



## ASSESSMENT OF ORAL MUCOSITIS & OTHER SIDE EFFECTS DURING CONCURRENT RADIO-CHEMOTHERAPY OF ORAL-CANCER PATIENT: A QUESTIONNAIRE STUDY.

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**ABSTRACT** **BACKGROUND:** Oral-cancer is one of the most common cancer particularly in India. The purpose of cancer therapy is to cure the cancer. However, Radio-Chemotherapy modalities may pose some serious side effects. Thus, there is a need to assess these issues so that novel therapeutic protocols can be designed for patients. Hence, a study has been designed to assess and address their physical and psychological issues during the treatment. **AIMS:** To Assess the Oral mucositis along with physiological, psychological and social impact of Radio-Chemotherapy in Oral-cancer patients. **MATERIAL & METHOD:** The study was conducted at the local oncology center. Patients suffering with oral-cancer, undergoing radio-chemotherapy were selected. A Prefabricated Questionnaire of 17 questions were used. Participates were enrolled after written consent. **RESULTS:** The data revealed that there is lack of awareness in patients regarding the cause of cancer, treatment plan, and consequences of treatment. **CONCLUSION:** There is need to increase the awareness regarding the cause of cancer, treatment plan and the consequences of treatment.

**KEYWORDS :** Oral-cancer, Side-effects, Oral-mucositis, Radiochemotherapy.

### INTRODUCTION

Oral-cancer is one of the most common cancer among all cancers seen worldwide. It accounts deaths for 2% in males and 1% o in females. Study done by Düzlü et al. stated that there are around a total of 230 malignancies that originated only from the s cavity during 20-year time period of life<sup>1</sup>. Oral squamous cell Carcinoma (OSCC) represents 90% of all cancers in oral cavity. The majority of oral-cancers involves buccal mucosa, tongue, oropharynx, floor of the mouth. Approximately 95% of OSCC occurs in people older than 40 years with an average age and diagnose approximately at around 60 years. Therefore, incident of oral-cancer is increasing with older age<sup>2</sup>. It is found that the incidence of oral-cancer is age related, which may reflect time for the accumulation of genetic changes and duration of exposure to initiators and promoters includes chemical and physical irritants, viruses, hormonal effects, cellular aging and decreased immunologic surveillance with aging<sup>3</sup>.

The most important risk factors are consumption of tobacco, alcohol, betel quid. Tobacco contains potent carcinogens, including nitrosamines, polycyclic aromatic hydrocarbons, nitrosoproline and polonium. Tobacco smoke contains carbon monoxide, thiocyanate, hydrogen cyanide, nicotine and its metabolites. Nicotine is a powerful and addicting drug. In many parts of Asia, the use of tobacco, betel nuts, or lime to form a quid is widespread, the incidence of oral-cancer is also high in these countries<sup>4</sup>. In addition, Poor oral hygiene acts synergistically to enhance the risk of cancer. Other risks factors included are HPV-16 and HPV-18 infection, immunodeficiency, diet, nutrition, socio-economic status<sup>5</sup>.

In early stage of cancer, lesions are asymptomatic and even mimic benign lesions. Although a wide variety of diagnostic procedures are being suggested, but the most reliable method is still under examination by the clinicians. The inability to detect the disease at an early stage results in unfavorable prognosis, subsequent progression and difficulty in treatment of cancer in oral cavity<sup>6</sup>. According to WHO 2013 report, the 1-year survival rate of oral-pharyngeal carcinoma is 84%; yet, 5-year survival rate is 62%and 10-year survival rate is 51%.

As such, efforts to increase the rates of early diagnosis and treatment of oral cancer should be prioritized<sup>7</sup>.

Preferred treatment of oral cancer is Surgery, Radiotherapy, Chemotherapy or combinations of any of these therapies are the main stream of intervention. However, these treatments have some side effects out of which oral mucositis(OM) is virtually a universal complication. The quality of life (QOL) of these patients is also compromised after conventional treatment with functional disabilities occurs such as post-treatment tissue morbidity, xerostomia, fibrosis, psychosocial and social impacts<sup>8</sup>. Significant morbidity, pain, odynophagia and malnutrition are commonly encountered during treatment, thereby affecting overall QOL with increased risk of infections due to impaired host defense mechanism.

With rising incident cases of oral-cancer public education is urgent need of time, as well, as strengthening the awareness regarding early diagnosis & prognosis, among dentists and general practitioners is required, thus this study was conducted.

