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Original Research Article

Evaluation of Quality of Life of Head and Neck Cancer Patients: A Descriptive Cross-Sectional Study

Vinodkumar Mugada[1], Raj Kiran Kolakota[2], Sravani Reddy Karri[3], Tejasree Karineedi[3], Faizul Ikram[3]

[1]Assistant Professor, [2]Professor,
Department of Pharmacy Practice, Vignan Institute of Pharmaceutical Technology, Duvvada, AP, India.
[3]Pharm. D Intern, Department of Pharmacy Practice, Aditya Pharmacy College, Surampalem, AP, India.

Corresponding Author: Vinodkumar Mugada

ABSTRACT

This study was aimed to evaluate the quality of life of head and neck cancer patients receiving treatment. This prospective cross-sectional study was carried out for the duration of 9 months. The European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 Items (EORTC QLQ-C30) including the H&N-35 module for assessing QOL is used. The comparison was made between specific socio-demographic and clinical characteristics with domains of EORTC QLQ-C30 questionnaire and EORTC QLQ H&N35. Non-parametric tests and Spearman's Correlation were employed as part of statistical analysis. The level of significance was taken at $p<0.05$. The mean age of the patients was 55.18±13.62 years. The age group of 41-60 years is highly affected (52.08%). Males are more affected than their counterparts (64.58%). Uneducated is high in number (75%). Patients suffering from oral cavity type of head and neck cancer are high in number (52.08%). Stage III cancer patients are high in number (61.45%). Majority of patients are receiving chemo-radiotherapy (34.37%) as the treatment of the disease. There was a statistically highly significant association between gender and physical functioning (p=0.008) and the statistically significant association between gender and emotional functioning (p=0.035). In table 4, there was a statistically highly significant association between tumor location and pain (p= 0.002), opening mouth (p=0.000). There was a statistically significant association between tumor location and speech problems (p=0.036), coughing (p=0.044).

Keywords: Quality of life, head and neck cancer, EORTC QLQ-C30, EORTC QLQ H&N35.

INTRODUCTION

In recent days, quality of life was emerging as a primary outcome measure of therapeutic effectiveness. Health-Related Quality of Life (HRQOL) may be the primary measure of efficacy in chronic conditions and palliative treatments like palliative chemotherapy in noncurable cancers. [1] According to Schron and Shumaker, [2] HRQOL was defined as "a multidimensional concept referring to a person's total well-being, including his or her psychological, social, and physical health status". Patrick and Erickson [3] defined that HRQOL is "the value assigned to duration of life as modified by the impairments, functional states, perceptions, and social opportunities that are influenced by disease, injury, treatment or policy". Croog et al [4] conducted the first QOL study and evaluated the impact of antihypertensive therapy on QOL.

Head and neck cancer (HNC), an umbrella term for malignancies of the

larynx, hypopharynx, nasal cavity, paranasal sinuses, nasopharynx, oropharynx, oral cavity, and salivary gland, accounts for about half a million cases annually, ranking it as the sixth most common cancer globally. [5] The management of head and neck cancer is a complex process because the anatomical arrangement of the aerodigestive tract makes other parts also vulnerable when one part was affected. Surgery and radiation therapy are the major curative modalities. Studies have shown the effectiveness of chemotherapy in organ preservation protocols for locally advanced laryngeal [6,7] and hypopharyngeal tumors [8] and in augmenting survival in patients with locally advanced nasopharyngeal tumors. [9,10]

The aim of the present study was to evaluate the quality of life of head and neck cancer patients receiving different treatment modalities. The objectives of the study include evaluation of socio-demographic, clinical and treatment variables on quality of life in head and neck cancer patients.

MATERIALS AND METHODS

1. Study Site & Study design

The present study was carried out in the Department of Radiotherapy, Government General Hospital, Kakinada for the duration of six months. Our present study does not contain any prior hypothesis, data related to Quality of life and outcomes are taken at the same time, Follow up was required. As said above the study characteristics are closely related to characteristic features of Prospective cross-sectional study. So, we have chosen descriptive cross-sectional study as our study design.

2. Ethical Consideration

Permission was approved from the Institutional Ethical Committee to conduct this study. The aims and objective of the study were clearly explained to the patients. A patient consent form was obtained from patients who are willing to co-operate with the study. All the information provided by the patients was kept confidential. All the data entered was preserved very carefully and will be destroyed after the completion of the study.

