Research Paper

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Assessment of Pain Severity on Quality of Life of Head and Neck Cancer Patients Before Receiving Anticancer Therapy - A Hospital Based Study in North Karnataka Population

Medical Science

KEYWORDS : Pain; Quality of Life; Cancer; Palliative care

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ABSTRACT

Purpose:. Control of symptoms and pain play a significant role in improving the overall quality of life of head and neck cancer patients., This study was an attempt to assess the influence of intensity of pain on quality of life of cancer patients before receiving anticancer treatments

Methods: A total of 100 confirmed cases of head and neck cancer were interviewed. Intensity of pain was evaluated using the Brief Pain Inventory and the quality of life of patients was evaluated using EORTC QLQ-C30 module..

Results: Kruskal wallis test showed statistically significant correlation between the quality of life and tumour stages. Chi square test also gave significant association between the quality of life and pain.

Conclusion: Appropriate interventions can be instituted at right time along with palliative care to improve the Quality of Life of cancer patients by assessing the quality of life of patients before treatment

Introduction:

Head and neck cancer encompasses a group of tumours involving the lip, oral cavity, nasal cavity, larynx, pharynx and paranasal sinuses. By incidence, it is the sixth leading cancer worldwide and eighth by fatality [1]

Pain is the most burdensome symptom and is one of the most common complaints in a patients suffering from Head and Neck cancer. A systematic review evaluating the prevalence of pain in cancer patients over past 40 years reported high figures in the range of 52-77%. [2]. These figures are in contrast to rapidly increasing research work in the field of pain relief.

Pain is one of the most significant symptoms of cancer patients that affects multiple domains of life ranging from its impact on physical functioning to emotional functioning. It accounts for 30% to 40% of their chief complaints, and is of multifactorial aetiology. [3]. In Head and Neck cancer patients, pain distresses the oral functions and is chief complaint in approximately 58% of the patients awaiting treatment and in 30% of the treated patients [4,5].

The term "Quality of Life" has been used in literature in various ways both as a concept and an instrument of measurement. It includes an assessment of general health, satisfaction, fulfilment, ability to cope, happiness, being in control and degree of independence. [6]

India is a developing nation. Despite the presence of palliative care in Indian subcontinent for more than 20 years ;it has been reported that only less than 3% of cancer patients have sufficient pain relief.

Thus, this study was undertaken to assess the severity of pain and its impact on the quality of life (QoL) in untreated patients with head and neck carcinoma using questionnaire.

Materials and Methods:

The study was carried out in the patients reporting to the outpatient department of K.L.E.V.K.I.D.S and Belgaum Cancer Institute. Ethical clearance was obtained from the institutional review board. A total of 100 histopathologically confirmed head and neck cancer patients were interviewed.

Histopathologically confirmed head and neck cancer patients untreated by surgery, chemotherapy or radiotherapy were included in the study while patients who were receiving, or had completed their course of treatment for cancer, with recurring malignant disease and with compromised physical and mental state which prevented them from answering questions were excluded from the study. Four sites of lesions were considered in the study oral cavity, oropharynx, hypopgarynx and larynx.

Patients were divided into four groups depending on their stage of tumour as follows:-

Group I = Stage I=23 patients
Group II =Stage II=25 patients
Group III =Stage III=25 patients
Group IV =stage IV=27 patients

Questionnaires were administered before the initiation of treatment. Pain was evaluated using "*Brief Pain Inventory (BPI)*" [7] which was validated in the North Indian Population.[8] The BPI is a 11 point scale which is presented horizontally from numbers ranging from 0-10. Patients were asked to rate their pain in the last 24 hours at its *Worst*, *Least* and on *Average.* The pain was then categorized into four groups: No pain (0), Mild pain (1-4), Moderate pain (5-6) and Severe pain (7-8)

The Quality of Life of patients was assessed using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core-30 (EORTC QLQ-C30) version 3.0 [9] which was validated in Indian Population [10].It is a 30 item questionnaire which consists of five functional scale, three symptom scale, six single items and Global Quality of life question.[8]

Patients were asked to answer each question on a 4 point scale ranging from 1-4; corresponding to pain as Not at all (1), A little bit (2), Quite a Bit (3, Very Much (4). Patients were asked to rate the last two items (Global Quality of Life) on a horizontal scale ranging from 1-7. All the scores thus obtained were linearly transformed to be expressed on a scale from 0-100.

