

ASSESSMENT OF QUALITY OF LIFE IN HEAD AND NECK CANCER PATIENTS IN PRE AND POST CHEMORADIATION AND PHARMACEUTICAL MANAGEMENT: A PROSPECTIVE OBSERVATIONAL STUDY**Meghavath Swetha Bai^{*1}, Sugguna Tanuja¹, Tamma Hemanth Kumar Reddy¹, Dr. G. Durga Prasad², Dr. A. Satish Kumar³, Dr. N. V. Rama Rao⁴ and Dr. Rama Rao Nadendla⁵**¹Pharm D. Interns.²Professor and HOD, Dept. of Radio Therapy.³Associate Professor, Dept. of Radiotherapy.⁴Associate Professor and HOD, Dept. of Pharmacy Practice.⁵Principal, Chalapathi Institute of Pharmaceutical Sciences.***Corresponding Author: Meghavath Swetha Bai**

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ABSTRACT

Head-and-Neck Cancers (HNCs) account for 30% of all cancers observed in India. Head and Neck Cancer includes those cancers originating in the Oral Cavity, Pharynx (nasopharynx, oropharynx or Hypopharynx), nasal cavity, paranasal sinuses, salivary glands and larynx. Combined multimodality treatment plan including surgery, Chemotherapy and radiation has increased disease control for locally advanced HNC. HNC arises in Structurally Complex and functionally important areas and interfere with basic functions like eating, speech, swallowing, breathing. Head and Neck Cancer has profound psychosocial and physical effects on Patients quality of life (QOL). "Health-related QOL" (HRQOL) is a more specific area of QOL that mainly deals with impact of the disease and its treatment related morbidities on patients physical, psychological, and Social aspects. The purpose of this Study was to assess the impact of Quality of life of Patients with Head and Neck Cancer in pre and post Chemoradiation.

KEYWORDS: Quality of life (QOL); EORTC; Health related quality of life (HRQOL); Head and neck cancer (HNC).

INTRODUCTION

Head and Neck Cancer is the most Common cancer of all Cancers present in India and Consists of about one-third of all Cancers. According to Indian Council of Medical Research (ICMR), Nearly 0.2 to 0.25 million new HNC patients are being diagnosed with HNC diagnosed per year. The QOL has become increasingly important in patient treatment, particularly in oncology. Health related Quality of life (HR-QOL) plays a important role in HNC patients than in any other group of cancer patients. Quality of life is a multi -dimensional Concept which includes domains related to Physical, Emotional, Social functioning and mental status. To assess the QOL of patients affected by HNC it is important to Understand the impact of disease and its treatment in patients daily routine and also to improve the care protocol with more encompassing clinical, Social and rehabilitation support measures. Patients with HNC have to deal with impact of Treatment on Numerous aspects of QOL including functional disturbances such as speech, swallowing, hearing, associated with social interaction, which has a crucial role in the individuals life. Several QoL domains are immensely affected by the treatment regimens for

head and neck cancer patients. For head and Neck Cancer (HNC), the principle domains to achieve are mainly survival with improvement of QOL.

Treatment may be Carried out by means of Surgery, Chemotherapy or a Combination of These modalities. Radiotherapy, with or without chemotherapy may Cause transient side effects, which may subside at the end of the Treatment. Concurrent chemo radiation remains the standard of care, in the Treatment of patients with loco-regionally advanced head and neck cancers. In addition, tumor site may need for surgical resections which may cause changes in appearance, body image and emotional impacts in patients. This clinical scenario was accentuated by presence of symptoms like xerostomia, dysgeusia, oral mucositis, pain and dysphagia probably as a treatment plan result. This set of Changes can have impact on health- related Quality of life changes (HRQOL) of these patients.

Head and neck cancer and its treatment can have a profound impact on some of the most fundamental functions of life. These patients have Unique Challenges

including difficulties with eating, speech, pain, and emotional distress.

