

ORIGINAL ARTICLE

Awareness Of The Dental Patients About The Cause For Oral Cancer Other Than Tobacco Use – A Cross Sectional Survey Based Study

Saraswathi Gopal.K¹, B.G.HarshaVardhan², NaveenKumar.B³

ABSTRACT

Introduction: Oral cancer represents 2%-5% of all cancers, being one of the 10 most frequent ones. Chronic irritation is an emerging risk factor of dental consideration. With innate and iatrogenic sources being a constant threat of chronic irritation to the oral mucosa, it is mandatory to assess how aware the patient is regarding any long term irritant in the oral cavity and its threatening consequence. The aim of this study was to assess the awareness of the Outpatients about their understanding of reasons for oral cancer other than tobacco use.

Material and method: A questionnaire based dialogue interview was carried out among the outpatient attending the outpatient Department of our Dental College, Chennai. Study Sample consist of 500 patients (both sexes; aged between 18 and 80 years).

Results: The results of the study showed that the awareness and understanding of reasons for oral cancer other than tobacco use was lacking and statistically proven to be insufficient.

Conclusion: Awareness regarding oral cancer is deemed necessary for the general public since it's a major life threat.

Keywords: Oral Cancer, Chronic Irritation, Dentures, Sharp tooth, Broken Restoration

How to cite this article: SaraswathiGopal.K, B.G.HarshaVardhan,NaveenKumar.B Awareness of the dental patients about the cause for oral cancer other than tobacco use – a cross sectional survey based study. International Journal of Contemporary Medical Research. 2015;2(2):341-344

¹Professor and Head, ²Professor, ³Post Graduate Trainee, Department of Oral Medicine and Radiology, Meenakshiammal Dental College and Hospital, India

Corresponding author: Dr.NaveenKumar.B, Plot.no.510,16th street, 4th main road, Ashtalakshmi Nagar, Alapakkam, Chennai, India

Source of Support: Nil

Conflict of Interest: None

INTRODUCTION

Oral cancer represents 2%-5% of all cancers, being one of the 10 most frequent ones. Although oral cancer risk factors are majorly attributed to tobacco and alcohol consumption, a less spoken about entity such as chronic irritation is an emerging risk factor of dental consideration. With sharp teeth due to fracture, attrition and root stumps being an innate source of irritation, recent increase in awareness in oral care has led to patients undergoing various treatment modalities ranging from restorations, dentures to implant supported prostheses.¹ Due to technical errors sometimes, there is a possibility that these therapeutic measures by itself lead to chronic irritation. With both the innate and iatrogenic sources being a constant threat of chronic irritation, it is mandatory to assess how aware is the patient regarding any long term irritation in its threatening consequence.

The fact that a large incidence of oral cancer is being observed in younger age groups, it is definitely a matter of great concern as it stems from increasing use of tobacco by adolescents, youth and women.² Although, most studies have concentrated on smoking and alcohol consumption as the major risk factors, new investigations have focused on oral hygiene and diet.^{3,4} Quite a few studies discuss the fact that one of the main reasons for the late diagnosis is the general lack of the public's knowledge about signs and symptoms of oral cancer and its risk factors. A study conducted by K.J. Elango *et al.* showed that awareness of oral cancer and its risk factors after introduction of mouth self-examination program was over 80%.⁵ Therefore,

present study was carried out to assess awareness of risk factors for oral cancer and their presentation. Hence the present study was carried out with an aim to assess the awareness of the Outpatient regarding oral cancer and to evaluate their understanding for etiology of oral cancer other than tobacco use.

MATERIALS AND METHODS

A cross sectional study was carried out as a questionnaire based dialogue interview among the outpatient attending the OPD of a Dental College, Chennai. Ethical committee clearance from the Institutional Review board was obtained priorly, following assurance of confidentiality and anonymity. Study Sample consisted of 500 patients (both sexes; aged between 18 and 80 years). A questionnaire based dialogue interview was carried out over a duration of one month. The interview was carried out by a single person only, to avoid bias due to miscommunication. The questions in the study were formulated based on very basic factors involved in oral cancer etiology.

STATISTICAL ANALYSIS

The data obtained from the questionnaire were entered and analyzed utilizing the SPSS software. Parametric data were tested for statistical significance using ANOVA.

RESULTS

The overall results of the study showed that the awareness and understanding of reasons for oral cancer other than tobacco use was lacking and statistically proven to be insufficient. Out of the 500 responders 67% of patients knew that oral cancer is prevalent in India. 63.2% of the patients wrongly assumed that oral cancer is a disease of the middle age. 84.6% patients showed absolute ignorance to carcinogenic agents other than tobacco and alcohol (Graph-1). With regards to awareness about sources of chronic irritation in the oral cavity, 49% opted affirmatively for sharp tooth, 33% for foreign objects like tooth pick, safety pins etc.. and 18% for ill fitting denture. None of the study group responded affirmatively

for less than ideal implants or restorations (Graph -2). 65% of the study group were able to relate to the fact that buccal mucosa is the predominant site of developing Oral cancer (Graph-3). 80.2% of the patients agreed that early diagnosis of oral cancer was possible through self examination (Graph 4), however 0% was aware of how to perform a self examination for the same. Each of the responses are discussed in detail, in order to substantiate the rationale behind including these questions.