3. Sampling Technique & Sample Size Estimation

Simple random sampling was employed as a sampling technique in our study. The estimated sample size of the present study is 92. The margin of error is 5%; the confidence level is 95% and the response of distribution was 50%.

4. Participants

Inclusive criteria:

- Patients who are suffering from Head and Neck Cancer.
- Patient ≥ 20 years of age.
- Patients of both the genders.
- Patients who are receiving radiotherapy, chemotherapy, radio-chemotherapy.

Exclusive criteria:

- Patients suffering from head and neck cancer and with comorbidities
- Patients < 20 years of age.
- Patients or patient's representatives who are not willing to cooperate.

5. Study Instrument:

The standardized EORTC QLQ-C30 (version 3.0) questionnaire and EORTC QLQ H&N35 module were used for the evaluation of QOL. The QLQ-C30 questionnaire is used for general health assessment as well as physical, emotional and social assessment. It contains 30 questions grouped into 5 functional scales: physical functioning (5 questions), functioning in practical roles (2 questions), emotional functioning (4 questions), cognitive functioning (2 questions) and social functioning (2 questions). The questionnaire also includes 3 symptomatic scales– fatigue (3 questions), nausea (2questions) and pain (2 questions) – as well as 6 single questions evaluating the intensity of the following symptoms: dyspnea, sleeplessness, lack of appetite, constipation, diarrhea, and financial problems. The last two questions deal with the overall health assessment. There is a four-degree scale in the answers to the questions in the questionnaire (never 1, sometimes 2, often 3, very often 4). The EORTC QLQ-H&N35

questionnaire evaluates specific symptoms connected with tumors of the head and neck and their treatment. It has 35 questions grouped into 7 scales: pain (4 questions), swallowing (5 questions), senses (2 questions), and speaking (3 questions), eating in the company of others (4 questions), social contacts (4 questions), sexuality (2 questions), and 11 individual questions concerning teeth problems, difficulties with opening the mouth, oral cavity dryness, the presence of thick saliva, coughing, illness awareness, taking painkillers, using food supplements, and losing or gaining weight. Similarly to the core questionnaire, a patient gave one answer to each question, and the answers had a four-degree scale.

All of the scales and single-item measures range 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 / QoL represents a high QoL, but a high score for a symptom scale/item represents a high level of symptomatology/problems.

6. Data Collection and Analysis

Data collection was organized into two parts. The first part gathers information on demographic and clinical characteristics including age, gender, marital status, socio-economic status, site of cancer, stage of cancer, duration of treatment, and type of treatment. The second part gathers information on the quality of life using the European Organization of Research and Treatment of Cancer QOL Head and Neck-35 (EORTC QLQ-H&N-35) questionnaire. Qualitative data was represented as frequency and percentages. Mean and the standard deviation were calculated for quantitative data. Non-parametric tests like the Mann Whitney U test and Kruskal Wallis Test was calculated wherever applicable. Spearman's test was used for correlation. The level of significance was $p<0.05$. A p-value of <0.01 was considered as statistically highly significant.

RESULTS AND DISCUSSION

Table 1: Socio-Demographic Characteristics of patients

Characteristic	Frequency	Percentage
Age in years		
21-40	17	17.70
41-60	50	52.08
≥61	29	30.20
Gender		
Male	62	64.58
Female	34	35.41
Educational Level		
Less than High school	13	13.54
High school graduate	11	11.45
Uneducated	72	75
Marital Status		
Married	83	86.45
Widowed	13	13.54
Employment Status		
Employed	5	5.21
Unemployed	91	94.79
Smoking Habits		
Smokers	19	19.79
Non- smokers	24	25
Abstainers	53	55.2
Alcohol Habits		
Alcoholics	16	16.67
Non-alcoholics	43	44.79
Abstainers	37	38.54

As shown in table 1, the mean age of the patients was 55.18±13.62 years. The age group of 41-60 years is highly affected (52.08%). Males are more affected than their counterparts (64.58%). Uneducated is high in number (75%). Married (86.45%) and unemployed (94.79%) are predominant than their respective counterparts. Smoking abstainers (55.2%) and nonalcoholics (44.79%) are high among the patients