MATERIALS AND METHODS

- **Study Place:** Department of Radiation oncology, Government General Hospital, Guntur.
- **Period of Study:** 6 months
- **Study Design:** Prospective observational study
- **Sample size:** A total of 80 Patients who were suffering with head and neck cancer and were advised for routine follow up in department of radiotherapy was chosen.

MATERIALS USED

- Patient consent form
- Patient data collection form
- Patient Quality of Life assessment questionnaire.
- Patient information leaflet.

Subject Recruitment Criteria

INCLUSION CRITERIA

- Patients whose origin of cancer (primary lesion) involved in head and neck.
- Patients who are diagnosed with head and neck cancer.
- Patients who are on chemotherapy and radiation therapy of head and neck cancer.
- Patients with age > 18 years.
- Those who are able to understand English or local language.
- Patients who concerned to participate in the study.
- Patients who are willing for regular follow up.

EXCLUSION CRITERIA

- Patients whose origin of cancer is other than head and neck cancer.
- Patients with age < 18 years.
- Female patients with pregnancy and lactation.
- Patients who are extremely ill and unable to answer.
- Patients with no valid informant.
- Patients with past history of psychiatric disorders.

RESULTS

Table 1: Sociodemographic Factors.

S.NO	COMPONENTS	FREQUENCY
1.	GENDER	
	Male	67(83.75%)
	Female	13(16.25%)
2	AGE	
	21-30 years	5
	31-40 years	13
	41-50 years	18
	51-60 years	24
	61-70 years	14
	71-80 years	5
	81-90 years	1
3.	SOCIOECONOMIC STATUS	
	Low	60(75%)
	Moderate	16(20%)

STUDY PROCEDURE

The study was conducted after getting approval from the Institutional Human Ethics Committee and informed consent from patients. Then patients were screened based on inclusion and exclusion criteria. Patients who satisfy inclusion criteria were included in the study. After included the subjects into the study the data was collected in the designed validated data collection form. The self designed and validated questionnaire was used to assess the Quality of life in head and neck cancer patients which consist of 51 questions which represents the difference between the past and present health status of patient. The collected data was tabulated and interpreted using suitable statistical software.

After completion of treatment, patients were followed up as outlined below:

- First follow up was done at 4 weeks(1month) from The Completion of treatment.
- Second follow up at 12 weeks (3months) from the completion of treatment.
- Patients were assessed for Changes in Quality of life using EORTC QLQ-HN35 Scale.
- CT Scan at second follow up visit to know tumor and nodal response
- Patients were also encouraged to visit earlier if any new or progressive symptoms developed. All Patients were encouraged to adhere to good oral hygiene and abstain from any form of Tobacco.
- Only patients who completed EORTC QLQ-HN35 on all the 5occasions (before treatment, 4th week of treatment, just on completion of treatment, month post treatment and 3months post treatment) were considered for analysis.

STATISTICAL ANALYSIS

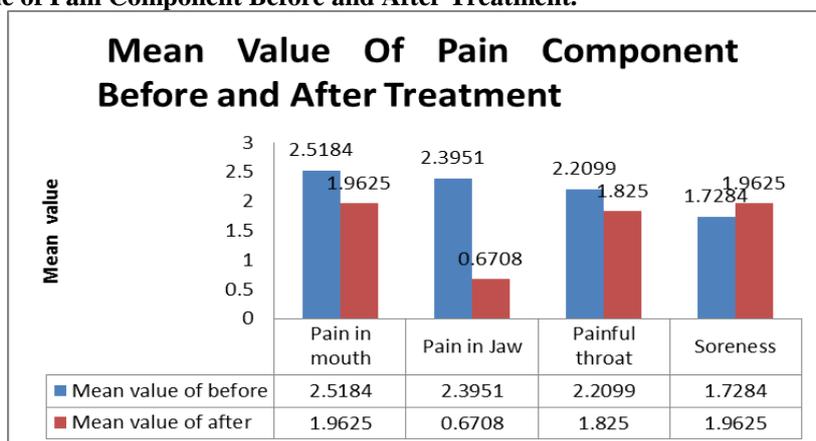
The data obtained was entered in advanced Microsoft excel spread sheet and evaluated. For statistical analysis, Epi info 3.5.1 version was used and Chi-square test as done with the 95% confidence interval at alpha value 0.05 and the p-values < 0.05 are considered to be significant.