All the data was tabulated and non-parametric tests were applied. The data was subjected to Descriptive statistics, Mann-

Whitney and Kruskal – Wallis test.

Results:
100 confirmed head and neck cancer cases were enrolled in the study.. Out of a total 100 patients, majority of patients (67%) had the site of primary tumour in Oral cavity followed by Oropharynx (22 %), Larynx (6%)and Hypopharynx (5%). Lymph node involvement was present in 66% patients.

The Mean scores for all the items on the scale was obtained using the EORTC QLQ-C30 Scoring Manual. Patients in the early stages of tumour scored significantly higher on function scale indicating higher ease in their daily activities. On contrary patients with advanced cancer scored higher on symptom scale indicating hampered quality of life and greater difficulty in doing their day to day work. (Table 1)

Kruskal wallis test showed significant difference in the quality of life and the tumour stages, which was statistically significant .(p value<0.05). i.e. as the tumour stage progressed the quality of life of patients deteriorated. (Table 2)

On applying Mann Whitney test significant differences in the quality of life of patients with lymph node involvement and without lymph node involvement. (p value <0.05) were obtained. Patients with lymph node involvement had greater tendency of nausea, vomiting, diarrhoea and experienced more interference in their daily activities. (Table 3)

Chi square test also gave significant association between the quality of life and pain. (p value<.05). The group of cancer patients without pain had much better scores on all the five function scales (physical, role, cognitive, emotional and social functioning) as compared to the group with pain which had significantly higher scores on symptom scale.

Discussion:
With approximately one million of new cancer cases being added every year in India and 80% of them presenting in advanced stages (stage III and stage IV)[11]the need for pain relief and palliative therapy is imperative.

Patients with oral cancer can be uniquely affected by pain due to the rich neural innervation of oral structures. Patients with oral squamous cell carcinoma at an advanced stage suffer with pain and other sensory disturbances due to interference with oral function and nerve dysfunction. [12] In a retrospective study conducted by Gorsky M et al; 66.5% of oral cancer reported with the complain of localized discomfort within 6 months preceding the diagnosis of cancer([13]

In the present study patients with advanced stage of tumour (stage III and IV) experienced more difficulty in talking, swallowing etc. and poorer quality of life thus indicating a greater need for the institution of pain relief measures. The findings were consistent with the study done by Oliveira KG *et al* [14] who concluded that patients in advanced stages showed higher impairment in their functional status. Similar findings were noted by Connely *et al* [4] .

Inspite of introduction of WHO's step ladder pattern for the management of pain control in cancer patients [15] it has been reported that less than 3% patients in India have an adequate access to pain relief. [16] The reasons for under treatment and inadequate pain relief could be attributed to poor resources, inaccessibility to morphine, misconception about the drugs for pain relief e.g. addiction, opiophobia of patients and communication problems. [15] Also the nature of Cancer pain is not fixed. It has multiple complex aetiologies and is recurring in nature. One of the very important reasons for the inadequate pain relief in cancer patients is that currently no such medication exists for chronic cancer pain that will provide more than 30% relief to the cancer patients.[16] This makes the institution of palliative and support care even more essential.

Conclusion:
Continued efforts are needed to meet the palliative care needs of the patients and overcome various barriers related to successful implementation of palliative care in India. A multidisciplinary approach is recommended to maintain the equilibrium between curative and palliative intervention alternatives.

An assessment of quality of life of cancer patients before treatment will draw the attention of the clinician to the most symptomatic and feared aspect of cancer i.e. pain. Thus appropriate measures for pain relief along with supportive and palliative care can be instituted right from the beginning of the treatment which will greatly enhance the quality of life of cancer patients.