Table 2: Clinical Characteristics of Patients

Variable	Frequency	Percentage
Tumor Location		
Larynx	17	17.7
Hypopharynx	16	16.67
Nasopharynx	13	13.54
Oral cavity	50	52.08
Stage of Cancer (AJCC Cancer Staging Manual 7th edition)		
II	23	23.95
III	59	61.45
IV	14	14.58
Types of treatment		
Radiotherapy	19	19.79
Chemotherapy	13	13.54
Chemo-Radiotherapy	33	34.37
Post Radiotherapy	12	12.51
Post Chemo-Radiotherapy	19	19.79

As shown in table 2, patients suffering from oral cavity type of head and neck cancer are high in number (52.08%). Stage III cancer patients are high in number (61.45%).

Majority of patients are receiving chemo-radiotherapy (34.37%) as the treatment of the disease.

Table-3: Association between age, gender with domains of EORTC QLQ-C30

Domains	Age			p-value	Gender		p-value
	21-40 years	41-60 years	≥60 years		Male	Female	
Global Health Status/ QoL							
Global Health Status/ QOL	60.78±3.17	63.32±2.32	61.49±3.13	0.748	62.36±1.97	62.25±2.86	0.492
Functional Scale							
Physical functioning	84.17±4.50	75.76±3.42	79.68±3.34	0.392	81.42 ±2.69	72.05±3.86	0.008
Role functioning	92.87±3.36	84.18±3.58	87.25±3.32	0.852	89.79±2.04	82.05±4.45	0.133
Emotional functioning	83.63±5.24	85.27±2.67	81.43±3.97	0.847	86.19±2.09	77.7±3.74	0.035
Cognitive functioning	92.82±3.74	86.44±3.02	87.12±2.67	0.782	91.41±2.06	85.44±3.55	0.133
Social functioning	96.11±2.65	94.74±1.72	97.17±1.64	0.835	95.77±1.3	95.14±2.15	0.476
Symptom Scales/ Items							
Fatigue	26.79±5.79	38.44±3.48	36.77±4.09	0.187	34.04±3.19	39.21±3.81	0.129
Nausea & vomiting	17.64±4.62	10.98±2.75	10.34±2.91	0.265	9.43±2	12.74±3.45	0.322
Pain	36.27±7.85	46.33±4.52	38.50±4.61	0.408	41.66±4.06	41.17±4.46	0.448
Dyspnea	11.76±6.35	13.99±4.05	13.79±5.36	0.995	8.06±2.38	17.64±5.67	0.319
Insomnia	27.44±9.14	32.66±5.08	25.28±5.64	0.704	24.19±3.99	36.27±6.35	0.07
Appetite loss	5.88±4.27	19.99±4.76	11.49±5.03	0.408	15.59±3.88	13.72±4.89	0.397
Constipation	23.52±8.93	38.66±5.66	45.97±8	0.228	38.73±5.09	38.23±7.19	0.452
Diarrhea	1.96±1.96	7.33±2.74	3.44±1.9	0.856	4.83±1.68	5.88±3.29	0.401
Financial difficulties	5.88±3.17	11.33±3.1	2.29±1.59	0.412	6.98±2.05	8.82±3.53	0.472

Table-4: Association between specific clinical characteristics with EORTC QLQ-H&N35

