Original Research Article

Quality of life of oral and oropharyngeal cancer patients attending a tertiary care institute in Kolkata

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ABSTRACT

Background: Assessment of quality of life (QOL) helps to find out factors associated with disease progression and response to treatment, identify vulnerable groups. The objective of this study was to assess the QOL (based on physical, mental, social, emotional and spiritual dimensions) of oral and oropharyngeal cancer patients.
Methods: A hospital based cross sectional study was conducted among 126 oral and oropharyngeal cancer patients attending radio therapy department of Calcutta Medical College. QOL was assessed by using validated Bengali version of two self-administered questionnaires: European Organization for the Research and Treatment of Cancer (EORTC)-30 and EORTC-35.
Results: Among total 81 patients, most of the patients (45.67%) had stage III diseases. Median global health score (GHS) for all patients were 41.67. GHS deteriorated with advancement of the diseases (p=0.000), GHS significantly improved with increasing level of education (p=0.019). GHS was poorer among female patients (median for male was 45.66 and for female was 36.45; p=0.178) and patients with oropharyngeal cancer (median for oral cancer was 50.00, oropharyngeal cancer was 41.67, p=0.215). As per EORTC-35, pain was the major symptom for both type of cancer and was more among patients with oropharyngeal cancer.
Conclusions: QOL deteriorates with advancement of the disease and is poorer among females. Co-morbidity status does not affect the QOL. Pain is a major problem of cancer patients, which is more with oropharyngeal cancer patients. Early detection of the cancer and proper pain management and counselling with special focus on females can improve the quality of life.

Keywords: Oral cancer, Oropharyngeal cancer, Quality of life, Global health score, EORTC-30 and EORTC-35, Co-morbidity

INTRODUCTION

Quality of life (QOL) means the degree of satisfaction an individual has, regarding a particular style of life.[1] QOL is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life. It depends on many factors like housing, schooling, working atmosphere, neighbourhood etc. and overall health is an important aspect of QOL.[2] Health related quality of life considers the QOL in the context of health and diseases.[3,4] Health related quality of life is also multidimensional that considers domains related to physical, mental, emotional, and social functioning.[4]

With advancement of medical and public health there are now better treatment modalities of existing diseases, resulting in increased life expectancy both in developed and developing countries. Simultaneously one term that is

'Quality of life' is coming into focus and is especially important for chronic diseases which are of long duration. Assessment of QOL helps to find out the factors associated with disease progression and response to treatment, identifying more vulnerable groups which ultimately can help to strategize planning for better management. The four main types of chronic (non-communicable) diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.[5]

Worldwide, cancer is a leading health problem. Global cancer rates are expected to increase 50% by the year 2020, according to the latest report from the International Agency for Research on Cancer (IARC).[6] Cancer is a leading health problem in India, with approximately 1 million cases occurring each year.[7] Overall, 57.5% of global head and neck cancers occur in Asia especially in India. Head and neck cancer accounted for 30% of all cancers in India.[8] Two of the most common types of cancer that develop in the head and neck region are cancer of the oral cavity (mouth and tongue) and cancer of the oropharynx (the middle of the throat, from the tonsils to the tip of the voice box). The oral and oropharyngeal cancer disturb the appearance (especially oral cancer), ability to chew, swallow, breathe, and talk.[9]

The present study is aimed at evaluating the QOL (based on physical, mental, social, emotional and spiritual dimensions) of oral and oropharyngeal cancer patients and to identify the factors associated with the QOL.

METHODS

It was a hospital based cross sectional study, to assess quality of life among oral and oropharyngeal cancer patients attending radiotherapy department of Calcutta Medical College, for treatment.

Total 81 patients attending radiotherapy department of Calcutta Medical College from January 2014 to June 2014 were interviewed. Oral and oropharyngeal cancer patients of both sexes aged above18 years who were on radiotherapy for less than three weeks were included. Patients who were severely ill or unable to communicate were excluded from this study. The radiotherapy department was visited on every alternate day and all eligible consecutive patients attending the department, who were willing to participate, were interviewed till sample size was reached.