	High	4(5%)
4.	OCCUPATION	
	Government employee	3(3.75%)
	Business	16(20%)
	Farmer	29(36.25)
	Private	26(32.5%)
	House wife	6(7.5%)
5.	FAMILY HISTORY OF CARCINOMA	
	YES	1(1.25)
	NO	79(98.75%)
6.	HOSPITALISATION HISTORY	
	YES	5(6.25%)
	NO	75(93.75%)

In a sample of 80 patients taken, 67 are males(83.75%) and 13 are females (16.25%) with the mean age of 20-80yrs belonging to low socioeconomic status 60 (75%), moderate 16(20%), high 4 (5%) with the occupation of

farmer 29 (36.25%), private 26 (32.5%), business 16 (20%), house wife 6 (7.5%), government employ 3(3.75%) having 1 subject with family history of carcinoma.

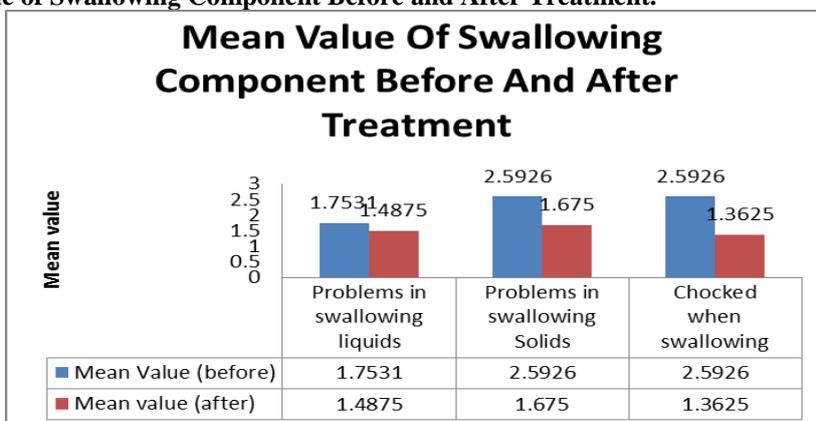
Table 2: Mean Value of Pain Component Before and After Treatment.



In fig 2, Subjects suffering with pain in jaw [before - 2.3951 and after- 0.6708] has shown more improvement in quality of life when compared to patients suffering with pain in mouth [before - 2.5184 and after -1.9625] &

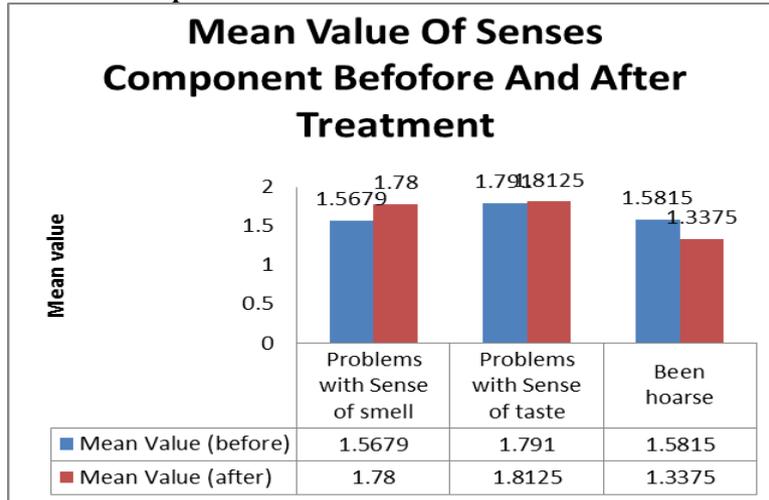
throat [before -2.2099 and after 1.8225]. Incase of patients suffering with soreness [before- 1.7284 and after- 1.9625] decreased quality of life is observed.