Domains	Tumor Location				p-value	Tumor Stage			p-value
	L	HP	NP	OC		II	III	IV	
Symptom Scale/ Items									
Pain	48.03 ±7.77	25.51 ±5.07	36.53 ±9.46	58.99 ±4.64	0.002	36.22 ±6.92	52.39 ±4.16	48.21 ±9.49	0.143
Swallowing	35.78 ±7.78	34.37 ±6.79	24.35 ±7.21	48.66 ±4.63	0.082	38.76 ±6.53	41.24 ±4.12	41.66 ±9.4	0.99
Senses problems	22.54 ±6.99	18.74 ±6.95	43.58 ±10.25	30.77 ±4.44	0.205	18.83 ±5.67	31.16 ±4.05	36.9 ±10.2	0.216
Speech problems	30.71 ±7.35	29.16 ±6.15	11.11 ±4.53	36.21 ±3.98	0.036	24.15 ±4.05	31.33 ±3.49	32.53 ±9.13	0.715
Trouble with social eating	16.82 ±4.67	26.03 ±5.2	12.17 ±4.68	26.99 ±3.56	0.11	17.75 ±4.23	23.49 ±2.92	33.33 ±7.95	0.254
Trouble with social contact	17.64 ±5.2	8.74 ±2.48	14.35 ±5.48	14.19 ±2.85	0.97	8.11 ±2.44	12.59 ±2.24	20.47 ±6.22	0.139
Less sexuality	2.94 ±2.13	4.16 ±2.84	2.56 ±2.56	4.66 ±1.9	0.995	3.62 ±2.08	3.95 ±1.81	7.14 ±3.79	0.767
Teeth	35.29 ±9.4	14.58 ±6.06	15.38 ±8.94	27.99 ±4.6	0.285	27.53 ±7.45	25.42 ±4.28	21.42 ±7.49	0.951
Opening mouth	15.68 ±5.79	4.16 ±2.84	20.51 ±8.88	42.66 ±4.76	0.000	24.63 ±6.36	26.55 ±3.84	40.47 ±11.6	0.574
Dry mouth	58.82 ±10.51	31.24 ±10.3	61.53 ±12.43	61.99 ±5.55	0.111	53.62 ±9.07	62.71 ±5.1	40.47 ±11.6	0.191
Sticky saliva	70.58 ±9.85	64.58 ±9.84	56.4 ±9.53	69.33 ±5.62	0.535	56.52 ±8.79	72.31 ±4.77	54.76 ±11.3	0.182
Coughing	39.21 ±8.68	39.58 ±11.47	5.12 ±3.47	31.33 ±4.8	0.044	36.22 ±7.53	32.2 ±4.69	9.52 ±5.44	0.061
Felt ill	21.56 ±5.67	8.33 ±3.72	5.12 ±5.12	15.99 ±3.71	0.234	8.69 ±3.12	17.51 ±3.45	7.69 ±4.05	0.458
Pain killers	94.11 ±5.88	68.75 ±11.96	93.3 ±7.69	88.31 ±4.64	0.582	73.91 ±9.36	91.52 ±3.65	85.71 ±9.7	0.465
Nutritional supplements	82.35 ±9.53	68.75 ±11.95	84.61 ±10.41	90.29 ±4.28	0.648	78.26 ±8.79	84.74 ±4.72	85.71 ±9.7	0.891
Feeding tube	5.88 ±5.88	12.53 ±8.53	0	0	0.887	8.69 ±6	0	7.14 ±7.14	0.798
Weight loss	94.11 ±5.88	81.25 ±10.07	61.53 ±14.04	78.21 ±5.91	0.499	82.6 ±8.08	77.96 ±5.44	78.57 ±11.3	0.946
Weight gain	5.88 ±5.88	18.75 ±10.07	12.07 ±12.16	14.23 ±4.95	0.861	4.34 ±4.34	18.64 ±5.11	0	0.414

As shown in table 3, the mean scores of physical functioning (81.42±2.69) and emotional functioning (86.19±2.09) was high among males. There was a statistically highly significant association between gender and physical functioning (p=0.008)

and the statistically significant association between gender and emotional functioning (p=0.035). The mean physical functioning (84.17±4.50) and role functioning (92.87±3.36), and cognitive functioning (92.82±3.74) score was high in age groups of 21- 40 years. Table 3 shows high mean scores of symptoms of fatigue, pain, Dyspnea, insomnia, anorexia, constipation, diarrhea and financial difficulties in the age group of 41-60 years patients.

In table 4, there was a statistically highly significant association between tumor location and pain (p= 0.002), opening mouth (p=0.000). There was a statistically significant association between tumor location and speech problems (p=0.036), coughing (p=0.044).