Tool used for data collection was a pre-tested semi-structured self-administered questionnaire that included two pre-designed quality of life (QLQ) questionnaires of European Organization for the Research and Treatment of Cancer (EORTC). Due permission was taken from the EORTC, to use the validated English and Bengali versions of EORTC QLQ-C30 (Version 3.0, latest version) and EORTC QLQ – H&N 35 as study tool.[11]

The EORTC developed a general questionnaire QLQ-C30 to assess the quality of life of cancer patients. It is supplemented by different disease specific modules e.g., breast, lung, head and neck, oesophagus etc. In this study, EORTC-30 and EORTC-35 questionnaires have been used. The EORTC quality of life questionnaire (QLQ) is an integrated system for assessing the health related quality of life (QOL) of cancer patients. The QLQ-C30 is composed of both multi-item scales and single-item measures. The scale includes five functional scales which assess physical function, role (revised role) function, cognitive function, emotional function and social function; three symptom scales; a global health status/QOL scale (GHS); and six single items. Global function status scale reflects overall physical condition and QOL. In this study, GHS was used as measure of QOL to find association between different variables and QOL, as this scale itself expresses the combined status of physical state and QOL

Each of the multi-item scales includes a different set of items-no item occurs in more than one 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 or healthy level of functioning; a high score for the GHS represents a high quality of life. But a high score for a symptom scale/item represents a high level of symptomatology or problems.[6] Hence, for functional scales and global health status scale, 0 means poor and 100 means excellent. On the contrary, for symptom scales and item scales 0 means excellent and 100 means poor.

In this study, socio demographic variables used are age, sex, per capita income and level of education. Stages of cancer, site of the lesion and co-morbidities like coronary heart diseases, diabetes and psychiatric morbidities are considered as biological variables. Variables related to QOL used in this study are Global function (GHS), other functional scales and disease related symptoms. For scoring EORTC, scoring manual was followed. Data was analyzed by using SPSS version 18. As data were qualitative, non-parametric tests viz. Mann-Whitney U test and Kruskal-Walis tests were used to find statistical association between variables.

The study was approved by the Ethics Committee of the Calcutta Medical College, West Bengal. Before taking the interview, written informed consent was taken from individual participants.

RESULTS

Total 81 subjects were interviewed, of which 73 (90.12%) were males and 8 (9.89%) were females. Male: female ratio was 9.12:1. Overall mean age was 57.37 years (SD=12.04, range=28-84 years). Mean age for females was 51.12 (SD=16.12, range=30-70 years) and mean age for males was 58.05 (SD=11.43, range=28-84 years). Mean age of females was lower than that of males.

Table 1: Distribution of subjects according to demographic characteristics.

Age group (in years)	Male	Female	Total (%)
26–35	1	3	4 (4.93)
36–45	7	0	7 (8.64)
46–55	24	2	26 (32.09)
56–65	21	2	23 (28.39)
66–75	17	1	18 (22.22)
76–85	3	0	3 (3.73)

Table 2: Description of the study population.

Parameters	N (%)
Socio-economic characteristics	
Religion	
Hindu	54 (66.66)
Muslim	27 (33.34)
Level of education	
Illiterate/No formal education	12 (14.82)
Primary	44 (54.32)
Secondary	11 (13.58)
More than secondary	14 (17.28)
Per capita income	
250≤1000	50 (61.73)
1000≤1750	19 (23.46)
1750≤2500	6 (7.40)
2500≤3250	2 (2.47)
3250≤4000	1 (1.24)
>4000	3 (3.70)
Social habits (multiple responses)	
Smoking	51 (62.96)
Chewable tobacco	38 (46.91)
Alcohol	13 (16.05)
All	6 (7.41)
None	5 (6.17)
Disease status	
Site of lesion	
Oral	50 (61.73)
Oropharyngeal	31 (38.27)
Stages	
Stage I	15 (18.52)
Stage II	15 (18.52)
Stage III	37 (45.68)
Stage IV	14 (17.28)
Histological classification	
Squamous cell carcinoma	79 (97.53)
Leukoplekia	1 (1.23)
Adenocarcinoma	1 (1.23)
Co-morbidity	
Present	18 (22.22)
Absent	63 (77.78)

The subjects were aged 28-84 years, with majority (32.09%) of subjects belonging to age group of 46-55 years and more than 80% of total subjects were between 46 and 75 years of age. There were no female subjects in the age group 76-85 years (Table 1).