Table 3: Mean Value of Swallowing Component Before and After Treatment.



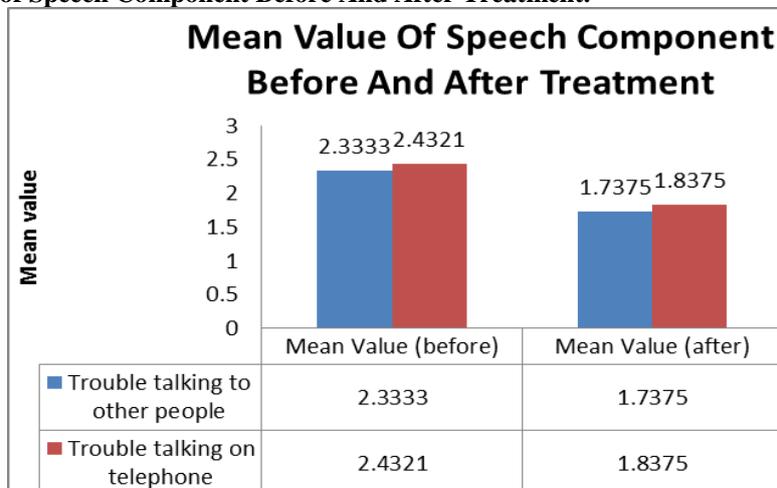
In fig 3, Subjects suffering with choked when swallowing [before- 2.5926 and after- 1.3625] has shown more improvement in quality of life when compared to

subjects who are having problems in swallowing solids [before- 2.5926 and after- 1.675] & liquids [before- 1.7531 and after-1.4875].

Table 4: Mean Value Of Senses Component Before And After Treatment.

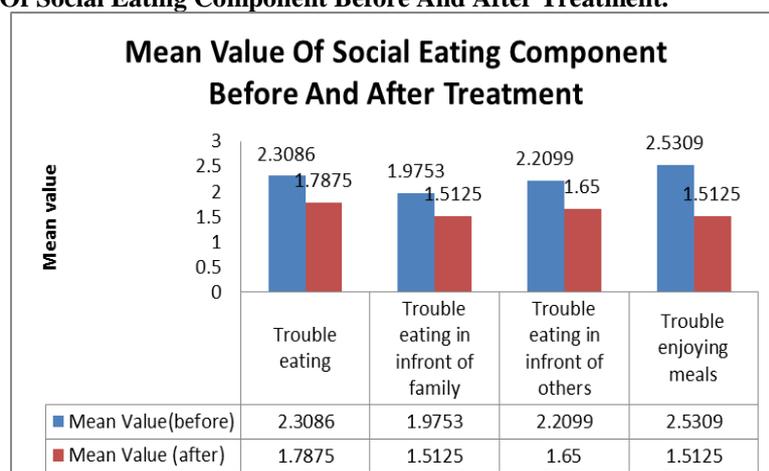
In fig 4, Subjects who have the problems with sense of taste [before- 1.791 and after- 1.8125] and smell [before- 1.5679 and after- 1.78] have shown reduced quality of

life. But -in case of hoarseness [before- 1.5815 and after- 1.3375] subjects have shown improvement in quality of life.

Table 5: Mean Value of Speech Component Before And After Treatment.