Table 5: Different types of treatment and domains of EORTC QLQ C_30 #

Domain	RT	CT	CRT	POST RT	POST CT+RT	p-value
GHS	33.3 (41.66-66.66)	66.66 (54.16-75)	58.31 (50-75)	79.16 (62.49-83.33)	66.66 (54.16-83.33)	0.012
Physical Functioning	80 (63.5-94)	74 (53.5-83.5)	87 (74-97)	83.5 (57-97)	87 (80-94)	0.365
Role Functioning	100(67-100)	84(50-100)	100(84-100)	100(67-100)	100(92-100)	0.482
Emotional Functioning	84 (71-96)	92(84-100)	84(67-100)	96(84-100)	84(75-100)	0.841
Cognitive Functioning	100(92-100)	84(50-100)	100(84-100)	100(84-100)	100(84-100)	0.425
Social Functioning	100(100-100)	100(100-100)	100(100-100)	100(100-100)	100(83.5-100)	0.810
Fatigue	44.44 (22.22-66.66)	33.33 (11.11-55.55)	44.44 (22.22-55.55)	27.77 (5.55-61.10)	22.22 (11.11-33.33)	0.174
Nausea & vomiting	0 (0-8.33)	16.66 (0-33.33)	0 (0-33.33)	0 (0-0)	0 (0-16.66)	0.072
Pain	50 (16.66-58.33)	33.33 (8.33-58.33)	50 (33.33-83.33)	33.33 (8.33-58.33)	33.33 (8.33-50)	0.132
Dyspnea	0(0-16.665)	0(0-0)	0(0-33.33)	0(0-0)	0(0-0)	0.293
Insomnia	33.33 (0-66.66)	33.33 (0-66.66)	0 (0-49.99)	16.66 (0-33.33)	33.33 (0-49.99)	0.693
Appetite loss	0 (0-16.66)	0 (0-49.99)	0 (0-0)	0 (0-0)	0 (0-16.665)	0.968
Constipation	0 (0-66.66)	33.33 (0-66.66)	66.66 (0-100)	16.66 (0-66.66)	0 (0-49.99)	0.268
Diarrhea	0 (0-0)	0 (0-33.33)	0 (0-0)	33.33 (0-49.99)	0 (0-0)	0.112
Financial difficulties	0 (0-16.66)	0 (0-33.33)	0 (0-0)	0 (0-0)	0 (0-0)	0.541

Scores were represented as Median (IQR)

Table 6: Different types of treatment and domains of EORTC H&N -35#

Domain	RT	CT	CRT	POST RT	POST CT+RT	p-value
Pain	33.33(25-70.83)	25(4.16-66.66)	66.66(37.49-83.33)	45.83(20.83-87.5)	25(16.66-70.83)	0.114
Swallowing	16.66(0-75)	25(4.16-70.83)	58.33(24.99-75)	20.83(0-49.99)	33.33(16.66-54.16)	0.260
Senses	16.66(0-41.66)	16.66(0-58.33)	33.33(0-66.66)	0(0-16.66)	16.66(0-33.33)	0.147
Speech	22.22(5.55-44.44)	22.22 (0-44.44)	33.33 (0-49.99)	27.77 (5.55-44.44)	33.33 (11.11-49.99)	0.828
Social Eating	8.33(0-16.66)	33.33 (4.16-62.49)	25 (8.33-45.83)	8.33 (0-29.16)	16.66 (8.33-20.83)	0.039
Social Contact	6.66 (0-6.66)	13.33 (6.66-29.99)	6.66 (0-26.66)	3.33 (0-23.33)	6.66 (0-13.33)	0.194
Less Sexuality	0(0-0)	0(0-16.66)	0(0-0)	0(0-0)	0(0-0)	0.958
Teeth	0(0-0)	0(0-66.66)	0(0-66.66)	33.33(0-66.66)	33.33(0-66.66)	0.307
Opening Mouth	0(0-33.33)	0(0-66.66)	33.33(0-66.66)	33.33(0-66.66)	0(0-49.99)	0.307
Dry Mouth	66.66 (49.99-100)	0 (0-49.99)	66.66 (0-100)	83.33 (49.99-100)	66.66 (0-100)	0.076
Sticky Saliva	66.66 (16.66-100)	66.66 (16.66-100)	100 (66.66-100)	49.99 (0-100)	66.66 (33.33-100)	0.102
Coughing	33.33(0-66.66)	0(0-16.66)	33.33(0-66.66)	0(16.66-49.99)	0(0-49.99)	0.307
Felt Ill	0(0-33.33)	0(0-0)	0(0-33.33)	0(0-33.33)	0(0-16.66)	0.958
Pain Killers	100(0-100)	100(0-100)	100(0-100)	100(0-100)	100(0-100)	0.152
Nutrition Supplements	100(100-100)	100(100-100)	100(100-100)	100(50-100)	100(100-100)	0.168
Feeding Tube	0(0-0)	0(0-0)	0(0-50)	0(0-0)	0(0-0)	0.149
Weight Loss	100(100-100)	100(100-100)	100(100-100)	100(0-100)	100(0-100)	0.198
Weight Gain	0(0-0)	0(0-0)	0(0-0)	100(0-50)	0(100-100)	0.168