The study population comprised of two-third Hindu (54) and one-third Muslim (21) subjects. Most of the subjects (54.32%) were educated upto primary level which was considered upto class VIII, followed by education higher than secondary level (17.28%). Twelve subjects had no formal education. More than 60% of the study subjects had per capita income in the group Rs.250≤1000, followed by income group of Rs.1000≤1750. Less than 15% subjects had income more than Rs.1750. Only 3 subjects had per capita income above Rs.4000. Tobacco smoking was the most common social habit (62.96%) followed by chewable tobacco (46.91%). Alcohol contributed 16.04%. Six subjects had all three habits while five subjects did not have history of any of the social habits under consideration (Table 2).

Most (61.73%) of the subjects suffered from Oral cancer and majority (45.68%) had stage III disease. Stage IV disease contributed 17.28%. Histologically, 97.53% was squamous cell carcinoma, 1.23% was leukoplekia and 1.23% was adenocarcinoma. Majority of the subjects (77.78%) did not have any co-morbidity (Table 2).

EORTC-30 showed that all of the functional scale scores (median) including global health score were poorer among females except role function (revised) which was better among female, being double that of males. Statistically significant association was present between gender and role function (revised) status at p=0.024. No significant association was present between gender and any other functional scales including GHS. GHS was least among illiterates or those without any formal education, the association being significant at p=0.019. Other values showed no consistent pattern according to educational status. There was no significant association between per capita income and any of the functional scales, including GHS (Table 3).

Global health score and all other functional scale scores except physical and emotional scales scores deteriorated with advancement of the disease. Global health score (p=0.000), emotional scale score (p=0.006), cognitive scale score (p=0.014) and social scale score (p=0.011) were significantly associated with advancement of the disease (Table 3).

According to EORTC-30, scores in all the function scales were higher in oral cancer than oropharyngeal cancer, except for emotional function for which score was higher for orpharyngeal cancer. However, none of the differences were statistically significant. Median scale scores of all symptoms, except constipation, were same (33.33) and were also same for both groups of subjects. Constipation showed higher score for orophharyngeal cancer. In EORTC-35, pain was the major complain for both the groups, being higher in oropharyngeal cancers

(75.00) than in oral cancer (66.67), though the association was not statistically significant. Other major symptoms present were sense problem, speech problem, trouble with social eating and trouble with social contacts. All symptoms other than sense problem and trouble with social contact showed higher scores for Oropharyngeal cancer (Table 4).

In EORTC-30, financial difficulties were mentioned with symptom scales because scoring process was same for both symptom scales and financial difficulties that is higher score reflects poorer QOL. Oropharyngeal cancer patients experienced more financial difficulties (66.67) than Oral cancer patients (33.33). However, no significant difference was present between these two groups (Table 4).

As per EORTC-30, physical function, role function and cognitive function scores were same in subjects with or without co-morbidity. Global health score and social function status were lower among subjects with co-morbidities, while emotional score was higher in presence of co-morbidities. The differences were not statistically significant (Table 5).

According to EORTC-30, all the symptomatic difficulties were exactly same (33.33) and also same among both these two groups. Subjects with co-morbidities had constipation problem, which was not present in any of the subjects without co-morbidities. Diarrhoea was not present in any of the subjects. Study findings showed that patients without co-morbidities faced more financial difficulties with score being double that of subjects with co-morbidities. This association however, was not significant. According to EORTC-35, all the symptom scores were better among patients with co morbidities, though associations were not statistically significant. Scores for less sexuality, opening mouth, sticky saliva and cough were same in both the groups. Pain was the greatest problem in both the groups, followed by trouble with social contacts. None of the subjects in both the groups had any complaint of dry mouth or teeth problem (Table 5).

