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QUALITY OF LIFE EVALUATION OF LOCALLY ADVANCED HEAD AND NECK CANCER PATIENTS RECEIVING CONCURRENT CHEMORADIOTHERAPY.

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ABSTRACT

Background : Squamous-cell cancers of the head and neck with advanced primary lesions, with or without regional lymph-node metastases, are challenging to treat effectively while maintaining the function of vital healthy structures. Most of the head and neck cancers in India present at a locally advanced stage. Patients with locally advanced cancers have poor quality of life due to the disease itself affecting speech, swallowing, and pain. Treatment also affects the quality of life of these patients. The main factors affecting the quality of life include pain, swallowing, senses, speech, social eating, social contacts, and the more general domains of physical, mental and social determinants of life.

Materials and Methods: In this prospective study 15 patients of Locally advanced Head and Neck cancer patients who received Concurrent Chemoradiotherapy were evaluated with EORTC QLQC-30 and QLQ-H&N35 questionnaires for determination of Quality of Life at four time points i.e before commencement of Radiotherapy (RT), at the completion of RT, at 1 month follow up and at 2 month follow up. The Mean Scores were compared using standard statistical Software.

Results: The analysis of QOL showed that patients in had decreased QOL during the chemoradiotherapy treatment and reached baseline for most of the function scales and symptom scales at 1 month follow up, and the same trend continued even at 2nd month follow up. However there was no statistical difference for most of the parameters except pain at 1st month follow-up (p=0.04)and swallowing at 2nd month follow up(p=0.03).

KEYWORDS : Head and Neck Cancer, Chemoradiotherapy, Quality of Life.

I. INTRODUCTION

Cancer is one of the leading causes of death worldwide. Head and neck cancer is the leading cancer in India and is linked mainly to tobacco chewing and smoking[1]. Squamous-cell cancers of the head and neck with advanced primary lesions, with or without regional lymph-node metastases, are challenging to treat effectively while maintaining the function of vital healthy structures. Extensive surgical resection of the primary tumor and regional cervical lymphatics used to be the standard of care. More recently, additional organ preserving strategies using either radiation alone or chemoradiotherapy has become a treatment option for these patients, and have been the focus of many investigations. Most of the head and neck cancers in India present at a locally advanced stage. Radiotherapy has long been the standard non-surgical therapy for locally advanced disease. Optimization of cure along with organ preservation and reduction of toxicities are the important aspects in treating locally advanced squamous cell carcinomas of head and neck. Many fractionation regimens including conventional once daily treatments, hyper-fractionation, concomitant boost and accelerated fractionation have been used. Even the most effective radiotherapy regimens when used alone resulted in a local control rates of 50% to 70% and disease free survivals of 30% to 40%. This led to investigations to explore chemotherapy with radiotherapy.

Patients with locally advanced cancers have poor quality of life due to the disease itself affecting speech, swallowing, and pain. Treatment also affects the quality of life of these patients. The main factors affecting the quality of life include pain, swallowing, senses, speech, social eating, social contacts, and the more general domains of physical, mental and social determinants of life.

II. MATERIAL AND METHODS

The study population consisted of 15 patients of locally advanced head and neck cancers who underwent treatment from the department of Radiotherapy at Rangaraya Medical College, Kakinada.

Inclusion Criteria:-

a) Histopathologically confirmed locally advanced non-metastatic Squamous cell carcinomas of head and neck
b) Age less than 75 years
c) ECOG performance status of 0-2.
d) Haematological parameters with total leukocyte count of >4000cells/mm^3, platelet counts of >1.5 lakh/mm^3
f) Renal parameters with Serum creatinine <1.5 mg/dL.
g) Any co-morbid condition or acute infection where treatment is contraindicated.

Exclusion Criteria:-

a) Tumors of non-squamous histology.
b) Age greater than 75 years.
c) Performance status ECOG PS >2.
d) Any prior treatment received for the tumor.
e) Patients with abnormal cardiac function, renal, haemotological parameters or co-morbid illness.
f) Patients who do not give an informed consent.
g) Patient not likely to be available for follow up.

Full medical history and physical examination was done followed by Local examination as initial clinical assessment of tumor stage. Endoscopic assessment of site, nature and extent of the disease was done for all patients.

Diagnostic workup consisting of hemoglobin, total and differential WBC count, platelet count, renal function tests (Urea, Creatinine, 24hours urinary creatinine clearance), liver function tests (Bilirubin-total, direct and indirect, SGOT, SGPT, Alkaline phosphatase, Total serum protein, Albumin and Globulin levels), X ray chest PA view, Radiological assessment with a CT scan for site and extent of the disease, Assessment of ECOG performance score. Was done for all patients.

All the patients were treated in a supine position and properly immobilized by a thermoplastic cast (orfit cast). Patients underwent a pretreatment CT simulation with the immobilizing thermoplastic cast. Serial axial images with slice thickness of 3mm were obtained and these images were transferred to the planning system, where following image acquisition, the target volume and critical organs were contoured. The Gross Tumor Volume (GTV) included the areas of tumor visualized clinically and radiologically on the CT images. The Clinical Target Volume (CTV) was defined depending on the site and nature of the tumor. The planning target volume (PTV) was generated by adding a 5 mm margin around the CTV. Patients received 70 Gy/35 fractions over 7 weeks:

Phase 1: 54 Gy/27 fractions, 5 fractions per week to volume comprising the gross disease with extension and the nodal areas at risk.

Phase 2: 16 Gy/8 fractions, 5 fractions per week to the boost volume, which included the gross tumor volume with margin.