Scores were represented as Median (IQR)

There was a statistically significant association between quality of life and type of treatment (Table 5, p=0.012). However, except for social eating (p=0.032), there was no statistically significant association between type of treatment and functional and symptom scales (Table5 and Table 6).

Table 7: Correlation between different domains of Quality of Life

Domains	Fatigue	Pain	Trouble With Social Contact	Swallowing
Global Health Status	r_s= -0.361 p= 0.000	r_s= -0.301 p= 0.001	r_s= -0.238 p= 0.009	r_s= -0.235 p= 0.01
Social Functioning	r_s= -0.162 p= 0.057	r_s= -0.238 p= 0.009	r_s= -0.342 p= 0.000	r_s= -0.219 p= 0.015
Physical Functioning	r_s= -0.57 p= <0.000	r_s= -0.36 p= 0.000	r_s= -0.266 p= 0.004	r_s= -0.135 p= 0.093
Emotional Functioning	r_s= -0.476 p= 0.000	r_s= -0.448 p= 0.000	r_s= -0.28 p= 0.002	r_s= -0.304 p= 0.001
Opening Mouth	r_s= 0.297 p= 0.001	r_s= 0.469 p= 0.000	r_s= 0.428 p= 0.000	r_s= 0.498 p= <0.000
Pain*	r_s= 0.522 p= <0.000	r_s= 0.712 p= <0.000	r_s= 0.466 p= 0.000	r_s= 0.683 p= <0.000
Social Eating	r_s= 0.261 p= 0.004	r_s= 0.516 p= <0.000	r_s= 0.481 p= 0.000	r_s= 0.602 p= <0.000

DISCUSSION

There were no considerable differences between QOL and age, gender in our study. Palan et al [11] showed that early-stage tumors showed significantly better scores on pain, speech, social eating, teeth problems and dryness of mouth. Milecki et al [12] have demonstrated that the tumor localization, clinical stage, method of treatment, gender, age, education, and smoking have a statistically significant influence on QOL. The analysis of the selected clinical and socio-demographic factors revealed that the location of the tumor in the larynx and hypopharynx was associated with the greatest negative impact on QOL.

Palan et al [11] described that the overall QOL showed no significant difference between the two groups: early-stage tumors (I & II) and late staged tumors (III&IV) on the EORTC QLQ-C30 scale. However, on the symptom scale, there was a significant difference seen in the domains of fatigue, dyspnea and appetite loss on the EORTC QLQ-C30 scale. On the QLQ-H&N35, early-stage tumors had pronouncedly better scores on pain, speech, social eating, teeth problems and dryness of mouth. Kim et al [13] reported many factors such as age, sex, marital status; comorbidity, malnutrition, tumor location, stage, treatment modality, and time of evaluation, etc are known to affect QOL in patients with head and neck cancer. Hanna et al [14] compared between the subgroups of cancer patients at distinct phases of treatment and indicated few significant demographic differences. The subgroups differed in age. De Graeff et al [15] reported that sex differences were seen for many scales and single items of all questionnaires. If there was a significant difference with regard to sex, women consistently reported more complaints and worse functioning.

Milecki et al [12] showed that the difficulties in mouth opening negatively affected the QOL of these patients who had the tumor located in the oral cavity. Statistically significant differences in the comparison of the treatments were produced within the QOL parameters such as functioning in life roles, constipation, and weight loss. Hanna et al [14] showed that there were significant differences on the Opening mouth, Dry mouth, Sticky saliva, felt ill, Nutritional supplements, Feeding tube, and Weight loss. With respect to the core questionnaire (QLQ-C30), there were significant differences on the Physical functioning, Role functioning, Social functioning, Global quality of life and Fatigue. Leemans et al [16] showed that a moderate impact was observed on emotional functioning and fatigue, and a large effect

was observed on the global quality of life (QOL) and social functioning.