In fig 5, Patients who are having trouble talking to other people [before- 2.3333 and after- 1.7375] and on

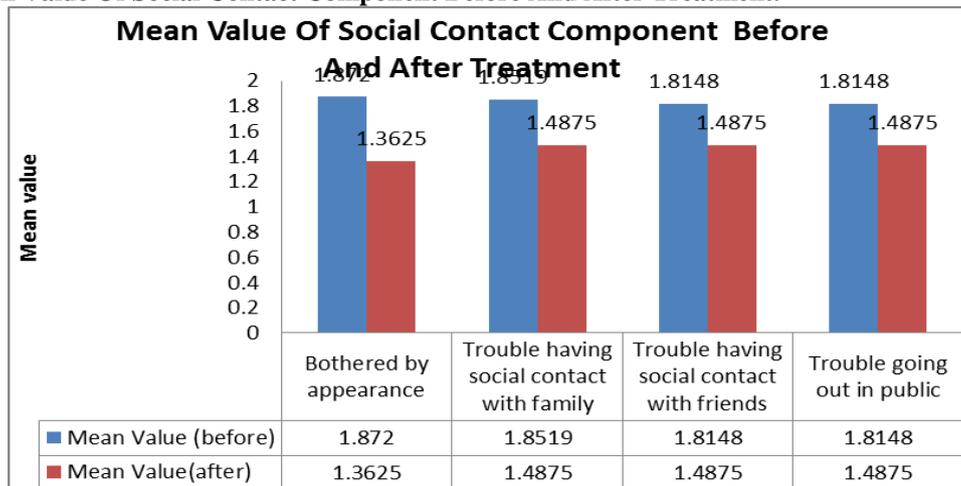
telephone [before- 2.4321 and after- 1.8375] have shown reduced quality of life,

Table 6: Mean Value Of Social Eating Component Before And After Treatment.

In fig 6, Patients who have trouble in social eating has shown improved quality of life in parameters of trouble eating [before-2.3086, after-1.7875], Trouble eating in

front of family [before-1.9753 after-1.5125], Others [before-2.2099, after-1.65] after the treatment when compared with quality of life before the treatment.

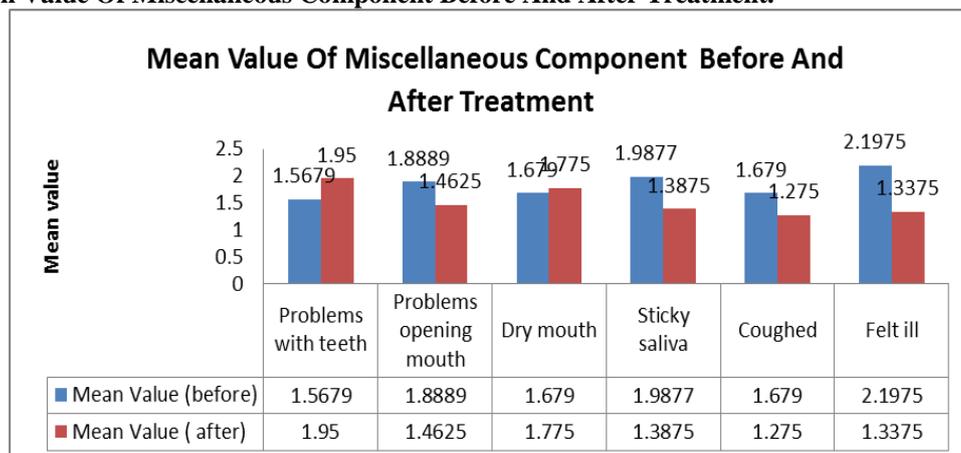
Table 7: Mean Value Of Social Contact Component Before And After Treatment.



In fig 7, Patients who are having trouble in social contact with family [before- 1.8519 and after- 1.4875] and friends [before- 1.8148 and after- 1.4875] has shown improved quality of life and Subjects who are having

trouble going out in public [before- 1.8148 and after- 1.4875] & bothered by appearance [before- 1.872 and after- 1.3625] has shown decreased quality of life.

Table 8: Mean Value Of Miscellaneous Component Before And After Treatment.