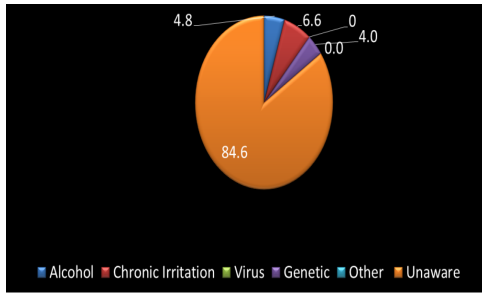
DISCUSSION

In response to question 1 which enquired on the prevalence of oral cancer in India, not many of them are able to appreciate oral cancer as a separate entity. 33% did not realize that the prevalence of oral cancer was quite high in our country. This stands proof for the lack of awareness of the fact that our country ranks in the first 3 places in incidence and prevalence of Oral cancer.⁶

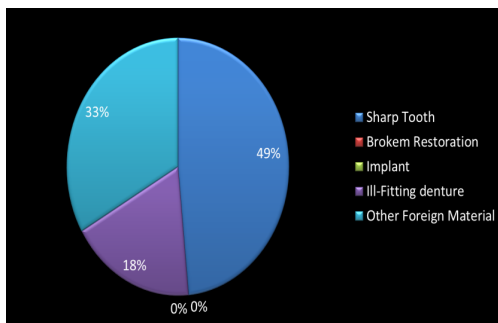
When investigated about the age predilection of developing Oral Cancer, it was interpreted that most of the population relate cancer to be a disease of the middle age.⁶

Since tobacco and alcohol are being highlighted in Oral Cancer awareness campaigns we formulated the next question to identify the commonman's knowledge about co-carcinogens. Even though options of Genetic etiology, Chronic irritation and Radiation exposure were included, many of the responders were not able to correlate to these facts. 84.6% of the study sample showed absolute unawareness towards the other co-carcinogens of cancer, and they blindly associated oral cancer only with tobacco and related products. e about 6.6% of the study group were able to associate chronic irritation and oral cancer.

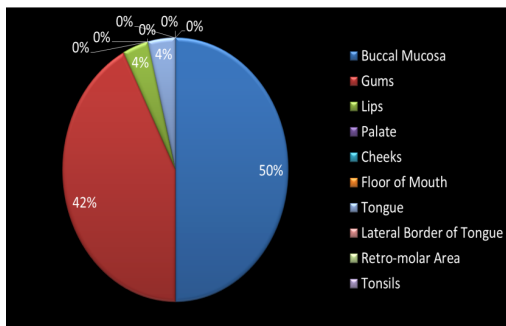
4.8% pointed to alcohol. Blond tobacco and spirit consumption show lesser, but still considerable synergistic effect. The role of alcohol has always intrigued researchers as, Alcohol has also been shown to decrease the activity of DNA-repair enzymes, and increased chromosomal damage has been documented in chronic alcohol users. Other possible effects of alcohol include impaired immunity resulting from



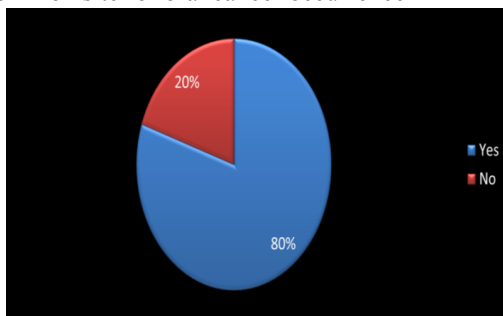
Graph 1: Response to question enquiring the awareness of etiological factor of Oral Cancer other than tobacco products



Graph-2: Response to question regarding awareness of known chronic irritants



Graph-3: Response to question regarding awareness of common site for oral cancer occurrence



Graph 4: Response to question regarding awareness of patient about early detection of oral cancer through simple screening

a reduction in T cell number, decreased mitogenic activity and/or reduced macrophage activity. Only 4% opted for genetic etiology. Current

studies postulate that the development of cancer is driven by the accumulation of genetic and epigenetic changes within a clonal population of cells. These genotypic alterations can affect hundreds of genes, leading to phenotypic changes in critical cellular functions, such as resistance to cell death, increased proliferation, induction of angiogenesis, and the ability to invade and metastasize. The mechanisms which underlie these genetic and epigenetic aberrations include, but are not limited to, genomic instability through chromosomal rearrangements, amplifications, deletions, methylations and mutations.^{7,8} None of them acknowledged viral etiology in oral cancer even though the entity of HPV. The role of HPV in these cancers is confounded by the fact that HPV genomic material may also be found in normal head and neck mucosa in up to 64 percent. Cofactors for HPV induction of oral cancers have been investigated in a handful of studies which show mixed results. The schematic representation of this response is depicted in Graph 1.⁷

