

Trends in oral squamous cell carcinoma: Diagnosis for effective, evidence-based treatment 2017

BACKGROUND

Oral squamous cell carcinoma (OSCC) is one of the most common cancers in India with estimated incidence in the range of 5000, 38,000, 64,500 and 6750 for lip, tongue, mouth and oropharynx OSCC, respectively, in 2020.^[1] In India, tobacco use in many forms with or without areca nut is the driver of the high incidence of OSCC. The buccal and labial mucosa are the more commonly affected sites, in contrast to the other intraoral sites in the Western population.^[2]

NEOTERICIS-TONGUE CANCER

Of recent interest is the increasing incidence of tongue cancer in younger patients, who often do not use tobacco and/or alcohol in any form.^[2] This increase is attributed to increased awareness and treatment-seeking behavior, early diagnosis and genetic predispositions.^[2] The emerging body of evidence relating the oral human papillomavirus (HPV) infection and OSCC in oropharyngeal point to a driving factor for the increased incidence of tongue cancer, particularly in the base of the tongue.^[3] The evidence for this stems from population-based studies.^[2,3] Increased travel across the globe, early treatment-seeking behavior, better sensitive tests and changes in sexual practices are some of the factors that have increased the oral HPV carriage.^[3]

Owing to the anatomical differences and prognosis, tongue cancer has been categorized as a separate entity in 2017.^[4] This separation is further justified by genetics and molecular-based studies which show that the molecular pathways for the tongue OSCC are different from other intraoral sites.^[4,5] Considering this paradigm shift, the recent “Blue Book” or the WHO head and

neck tumor book delineated that HPV-associated OSCC/oropharyngeal carcinoma as a separate entity, particularly the tumors of posterior oropharynx.^[4,6] Besides HPV, tongue OSCC without any known etiologic reason is an area of concern as highlighted in our previous reports.^[2] There is also evidence to indicate that chronic mechanical irritation is a factor that predisposes to OSCC.^[7] Mitochondrial DNA as a source of maternal genetic susceptibility has been recently demonstrated in tongue cancer patients.^[8]

NEOTERICIS-TONGUE CANCER: CONCERNS AND DIAGNOSIS

Given the poor prognosis with tongue OSCC, there is a need for proper screening and early diagnosis to ensure disease-free, long-term survival. Many studies advocate the use of diagnostic aids to detect oral cancer in the early stages. They include autofluorescence-based detection system, low power LASERS, liquid biopsy and biomarkers in the saliva. However, these techniques have not been assimilated into mass screening programs or routine clinical use. Consequently, clinical examination and biopsy are of paramount importance.^[9]

In India, the National Family Health Survey-4 (2015-16) indicates that only 12.4% of Indian women have had their oral cavity examined for oral cancer. This can increase the chances of patients presenting at late stages of malignancy. This combined with the fact that the 30.6% of men and 29.3% of women who use tobacco are interested in quitting tobacco have to be considered to minimize the use of tobacco and associated pathologies in our efforts to disseminate information and screening population.^[10]

To make the classification system of the upper aero-digestive system precancers treatment oriented, use of a two-tiered

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binary system – low-grade dysplasia and high-grade dysplasia – has been advocated and stress is placed on diagnosis and reporting of micro-invasive carcinoma. Such a classification would help the oral health-care professionals draw more meaningful, patient-centered treatment plans.^[9] This can be supplemented with molecular marker analysis as recent research work in tongue OSCC shows that stromal tenascin and fibronectin expressions can be used to separate patients into low- and high-risk groups. It was suggested that surgery alone for early-stage primary OSCC tongue tumors might be adequate when stromal fibronectin is negative. When tenascin and fibronectin expression was abundant, the patient requires aggressive treatments.^[11]

NEOTERICIS-TONGUE CANCER: SURGICAL APPROACH OF TONGUE ORAL SQUAMOUS CELL CARCINOMA

Understanding the dynamics of tongue OSCC is complicated as there are numerous pathways that are involved. About 800 genes are specifically down/up-regulated in tongue OSCC alone. Further studies are needed to prove our understanding the molecular basis.^[12]

Most of the tongue OSCCs by virtue of its presentation are often early carcinomas unless the lesion is situated posteriorly. In such situations, margin assessment, assessment of residual tumor bed, is necessary^[13,14] and tumor budding has been proven to be a useful predictor tool to predict the early metastasis and recurrence, thereby contributing to lower morbidity and even mortality rates.^[15-17]

The use of LASERS for surgery of tongue OSCC is a matter of debate. A recent retrospective study of 31 early superficial tongue cancer treated with CO₂ lasers indicated that, in 2 of 31 cases, margins could not be assessed, indicating that use of LASERS may impede the proper management of the cases.^[18]

CONCLUSION

The year 2017 has started with the World Health Organization reorganizing the classification of OSCC and emergence of HPV-based classification, leading to changes in clinical screening for OSCC. In developing economies such as India, it is necessary that oral screening include not only tobacco-associated lesions but also HPV-induced lesions and conditions. Defined high-risk population should be screened for HPV too, with emphasis on reduction of tobacco use also. The emerging knowledge in OSCC should be put to use to reduce the morbidity/mortality and to improve screening and accelerate preventive programs.

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Conflicts of interest

There are no conflicts of interest.

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