EORTC QLQ C30	Mean	Standard deviation
Global quality of life/QoL	89	11.65
Functional Scale		
Physical functioning	42.3	33.78
Role functioning	44.7	30.96
Emotional functioning	42.8	36.33
Cognitive functioning	42.5	35.78
Social functioning	42.7	35.73
Symptom scale		
Fatigue	58.5	36.04
Nausea and vomiting	58.3	36.12
Pain	59.5	33.5
Dyspnea	54	30.98
Insomnia	59.3	37.77
Appetite loss	59	36.95
Constipation	58.6	37.64
Diarrhea	56.7	36.23
Financial difficulties	55	36.81

Table 1. Descriptive analyses of the EORTC QLQ C-30

EORTC	T1	T2	T3	T4	P value
Physical Functioning	83.3(8.59)	75.2(13.26)	23.5(5.20)	12.8(5.20)	<.001
Emotional Functioning	87.5(8.59)	75.2(13.26)	23.5(5.20)	12.8(5.20)	<.001
Role Functioning	76.8(10.93)	69.3(13.33)	26.7(15.95)	11.1(13.07)	<.001
Cognitive Functioning	81.1(15.33)	71.13(13.33)	20.6(16.85)	3.1(8.05)	<.001
Social Functioning	81.9(16.60)	70.00(12.72)	21.3(17.02)	3.7(9.62)	<.001

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EORTC	T1	T2	T3	T4	P value
Global QoL	80.40(10.83)	79.3(7.76)	96.6 (6.60)	98.1 (5.37)	<.001
Fatigue	17.8 (14.88)	30.2(11.78)	81.3 (15.62)	98.3 (5.06)	<.001
Nausea and vomiting	18.1(16.61)	30(12.72)	80 (14.43)	98.7 (6.41)	<.001
Pain	24.6(11.08)	31.3 (11.09)	81.3 (17.55)	95.1 (11.14)	<.001
Dyspnea	20.3 (21.87)	34.6 (11.71)	80 (19.24)	76.5 (15.51)	<.001
Insomnia	15.9 (19.77)	32(11.71)	85.3(19.43)	97.5 (8.89)	<.001
Appetite loss	17.4 (17.02)	32 (15.15)	81.3(19.43)	98.7 (6.41)	<.001
Constipation	17.4 (17.02)	24.3 (14.65)	82.719.53)	98.7 (6.41)	<.001
Diarrhea	15.9 (17.02)	30.7 (13.33)	77.3 (18.52)	96.3 (10.67)	<.001
Financial difficulties	15.9 (17.02	26.7 (16.66)	77.3 (18.55)	93.8 (13.39)	<.001

Table 2. EORTC QLQ-C30 Scales and tumor size(in accordance with TN

EORTC	Lymph node involvement present	Lymph node involvement present	P value
Physical Functioning	31.6 (25.99)	83.5 (17.18)	<.001
Emotional Functioning	25.5(28.13)	79.7 (21.05)	<.001
Role Functioning	31.1 (26.53)	73.4 (16.85)	<.001
Cognitive Functioning	25.9 (28.55)	77.6 (20.56)	<.001
Social Functioning	25.9 (28.12)	78.1 (20.92)	<.001
Global QoL	92.6 (10.53)	81.2 (10.15)	<.001
Fatigue	75.5 (28.63)	22.5 (20.55)	<.001
Nausea and vomiting	75.2 (28.72)	22.4 (20.57)	<.001
Pain	74.5 (28.13)	27.6 (17.25)	<.001
Dyspnea	68.6 (23.66)	22.9 (19.74)	<.001
Insomnia	77.4 (29.04)	20.8 (21.99)	<.001
Appetite loss	75.9 (29.84)	22.9 (21.48)	<.001
Constipation	75.9 (30.39)	21.8 (21.36)	<.001
Diarrhea	73 (29.51)	21.8 (21.36)	<.001
Financial difficulties	71.5 (30.07)	19.8 (22.13)	<.001

Table 3. EORTC QLQ-C30 Scales and Lymph Node Involvement

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