### AIMS

To Assess the OM along with physiological, psychological, social impact of Radio-Chemotherapy in Oral-Cancer patients.

### OBJECTIVES

**Primary** – Assess the presence of any adverse effects of radio-chemotherapy in cancer patients.

**Secondary** - Assess the awareness of cancer patients regarding the diagnosis & treatment.

### MATERIAL

The study was conducted at Oncology center in the city of North Maharashtra, after obtaining ethical clearance from institutional ethical committee and in accordance with the Helsinki Declaration. A total of 80 Patients suffering from Oral-cancers and undergoing or radio-chemotherapy therapies were selected. A Prefabricated Questionnaire of 17 questions was used, questions were with multiple

choice answers, and for few questions patients were permitted to give multiple answers and few were open ended question. Every participant was asked to provide certain demographic data. The questionnaire was formulated in English language, for convenience of the patients the questionnaire was converted into local language (Marathi). Patients willing to participated after giving written consent were undertaken for the study.

### Equipment

We ourselves prepared the questionnaire, based on literature. The Questionnaires were in two parts: Demographic data and Cancer related questions.

The first part consists of patient information like age, gender, qualification, address and economic status. Collection of the demographic data was also the part of our study to know which age group is affected more, whether male or female, their qualification whether they were literate or not.

In Second part: Further questions were based on the initial onset of cancer till treatment and its side effects were included. Moreover, information on whether anyone in the family diagnosed as having cancer. Self-reported scales from the patient's perspective could assist in addressing their physical, social and psychological issues during the treatment. This is essential for effective management of complications during treatment and also in development of novel therapeutic protocols.<sup>8</sup>

### Questionnaire

1. You are suffering from which region of oral cavity cancer?
2. What do you think is the cause of oral-cancer?
3. What symptoms do you experience?
4. Who has diagnosis cancer in your case?
5. Do you know any diagnosis / screening modalities for oral-cancer?
6. If yes:
7. Do you know development of oral-cancer is preceded by precancerous lesion?
8. Do you know that early detection and early treatment of cancer has better prognosis?
9. Do you know what are the treatment available for oral-cancer?
10. Which treatment you are undergoing?
11. Do you know treatment for oral-cancer has some serious side effect?
12. If yes:
13. Which side effect you are personally experiencing?
14. Among which is more serious?
15. What was psychological difficulties you are suffering from?
16. What are the social difficulties you are suffering from?
17. Is OM was so severe to stop the treatment?

### Inclusion Criteria

1. Patients with oral-cancer only.
2. Patients above age 18 year.
3. Patients undergone at least 5 cycles of treatment therapy.

### Exclusion Criteria

1. Patients not following the study protocol.
2. Patients not willing to answer the questionnaire.

### Statistical Analysis

Answers to all multiple choice questions were tabulated by demographic variables. Correlations were calculated for preference and information items against the same demographic variables. Proportions of patient's responses in each question were analyzed and result was concluded in percentage.

### RESULT

According the demographic data, we found that the male ratio is more than female. In Oral-Cancer most commonly affected site were buccal mucosa followed by tongue, alveolus and lip. Many literatures stated that there are unavoidable adverse effects of radiotherapy, chemotherapy or combination radio-chemotherapy, to minimize these effects standard protocol should be followed. Fig 1: Shows severe side effect on patients undergoing radio-chemotherapy and chemotherapy, and Fig 2: Shows Side effects of radiotherapy.

According to present study, patients were suffering from multitude side effects like OM, loss of taste perception, reduced mouth opening,

nutrition barrier, weight loss, hair loss out of which OM is one of the severe side effect. It is a predictable but unavoidable representation during the course of concurrent radio-chemotherapy for the treatment of Oral-cancers. Many times patients reported that OM was so severe that radio-chemotherapy was postponed for few days, till the mucositis reduce to a bearable nature.

Patients should be made aware of premalignant lesion. The presence of premalignant lesion should be diagnosed early by conducting regular diagnostic camps in the rural and urban areas. Proper Counseling regarding adverse effect of tobacco consumption should be considered in the health camps. Fig 3: Shows awareness in patients with presence of premalignant lesions & adverse effect of cancer therapy. Only 33% patients were aware of premalignant lesion. When patients were questioned who diagnosed their case, 35% of the cases were diagnosed by dentist.