Table3: Global health score and other functional scale scores (median value) according to socio demographic variables and stage of disease.

Variables	GHS	Phys	Role	Emo	Cog	Soc
Gender						
Male	41.66	66.7	33.33	50.00	66.66	50.00
Female	36.45	42.62	66.66	37.50	50.00	58.33
*P value	0.178	0.109	0.024	0.209	0.081	0.628
Level of education						
Illiterate or no formal education	20.83	67.00	33.33	33.33	50.00	33.33
Primary	50.00	60.00	33.33	66.67	66.67	66.67
Secondary	50.00	67.00	33.33	33.33	50.00	33.33
More than secondary	50.00	67.00	66.67	41.67	66.67	66.67
**P value	0.019	0.325	0.179	0.053	0.062	0.064
Per capita income (in Rs.)						
250<1000	41.67	63.50	33.33	50.00	66.67	50.00
1000 <1750	50.00	67.00	33.33	58.33	66.67	66.67
1750<2500	66.67	67.00	66.67	75.00	66.67	66.67
2500<3250	37.50	43.50	50.00	62.50	50.00	50.00
<4000	33.33	47.33	66.67	41.46	81.33	66.67
**P value	0.310	0.054	0.087	0.063	0.113	0.068
Stages of the diseases						
Stage I	66.66	66.70	66.66	66.66	66.66	66.70
Stage II	45.83	53.33	33.33	62.50	66.66	66.66
Stage III	41.66	66.70	33.33	33.33	66.66	41.66
Stage IV	25.00	66.70	33.33	50.00	50.00	33.33
**P value	0.000	0.479	0.175	0.006	0.014	0.011

*Man-Whitney U test used; **Kruskal Wallis test used.

Table 4: Quality of life based on the site of the lesions.

Scale	Oral (median score)	Oropharyngeal (median score)	*P value
EORTC-30			
Functional scales			
GHS	50.00	41.67	0.215
Physical function	67.00	53.00	0.207

Continued.

Scale	Oral (median score)	Oropharyngeal (median score)	*P value
Role function (revised)	38.33	33.33	0.097
Emotional function	50.00	58.33	0.863
Cognitive function	66.67	66.67	0.763
Social function	58.33	41.65	0.290
Symptoms and financial difficulties			
Fatigue	33.33	33.33	0.441
Pain	33.33	38.33	0.681
Dyspnoea	33.33	33,33	0.580
Insomnia	33.33	33.33	0.334
Appetite loss	33.33	33.33	0.540
Constipation	16.66	33.33	0.842
Financial difficulties	33.33	66.67	0.539
EORTC-35			
Pain	75.00	75.00	0.183
Swallowing	16.66	33.33	0.842
Sense problem	50.00	50.00	0.635
Speech problem	58.33	67.67	0.771
Trouble with social eating	55.56	66.67	0.914
Trouble with social contacts	50.00	50.00	0.818
Opening mouth	33.33	33.33	0.043
Sticky saliva	33.33	33.33	0.245
Coughing	33.33	33.33	0.480
Felt ill	33.33	33.33	0.193

*p values were computed by using Mann-Whitney U test.

Table 5: Quality of life based on the co-morbidity status.

Scale	Without co-morbidity (n=63)	With co-morbidity (n=18)	*P value
EORTC-30			
Functional scales			
GHS	50.00	41.66	0.215
Physical function	66.67	66.70	0.207
Role function (Revised)	33.33	33.33	0.097
Emotional function	50.00	66.67	0.863
Cognitive function	66.67	66.67	0.783
Social function	50.00	41.66	0.290
Symptoms & financial difficulties			
Fatigue, nausea and vomiting	33.33	33.33	0.441
Pain	33.33	33.33	0.681
Dyspnoea	33.33	33.33	0.580
Insomnia	33.33	33.33	0.334
Appetite loss	33.33	33.33	0.540
EORTC 35			
Pain	75.00	66.67	0.124
Swallowing	50.00	41.66	0.183
Sense problem	50.00	33.33	0.635
Speech problem	66.67	44.44	0.771
Trouble with social eating	50.00	33.33	0.914
Trouble with social contacts	66.67	60.00	0.818
Difficulty in opening mouth	33.33	33.33	0.681
Sticky saliva	33.33	33.33	0.334
Cough	33.33	33.33	0.681
Felt ill	41.66	33.33	.193

*p values were computed by using Mann-Whitney U test.