Palan et al [11] reported that the Chemotherapy group showed better scores in the areas of speech problems, problems related to social eating and weight gain, whereas the Radiotherapy group showed better scores in the domains of teeth problems and mouth opening. De Graeff et al [15] reported that pain, insomnia, and speech all showed a gradual improvement. The improvement in pain was most pronounced in patients with cancer of the oral cavity/oropharynx (continuing even after 12 months), whereas the improvement in speech occurred only in patients with laryngeal cancer treated with radiotherapy. This is likely because pain and speech problems are symptoms that may be tumor related and may respond favorably to treatment. Mistry et al [17] reported significant differences on the coughing scale, sticky saliva, and feeling of illness, a requirement of nutritional supplements, social functioning, and painkillers. Dehkordi et al [18] indicated a strong correlation between QOL and number of CT cycles in cancer patients.

Mistry et al [17] had reported poorer functioning at the presentation of disease on each of these scales, which persisted until one month after completion of a full course of treatment, likewise, scales of Pain, senses problem, teeth, insomnia, swallowing, speech, social eating, social contact, less sexuality. Furthermore, the development of complaints of nausea-vomiting, diarrhea or constipation remained persistent during treatment. On the evaluation of EORTC QLQC30 in our study, there is a significant difference on the opening mouth, sticky saliva, dry mouth, coughing, feeling of illness, the requirement of nutritional supplements and painkillers while weight loss was not significant. In contrast, no differences emerged on the single-item scale of the requirement of the feeding tube and weight gain, while there was a significant improvement in the dyspnea.

Milecki et al [12] showed that the patients treated with postoperative CRT reported the greatest decrease in body weight, which negatively affected their QOL. Curran et al [19] showed that swallowing and the speech problems' scale affect the QOL. He demonstrated a worsening of QOL during treatment, with a corresponding increase in QOL Post RT. Majchrzak et al [20] reported that the patients treated with postoperative CRT reported the greatest decrease in body weight which negatively affected their QOL. Majid et al [21] stated as for significant changes post-treatment, we observed worsening in the frequency of diarrhea, nausea/vomiting, constipation, and financial difficulty. Fang et al [22] showed higher fatigue scores were found in patients with a lower EORTC global QOL score and lower EORTC functioning scores. Higher fatigue scores also were observed in patients with comorbidity, a more advanced T status, a more advanced AJCC stage, and higher EORTC symptom scores, except for senses and dental problems. Bjordal et al [23] showed that the highest correlations between scales in the core questionnaire and in the module were those between the social function scale in the core questionnaire SF and the social contact scale in the module and between the pain scale in the core questionnaire and the pain scale in the module.

CONCLUSION

There was a statistically significant association between quality of life and type of treatment. In comparison patients who are on post radiotherapy was having high scores of quality of life.

REFERENCES

1. Badia X, Herdman M. The importance of health-related quality-of-life data in determining the value of drug therapy. Clinical Therapeutics. 2001; 23(1):168-175.
2. Schron EB, Shumaker SA. The integration of health quality of life in

clinical research: Experience from cardiovascular clinical trials. Prog Cardiovasc. 1992;7(2): 21