Most of the patients were illiterate and below poverty line, we need to increase awareness regarding oral-cancer, treatment, unavoidable adverse effect caused due to treatment. According to this study, awareness was only seen in 35 % of the population.

Psychological consequences are also seen in patients undergoing radio chemotherapy. In such patients' few presentations are common sequel among the treatment groups associated with anxiety and depression<sup>9</sup>. Fig 4: Shows Psychological & Social difficulties faced by patients.

### DISCUSSION

Various studies have shown the presence of OM as one of the major unavoidable side effects of radiotherapy, chemotherapy or combination of both. Usage of tobacco, areca nut enlarges the risk of cancer from 8.5 to 16.4 times, thus many investigations shows that alcohol and tobacco has synergists, boosting and significantly increasing the risk of oral-cancer<sup>10</sup>. Similar study by Özge Kebabcoğul et al reported that majority of the dentists rightly identified tobacco (98.8%), alcohol (95.3%) misuse as the major risk factors for oral-cancer.<sup>2</sup>

In this study most commonly involved area in the oral cavity is the buccal mucosa. Whereas, study by Krishna A. et al reported that for tobacco smokers highest risk of OSCC in the retro molar area followed by the floor of mouth and buccal mucosa, while alcoholic were highly risk significant in floor of mouth compared to tongue<sup>11</sup>.

In India, around 82% of the dentists considered white lesions as the most commonly observed as a premalignant oral-cancer lesion and only 9.6% of dentists considered red erosions as the most common seen oral-cancer lesion<sup>12</sup>. This study highlighted the importance of improvement in the educational methods and education programs for dentists and dental students in terms of early detection and prevention of oral-cancer.

Inadequate health literature and low cancer screening rate were also evidenced by Franseschi S. et al<sup>13</sup>. Lower education, old age, living in rural areas and having a language barrier leads to lack of knowledge about oral-cancer and may contribute to late diagnosis of oral-cancer<sup>14</sup>. Similar to previous findings, in regard to the nature of any study about oral-cancer in a low socioeconomic or uneducated group, the knowledge and awareness of the participants was low as stated by Dodd VJ et al<sup>15</sup>.

### CONCLUSION

Within the scope of study, we conclude that OM is one of the major unavoidable side effects of Cancer therapy. Patients should be made aware and mentally prepared for side effect before going for the treatment. Proper counseling should be done at rural as well as urban regions regarding the habits of tobacco consumption. Dentist plays major role in diagnosis of the oral-cancer, as oral cavity is their main stream of interest.

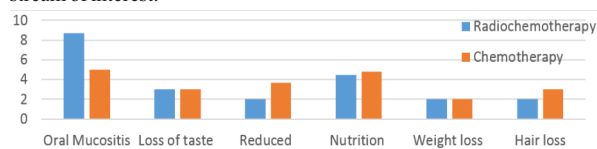
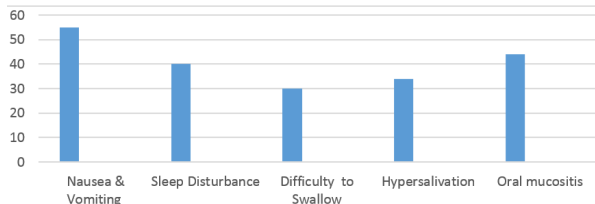
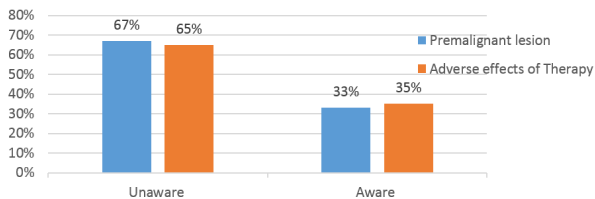


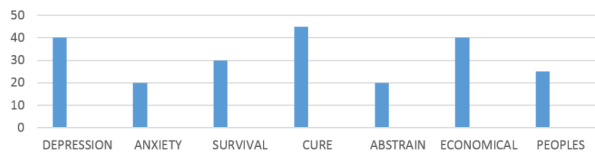
Fig 1: Shows Severe side effect of Radiochemotherapy & Chemotherapy



**Fig 2: Shows Side effects of Radiotherapy**



**Fig 3: Shows Awareness of Premalignant lesions and Adverse effect of cancer therapy.**



**Fig 4: Shows Psychological & Social difficulties faced by patients.**

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