Quality of Life scale of EORTC QLQ-C30 (n=41)

VARIABLE	MEAN	Below Mean N (%)	Above Mean N (%)
Global Health Status	53.05 ± 20.98	18 (43.90)	23 (56.10)

Table 2: Distribution of study population according to score of Functional Scales of EORTC QLQ-C30 (n=41)

VARIABLE	MEAN	Below Mean N (%)	Above Mean N (%)
Physical Functioning	65.37 ± 22.32	18 (43.90)	23 (56.10)
Role Functioning	63.01 ± 23.13	19 (46.34)	22 (53.66)
Emotional Functioning	55.69 ± 21.77	19 (46.34)	22 (53.66)
Cognitive Functioning	65.44 ± 22.48	15 (36.59)	26 (63.41)
Social Functioning	86.99 ± 17.68	19 (46.34)	22 (53.66)

Table3: Distribution of study population according to score of Symptom Scales of EORTC QLQ-C30 (n=41)

VARIABLE	MEAN	Below Mean N (%)	Above Mean N (%)
Fatigue	53.39 ± 18.29	16 (39.02)	25 (60.98)
Nausea and Vomiting	28.05± 20.9	17 (41.46)	24 (58.54)
Pain	34.96 ± 34.52	23 (56.10)	18 (43.90)
Dyspnoea	13.01 ± 22.21	28 (68.30)	13 (31.70)
Insomnia	35.77 ± 33.66	25 (60.98)	16 (39.02)
Appetite Loss	39.84 ± 35.92	21 (51.22)	20 (48.78)
Constipation	39.84 ± 25.56	22 (53.66)	19 (46.34)
Diarrhoea	10.57 ± 21.65	31 (75.61)	10 (24.39)
Financial Difficulties	49.59 ± 27.0	21 (51.22)	20 (48.78)

Table 4: Distribution of study population according to score of Functional Scales of EORTC QLQ-CX24 (n=41 for Body Image and Sexual Activity, n=3 for Sexual Enjoyment and Sexual/ Vaginal Functioning as others were not sexually active)

VARIABLE	MEAN	Below Mean N (%)	Above Mean N (%)
Body Image	67.48 ± 19.15	23 (56.10)	18 (43.90)
Sexual Activity	2.44 ± 8.79	38 (92.68)	3 (7.32)
Sexual Enjoyment	11.11 ± 19.24	2 (66.67)	1 (33.33)
Sexual/ Vaginal Functioning	58.33 ± 14.43	1 (33.33)	2 (66.67)

Table 5: Distribution of study population according to score of Symptom Scales of EORTC QLQ-CX24 (n=41)

VARIABLE	MEAN	Below Mean N (%)	Above Mean N (%)
Symptom Experience	18.18 ± 13.62	22 (53.66)	19 (46.34)
Lymphedema	14.63 ± 19.79	25 (60.98)	16 (39.02)
Peripheral Neuropathy	38.21 ± 28.44	27 (65.85)	14 (34.15)
Menopausal Symptoms	22.76 ± 24.08	19 (46.34)	22 (53.66)
Sexual Worry	25.20 ± 31.43	20 (48.78)	21 (51.22)

## V. DISCUSSION

QoL indicators measure impact of the disease and its treatment on the patient's mental and physical well-being. These indicators assess the non-therapeutic aspects of care and delve deep into life of the patients to understand their own perception of the disease and identify associated problems.

In the present study, the Global Health Status score (Mean=53.05) of majority (56.10%) was above mean, i.e. better Global Health Status. A study by Pasek M et.al. in Poland on 205 patients with cervical cancer subjected to radiation therapy using EORTC QLQ-C30 questionnaire found similar results i.e. patients were satisfied with their Global Quality of Life.<sup>[7]</sup>

In present study, the scores of all 5 Functional Domains of EORTC QLQ-C30 for majority of the population were above mean i.e. better functional levels. Kirchheiner et.al. found that Global Health Status, Physical and Role Functioning showed a highly significant decline during treatment by radiochemotherapy ( $p \leq 0.001$ ).<sup>[8]</sup> Lutgendorf SK et.al. found that decrements in Physical, Emotional, and Functional well-being were reported by patients receiving extensive chemotherapy.<sup>[9]</sup> Ray K et.al. reported that over 11% of the respondents thought of keeping cancer diagnosis as a secret from neighbours to avoid social stigma and associated problems.<sup>[10]</sup> The findings of these studies to some extent are contrasting to the present study as it was cross-sectional and used the mean score of the patients themselves as a cut-off for estimating Functional Levels while the other studies were longitudinal or used healthy controls to determine the Functional Levels.

In the present study, the score of Symptom Scales of EORTC QLQ-C30 of majority of the population in all domains were below mean except Fatigue, and Nausea and Vomiting, i.e. the patients had higher symptom experiences of Fatigue, and Nausea and Vomiting. Kirchheiner K et.al. found that the most frequently reported symptoms during active treatment (radiochemotherapy) were: fatigue (78%), diarrhoea (68%), urinary frequency (60%) and nausea (54%).<sup>[8]</sup>

Sexuality is an important aspect in patients suffering from cervical cancer as it affects the same areas of the body involved in sexual response. Both chemotherapy and radiotherapy has been associated with dyspareunia, insufficient lubrication and anxiety about sexual performance. In the present study, the score of Functional Scales of EORTC QLQ-CX24 for majority in all areas were below mean i.e. poorer functional levels, except for the Sexual/Vaginal Functioning scale and the score of Symptom Scales of EORTC QLQ-CX24 for majority of the population in all areas were below mean except Menopausal Symptoms and Sexual Worry, i.e. the patients had higher symptom experiences of Menopausal Symptoms and Sexual Worry. Dahiya et.al. found that there was a significant decrease in Sexual Enjoyment and Sexual and Vaginal Functioning score in EORTC QLQ CX-24.<sup>[11]</sup> Kamau et. al. found that there were significant changes in the sexual domain, as a result in which 28.3% reported marital discordance. In the personality domain, decreased self-esteem and self-projection in life occurred in 30.9% and 36.2% respectively.<sup>[12]</sup>

## VI. CONCLUSION

Treatment is not the only aspect of health care services. It also includes detecting and addressing problems affecting QoL of patient, even more so for a disease like cervical cancer which is still a taboo in India. Out of 41 patients evaluated, the major areas of crisis (where majority of the patients had score above mean for Symptom Scale and below mean for Functional Scales) experienced by the patients were Fatigue, Nausea and Vomiting, Sexual Activity, Sexual Enjoyment, Menopausal Symptoms and Sexual Worry, and low Body Image. Thus, with focus on the scoring of this study, patient based service can be provided such as:

- ★ Interventional programmes to prevent/ ameliorate specific problems and adverse effects.
- ★ Rehabilitation therapy.
- ★ Special care can be taken to cater to the emotional needs of patients by family members and health care providers.

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