In fig 8, Patients having problems with teeth [before- 1.5679 and after- 1.95] and drymouth [before- 1.679 and after- 1.775] have shown reduced quality of life whereas parameters that showed increased quality of life are felt ill [2.1975 and after- 1.3375], sticky saliva [before- 1.9877 and after- 1.387], coughed [before- 1.679 and after- 1.27] problem in opening mouth [before- 1.8889 and after- 1.4625].

DISCUSSION

A prospective observational study was carried out on "Assessment of quality of life in head and neck cancer patients in pre and post chemoradiation and pharmaceutical management" conducted at NATCO Cancer Center Government General Hospital, Guntur. A total of 80 patients with head and neck cancer met the inclusion criteria and were included in the study.

To the best of our knowledge, this study is to associate the clinical aspects of head and neck cancer with quality of life using EORTC QLQ H & N 43 questionnaire.

The demographic data showed that head and neck cancer is more common in the males 67 (83.75%) when compared to females 13 (16.25%). For the assessment of results we categorised the obtained patients within the age of 21-90 years were as follows. In our study with we found that majority of the patients were under the age group of 51-60yrs : 24 (30%), 41-50yrs : 18 (22.5%) followed by 61-70yrs :14 (17.5%), 31-40yrs :13(16.25%),21-30yrs : 5 (6.25%), 71-80yrs :5 (6.25%), 81-90yrs: 1(1.25%).

In our study we found subjects with low socioeconomic status 60 (75%), moderate socioeconomic status 16 (20%)

and high socioeconomic status 4 (5%). Our study showed an increased risk in those people belonging to low socioeconomic status, which might be a reason for emotional instability and hence, resulting in increased psychological stress.

In this study the occupation of subjects are such as farmer 29 (36.25%), private 26 (32.5%), business 16 (20%), house wife 6 (7.5%), government employ 3(3.75%) and the association of family history in head and neck cancer patients was assessed. In our study, subjects presenting without family history of cancer 79 (98.75%) are more when compared with subjects presenting with family history1(1.25%).

site of cancer tongue 16 (%), buccal mucosa 11 (%), hypopharynx 8 (%), supraglottis 5(%), neck 4 (%), larynx3 (%), tonsil 3 (%), oropharynx 2 (%), mouth 2 (%), parotid 2 (%) pyriform sinus 2 (%), lip 1(%), RMT 1(%), hard palate 1(%), soft palate 1(%), mandible 1(%), maxilla 1(%).

In our study, we observed risk factors associated with head and neck cancer patients include smokers: 45(56.25%), non- smokers: 35(43.75%), with the history of smoking 1- 10 yrs : 16(20%), 11-20yrs: 19(23.75%), 21-30yrs: 3(3.75%); alcoholics: 41(51.25%), non-alcoholics: 39 (48.75%) with history of drinking alcohol 1-10 yrs: 18 (43.9%), 11-20yrs: 13(31.70%), 21-30yrs: 1 (2.43%) and abuse of substance - 30(37.5%) including Kainee- 13(43.33%), Ghutka- 5 (16.66%), Paan- 5 (16.66%), Chutta - 4 (13.33%) and factor of exposure to sunlight 1-5hrs : 30 (37.5%), 6-10hrs: 40(50%), 11-17hrs: 10 (12.5%); radiation 3 (3.75%) 77 (96.25%); preserved salt foods 57(71.25%) 23(28.75%).

In our study we observed that the quality of life has improved in the parameters related to pain (before treatment- 2.213; after treatment-1.6052), swallowing (before treatment- 2.3128; after treatment- 1.5083), speech(before treatment- 2.3827; after treatment-1.7875), social eating(before treatment- 2.2562; after treatment- 1.6156), social contact(before treatment-1.8384; after treatment- 1.4563), sticky saliva(before treatment- 1.9877; after treatment- 1.3875), cough(before treatment- 1.679 ; after treatment- 1.275) and also there was a significant decline in quality of life in parameters relating with senses[smell and taste] (before treatment- 1.6468; after treatment- 1.6433), problems with teeth(before treatment- 1.5679; after treatment- 1.95) & dry mouth(before treatment- 1.679; after treatment-1.775).