Baseline Quality of life (QOL) was assessed in all patients using the EORTC QLQ-C30 and the EORTC –H&N35 questionnaires. After completion of treatment, patients were followed up as initially on the

date of completion of treatment. First follow up was done at 4 weeks from the completion of treatment. Second follow up at 8 weeks from the completion of treatment. Patients were assessed for acute toxicity, tumor response and QOL based on Symptom history, Quality of life assessment using the EORTC QLQ- C30 and EORTC QLQ-HN35.Local examination using inspection, palpation and indirect laryngoscopy to assess mucosal integrity, skin integrity, tumor and nodal status including bi-dimensional measurement of the tumor and the nodal site CT scan at second follow up visit to know tumor and nodal response. Patients were also encouraged to visit earlier if new or progressive symptoms developed. All patients were encouraged to adhere to the prescribed regimen for good oral hygiene and abstain from any form of tobacco. Locoregional tumor response evaluation was done at 4 weeks and 8 weeks using the WHO criteria which has Assessment of quality of life was done at completion of treatment, and at 4 weeks and 8 weeks after completion of treatment using the EORTC QOLC30 and EORTC HN35 questionnaires.

Quality of life assessment was done at completion of treatment, 4 weeks and 8 weeks follow up using EORTC QLQ-C30 and EORTC QLQ- H&N35 and was compared with the baseline QOL scores in all patients.

III. RESULT

Median age of the patient population was 48 years, age ranging 36-71 years and male to female ratio was14:1.

Table 1: Patient Characteristics Distribution

NO OF PATIENTS	15
MEDIAN AGE (years)	48
AGE RANGE (years)	36-71
MALE: FEMALE	14:1
ECOG PS1	14
ECOG PS2	1
STAGE	
III	10
IVA/IVB	5
HISTOLOGY	
GRADE 1	9
GRADE 2	4
GRADE 3	2

Quality of life:

Almost all the patients affected by head and neck cancers have a poor quality of life attributed both due to the disease as well as the treatment related morbidity. QOL assessment forms a very important tool now a days to measure and compare different treatment modalities of same efficacy. There are different methods to measure the QOL. In this study EORTC QLQ-C30 and EORTC QLQ- H&N35 questionnaire was used.

The impact of the treatment on the patients' QOL was evaluated by comparing the QOL scores at baseline, completion of RT, 1st month and 2nd month after completion of treatment. The analysis of QOL showed that patients in had decreased QOL during the chemoradiotherapy treatment and reached baseline for most of the function scales and symptom scales at 1 month follow up, and the same trend continued even at 2nd month follow up. However there was no statistical difference for most of the parameters except pain at 1st month follow-up (p=0.04) and swallowing at 2nd month follow up(p=0.03).

Table no 2 : QOL scores based on EORTC QLQ-C30 and QLQ - H&N35 during treatment and at followup.

	Pre RT	Completion Of RT	1st Month Follow up	2nd month Follow up
QLQC-30				
Global Health Score	38.05	54.44	58.96	68.96
Physical Function	81.90	58.15	70.61	87.8
Role Function	76.8	63.67	74.54	86.8
Emotional Function	64.02	55.14	74.08	86.8
Cognitive Function	76.8	79.2	84.67	91.2
Social Function	77.86	63.5	75.70	84.55
Pain	53.30	68.6	32.76	25.52
QLQ-H&N35				
Swallowing	40.71	59.97	22.76	6.6
Senses	14.42	40.7	21.37	13.53
Speech	34.92	60.83	27.70	12.84
Social eating	33.6	56.94	26.11	14.78
Social Contact	14.20	38.9	24.19	15.97
Sexuality	34.92	60.83	27.70	12.84

DISCUSSION

The treatment of locoregionally advanced head and neck cancers has undergone a paradigm shift over the past three decades, with management strategies changing from surgery or radiation therapy as single modality to combined modality treatment. Robust and mature data from various randomized studies and a meta-analysis have shown the superiority of concurrent chemoradiation in locoregional control and overall survival. Although adopted as a standard treatment approach in most Western countries, the risk-benefit ratio of concurrent chemo-radiotherapy leaves much to be desired, especially in the context of increased acute toxicities, which may be a significant issue with compliance and treatment tolerability in an undernourished population with inadequate infrastructure and poor support systems. Although improved outcomes have been shown, it is not surprising that these schedules may actually lead to increased morbidity and mortality in both selected and unselected patients when translating them into community practice.

Almost all the patients affected by head and neck cancers have a poor quality of life attributed both due to the disease as well as the treatment related morbidity. QOL assessment forms a very important tool now a days to measure and compare different treatment modalities of same efficacy [2,3]. There are different methods to measure the QOL. In this study EORTC QLQ-C30 and EORTC QLQ- H&N35 questionnaire was used.

Baseline pretreatment QOL was measured, and the impact of the treatment on the patients' QOL was evaluated by comparing the QOL scores at baseline, completion of RT, 1st month and 2nd month after completion of treatment. The analysis of QOL showed that patients had decreased QOL during the chemoradiotherapy treatment, and the QOL scores reached baseline for most of the function scales and symptom scales at 1 month follow up, and the same trend continued even at 2nd month follow up. However there was no statistical difference for most of the parameters except pain at 1st month follow-up and swallowing at 2nd month follow up. This was due to small sample size.

CONCLUSION

Patients have decreased QOL during the chemoradiotherapy treatment, However QOL scores reached baseline for most of the function scales and symptom scales at 1 month follow up, and the same trend continued even at 2nd month follow up.

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