3. Patrick DL, Erickson P. Health status and Health Policy: Allocating Resources to health care. New York. Oxford University Press. 1993:22.
4. Croog SH, Levine S, Testa MA, et al. The effects of antihypertensive therapy on quality of life. N Engl J Med. 1986; 319:1220-1221.
5. Tshering Vogel DW, Thoeny HC. Cross-sectional imaging in cancers of the head and neck: how we review and report. Cancer Imaging. 2016, 16:20. 10.1186/s40644-016-0075-3.
6. The Department of Veterans Affairs Laryngeal Cancer Study Group Wolf GT, Fisher SG, Hong WK: Induction chemotherapy plus radiation compared with surgery plus radiation in patients with advanced laryngeal cancer. N Engl J Med 1991; 324:1685-1690.
7. Wolf G, Hong WK, Fisher SG. Neoadjuvant chemotherapy for organ preservation: current status. In: Shah JP, Johnson (eds): Proceedings of 4th International Conference on Head and Neck Cancer, pp 89-97. Arlington, VA, Society of Head and Neck Surgeons, 1996.
8. Lefebvre JL, Chavalier D, Lubonski B, et al. Larynx preservation in pyriforms sinus cancer: preliminary results of a European Organization for Research and Treatment of Cancer phase IIItrial. J Natl Cancer Inst 1996; 88:890-899.
9. Al-Sarraff M, Leblanc M, Giri PGS, et al. Superiority of chemo-radiotherapy (CT-RT) vs. radiotherapy (RT) in patients with locally advanced nasopharyngeal cancer (NPC). Preliminary results of intergroup (0099) (SWOG 8892.RTOG 8817.ECOG 2388) randomized study. Proceedings of the American Society of Clinical Oncology 1996; 15:313.
10. Al-Sarraf M, Le Blanc M, Giri PGS, et al. Chemo-radiotherapy vs. radiotherapy in patients with advanced nasopharyngeal cancer: phase III randomized Intergroup Study 0099. J Clin Oncol 1998; 16:1310-1317.
11. Palan K, Narayanan P, Pattanshetty S et al. Assessment of Quality of Life in Radically Treated Head and Neck Cancer Patients: A Cross-Sectional Study in a Tertiary Care Setting in Manipal, Udupi. J Immunooncol. 2016; 2:105. doi:10.4172/joi.1000105
12. Żmijewska-Tomczak M, Milecki P, Olek-Hrab K, et al. Factors influencing the quality of life in patients during radiotherapy for head and neck cancer. Archives of Medical Science : AMS. 2014;10(6):1153-1159. doi:10.5114/aoms.2013.34317.
13. Kim TW, Youm H-Y, Byun H et al. Treatment Outcomes and Quality of Life in Oropharyngeal Cancer after Surgery-based versus Radiation-based Treatment. Clinical and Experimental Otorhinolaryngology. 2010; 3(3):153-160. doi:10.3342/ceo.2010.3.3.153.
14. Hanna E, Sherman A, Cash D et al. Quality of life for patients following total laryngectomy vs chemoradiation for laryngeal preservation. Arch Otolaryngol Head Neck Surg. 2004; 130(7):875-9.
15. de Graeff A, de Leeuw JR, Ros WJ et al. Long-Term Quality of Life of Patients with Head and Neck Cancer. The Laryngoscope. 2000;110: 98-106. doi:10.1097/00005537-200001000-00018
16. Langendijk J, Doornaert P, Leemans C et al. Impact of Late Treatment-Related Toxicity on Quality of Life Among Patients With Head and Neck Cancer Treated With Radiotherapy. Journal of Clinical Oncology. 2008; 26(22):3770-3776.
17. Mistry CB, Rana DS, Batra V. Evaluation of Health-Related Quality of Life in Patient with Oral Cavity Squamous Cell Carcinoma Receiving Chemotherapy. Int J Clin Pharmacol Toxicol. 2015; 4(2): 161-168.

18. Dehkordi A, Heydarnejad MS, Fatehi D. Quality of Life in Cancer Patients Undergoing Chemotherapy. Oman Medical Journal. 2009;24(3):204-207. doi:10.5001/omj.2009.40.
19. Curran D, Giralt J, Harari P et al. Quality of Life in Head and Neck Cancer Patients After Treatment With High-Dose Radiotherapy Alone or in Combination With Cetuximab. Journal of Clinical Oncology. 2007;25(16): 2191-2197.
20. Majchrzak E, Szybiak B, Wegner A et al. Oral cavity and oropharyngeal squamous cell carcinoma in young adults: a review of the literature. Radiology and Oncology. 2014;48(1):1-10. doi:10.2478/raon-2013-0057.
21. Majid A, Sayeed BZ, Khan M, et al. Assessment and Improvement of Quality of Life in Patients Undergoing Treatment for Head and Neck Cancer. Muacevic A, Adler JR, eds. Cureus. 2017;9(5):e1215. doi:10.7759/cureus.1215.
22. Fang F, Chien C, Kuo S et al. Changes in quality of life of head-and-neck cancer patients following postoperative radiotherapy. Acta Oncologica. 2004; 43(6):571-578.
23. Bjordal K, Hammerlid E, Ahlner-Elmqvist M et al. Quality of life in head and neck cancer patients: validation of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-H&N35. J Clin Oncol. 1999 Mar;17(3):1008-19.

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