DISCUSSION

Cancer diagnosis itself causes terrible emotional trauma. Cancer patients have to cope with the diagnosis itself and also with the illness and its associated problems. In addition, oral and oropharyngeal cancers disturb swallowing ability, speaking ability, voice, social functions (like social eating, social contacts). Moreover, especially oral cancer distorts the facial image. All these factors have immense effects on QOL. Due to rampant use of smoking and smokeless tobacco, and alcohol, oral and oropharyngeal cancers have currently become very common in India.

The present study inferred that among the patients presenting at the hospital with oral and oropharyngeal cancers, males were mainly predominant and oral cancers were more than oropharyngeal cancers. These cancer patients mainly belonged to low socio economic classes and those with lower level of education. Most of the patients were from age group 44-65 years. Most of the cases were diagnosed in the advanced stages, probably due to low level of proper awareness in our country. Among the social habits, smoking and chewable tobacco were the main associated factors.

Different functional scales including GHS were influenced by different socio demographic and biological variables. This study reflected that all functional scales except revised role function were poorer among females. Reviewed literature varied in their findings, showing poorer QOL among females or better QOL among females.[12-14] Significant association was present between GHS and level of education. GHS was poorer among lesser educated patients. Patients with advanced oral and oropharyngeal cancer had compromised QOL. GHS, physical function and cognitive function significantly deteriorated with advancement of the diseases, which were in accordance with the reviewed literature.[14-16] As different aspects of QOL compromised with advancement of the disease, more emphasis should be given on early diagnosis, which can be facilitated by increasing capacity building of the health personnel (medical officers and peripheral health staff) and strengthening health education to improve public awareness, because signs and symptoms (related to oral and oropharyngeal cancers) like mouth ulcer, hoarseness of voice, odynophagia etc. can be easily detectable. More attention needs to be given to female patients, as well as the poor and lesser educated patients who are likely to have poorer QOL.

As per EORTC observed in the present study, median GHS and all other median functional scale scores (physical function, role function, social function) except emotional function scale, were poorer among oropharyngeal cancer patients. Pain was the major symptom for both oral and oropharyngeal cancers as per EORTC-35, in the present study. Literature reviewed concluded that pain is a major problem experienced by Head and Neck Cancer (HNC) patients.[15] EORTC-35

findings of the present study also showed that between the groups it was worse in those with oropharyngeal cancer. In contrast, reviewed literature found that pain score was significantly worse (p=0.027) for patients with oral cavity tumors as compared to patients with oropharynx tumors.[15] In cancer care, pain management component must be properly taken care of. The management of cancer pain can be improved by better collaboration between the disciplines of oncology, pain medicine and palliative medicine.

GHS and social function scale scores were poorer among patients with co-morbidity. Physical function status was not influenced by co-morbidity status. However, these associations were not significant. Reviewed literature concluded that QOL deteriorates with co-morbidities and patients with one or more co-morbidity conditions scored significantly worse on QLQ-C30 physical functioning and global quality of life.[15,18] From this study it has been noted that most of the symptom scores of EORTC-35 were lower among patients without co-morbidity conditions.

CONCLUSION

From findings of the present study it can be concluded that QOL deteriorates with advancement of the disease and is poorer among females. Co-morbidity status does not affect the QOL. Pain is a major problem of cancer patients, which is more with oropharyngeal cancer patients. Conclusion can be drawn that early detection of the cancer and proper pain management and counseling with special focus on females can improve the quality of life.

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