To reiterate the fact that chronic irritation is an established co-carcinogen,^{9,10} the next question focusing on the irritant sources that the patients felt threatening was included and it was a surprise that none of them believed that less than ideal implants or restorations could be potential irritation sources to oral mucosa. (When asked about the site predilection for oral cancer, 65% responded that it was the cheek mucosa which correlated to literature. However the other sites were not clear to the population's understanding, with many answering affirmatively for the gums to be the second most frequent site of oral cancer. As per studies, frequently buccal mucosa; followed by tongue (27.6%), followed by cancer of the oropharynx (22.8%), lip (16.5%), floor of the mouth (14%), gingival (9.1%) hard palate (4.1%) were the commonest sites of oral cancer occurrence¹¹ Only if the patient realises where to look for and why; will he be able to prophylactically assess himself for the same; 80.2% of the population realized that early detection of oral cancer is possible through simple screening. All the participants however were unaware to perform self oral examination.¹² Hence it is very mandatory to alert the general population to be aware of causative conditions of

oral cancer and to enforce a routine of self examination which will definitely bring in a remarkable change in the prognosis and outcome of the disease.

The questions in the study were formulated based on very basic factors involved in oral cancer etiology. At the end of the interview session all the patients were explained about the background of the study and were given a brief cancer awareness lecture. They were also taught about how to perform a self examination for soft tissue evaluation.

Since the scope of the study was targeted at increasing the awareness about chronic irritation, Patients were enquired about their knowledge of entities that may contribute to a long term irritation in the oral cavity and what they thought would be feasible to manage this irritant. This was to trigger the thought of the patient to get back to their dentist as early as possible regarding their sharp teeth or restoration considerations.

CONCLUSION

Oral Cancer, though being the most common cancers seen in both Indian men and women as can be gauged from the records of the National Cancer Registry Programme, a lot of responsibility lies on the health care professional, not only in diagnosing and treating oral cancer, but also to increase the awareness about the etiology and presentation of oral cancer which will hopefully draw the patient to a health care professional at the earliest. This desired transition is the ultimate aim of the study and it is encouraged that all the dentists include a special knowledge session to all patients regarding self examination for oral cancer and also to enlighten the population and arm them with the strongest weapon- “knowledge” about the gross spectrum of carcinogens, in this fight against oral cancer.

REFERENCES

1. Relationship between chronic trauma of the oral mucosa, oral potentially malignant disorders and oral cancer. Piemonte ED, Lazos JP, Brunotto M.J Oral Pathol Med. 2010;39:513-7.
2. Nitin Gangane, Shweta Chawla, Anshu, et al. Reassessment of Risk Factors for Oral

- Cancer *Asian Pacific Journal of Cancer Prevention*. 2007; 8:3-8
3. Sankaranarayanan R, Ramadas K, Thomas G, Muwonge R, Thara S, Mathew B, et al. Effect of screening on oral cancer mortality in Kerala, India: a cluster-randomised controlled trial. *Lancet* 2005;365:1927e33..
4. Fatholah Behnoud, Saadat Torabian, and Maasoumeh Zargaran. Relationship between Oral Poor Hygiene and Broken Teeth with Oral Tongue Squamous Cell Carcinoma. *Acta Medica Iranica*. 2011;49: 3
5. Elango KJ, Anandkrishnan N, Suresh A, Iyer SK, Iyer SKR, Kuriakose MA; Mouth self examination to improve oral cancer awareness and early detection in a high-risk population. *Oral Oncol*. 2011;47: 620–624.
6. Anupam Mishra, Rohit Meherotra. Head and Neck Cancer in India: Global and Regional Trends ; *Asian Pacific Journal of Cancer Prevention*. 2014;15:45-56
7. Jatin.P.Shah, Snehal G.Patel. Atlas of Clinical Oncology Cancer of the Head and Neck .1st Ed. BC Decker; 2001
8. C. Seethalakshmi. Early Detection of Oral Squamous Cell Carcinoma (Osc) – Role of Genetics: A Literature Review *Journal of Clinical and Diagnostic Research*. 2013;7:1 824-1826
9. Munish Kumar , Param Pal Singh , Divya Saxena. Chronic Trauma As Precipitating Factor Of Squamous Cell Carcinoma Of Tongue – 3 Case Reports. *IJDS*:2014;4:6-9
10. Fatholah Behnoud, Saadat Torabian, and Maasoumeh Zargaran. Relationship between Oral Poor Hygiene and Broken Teeth with Oral Tongue Squamous Cell Carcinoma *Acta Medica Iranica*. 2011;49;3-9
11. Abhayjeet Singh, Ashish Kumar, Vikas Berwal, Manjit Kaur Squamous Cell Carcinoma of Tongue- A Case Report. *J Adv Med Dent Scie* 2014;2:146-148.
12. Joshi P, Nair S, Chaturvedi P, Nair D, Agarwal JP, D' Cruz AK Delay in medical care for oral cancers. *IJC* 2014;51;2