Pain

The painful sites involved were jaw, mouth and throat. According to the painful site the results was calculated by comparing the mean values before and after the treatment. Quality of life has improved in all the parameters of pain which is indicated by decrease in the mean value. Before the treatment values include pain in

jaw (2.3951), pain in mouth (2.5184), pain in throat(2.2099) and after the treatment the results were pain in jaw (0.6708), pain in mouth (1.9625), pain in throat (1.8225) [Table 2].

Swallowing

In the assessment of swallowing related quality of life... difficulty in swallowing solids, liquids and feeling choked when swallowing were taken as QOL parameters. Swallowing component before the treatment values include choked when swallowing (2.5926), swallowing solids (2.5926), swallowing liquids (1.7531) and after the treatment the results were choked when swallowing (1.3625), swallowing solids (1.675), swallowing liquids (1.4875). The decrease in the mean value of above parameters indicate that there was an improvement in the quality of life[Table 3].

Senses

In the assessment of senses related quality of life problems with sense of smell and taste were taken as QOL parameters. Patients having problems with sense of taste [before- 1.791and after- 1.8125] and smell [before- 1.5679 and after- 1.78] has shown increased mean value indicating decreased quality of life [Table 4].

Speech

In The assessment of speech, we found that parameters of patients having trouble talking to other people [before- 2.3333 and after- 1.7375] and on telephone [before- 2.4321and after- 1.8375] has shown increased mean value indicating decreased quality of life [Table 5].

Social Eating

In case of social eating and social contact we found that, patients having trouble in social eating has shown improved quality of life after the treatment when compared with quality of life before the treatment [Table 6].

Social Contact

Patients having trouble in social contact with family [before- 1.8519 and after- 1.4875] and friends [before- 1.8148 and after- 1.4875] has shown improved quality of life. Subjects having trouble going out in public [before- 1.8148 and after- 1.4875] & bothered by appearance [before- 1.872 and after- 1.3625] has shown decreased quality of life [Table 7].

We found a noticeable disease improvement in quality of life in the parameters of physical, and social function, which is different from the **Scharloo et al.**, in which there was an improvement in the emotional function and a worsening in social & physical function throughout the follow up period.

Miscellaneous Components

In the assessment of other individual factors effecting Quality of life, patients having problemswith teeth [before- 1.5679 and after- 1.95] and drymouth [before-

1.679 and after- 1.775] have shown reduced quality of life whereas parameters Such as, felt ill [before-2.1975 and after- 1.3375], sticky saliva [before- 1.9877 and after- 1.387], coughed [before- 1.679 and after- 1.27] problem in opening mouth [before- 1.8889 and after- 1.4625] has shown improved Quality of life [Table 8].

No statistically significant improvement was seen in the global quality of life, functional scale, and symptom scale, but there is observable variation in the individual components. There was some improvement in the physical and emotional function while the other three variables decreased post-treatment, including role performance, cognitive, and social function. It is likely due to post-treatment supportive care factors.

Support and care should not only be provided for the prevention of complications and further progression of the disease but also to facilitate management of pain, psychosocial instability and towards prevention of the loss of function after treatment.

HRQoL is significantly associated with survival in relation to demographical, lifestyle and clinical measures. This highlights the value of monitoring HRQoL in clinical practice to identify those patients that report changes in HRQOL at 6 months after treatment.

CONCLUSION

Based on our study results we conclude that the quality of life in head and neck cancer has significantly improved over a period of time. EORTC H & N 43 questionnaires presented a statistically significant correlation in the assessment of patients overall quality of life. Educating The patients regarding lifestyle Modifications and dietary Restrictions has shown great impact on improvement of Quality Of Life.

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