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Review Article

Oral Cancer; Myths and Challenges in Indian Population

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ABSTRACT

The term oral cancer refers to cancer arising within the oral cavity and the oropharyngeal region. Oral cancer is one of the most common malignant neoplasia, more common among men than women. Oral cancer is more concern in the Indian population due to oral habits including pan, betel nut, tobacco and smoking. The myths regarding oral cancer occurrence, diagnosis and treatment among the Indian population still exist and it also becomes more challenging in educating and treating cancers among these. This article will present a detailed review of myths and challenges of oral cancer among the Indian population.

Keywords: Oral cancer, Tobacco, Smoking, Oral squamous cell carcinoma

HIGHLIGHTS

1. Oral cancer is the most common malignant neoplasm
2. The myth about oral cancer still exists among the Indian population
3. Smoking is not the only causative agent for oral cancer
4. The most common challenge in oral cancer is the delayed diagnosis of the lesion and people's unawareness regarding oral cancer
5. The survival rate of oral cancer is <5 years in more than 50% of the cases.

INTRODUCTION

The word cancer is a general term, used to describe all malignant tumors. At present, one of the most common health-related disorders, affecting millions of people around the country is oral cancer. It is the third most common cancer among the various cancer of the body. Oral cancer constitutes about 40% of all head and neck cancers. Oral squamous cell carcinoma (OSCC) accounts for about 90% of all oral cancer and the word OSCC lies as a synonym for oral cancer.[1] The nature of the OSCC is very aggressive even in the early stage of cancer development and the treatment remains challenging due to its aggressive behavior, rapid invasion and lymph node metastasis. This deadliest disease is commonly diagnosed in a later stage, in most cases, and this results in a poor prognosis and is uneconomical.[2]

In current days, oral cancer is unusual in the developed part of the world and remains common in developing and underdeveloped countries.[3] The consumption of tobacco, betel quid chewing and smoking mainly contributes to the development of oral cancer.[4] The awareness, knowledge and consequences regarding oral cancer are minimal or poor among the general population. Various myths and challenges are existing with oral cancer due to poor knowledge and lack

of information, particularly in rural areas in the Indian population.

The first and foremost challenge in oral cancer is the lack of diagnosis in the early stage and thereby reducing the chance of survival.[1,5] Due to inadequate access to health-care providers in rural areas, the diagnosis of the early stages of the disease has also been delayed.[6] Although there are advancements in imaging modalities, screening techniques and the availability of primary care physicians, a large percentage of patients could be witnessed with advanced-stage disease.[2]

The greatest menace of the oral cancer burden continues among the lower socioeconomic status. This part of the population is highly endangered due to increased exposure to the risk factor – tobacco, which complicates the situation further.[2] The most common myth associated with oral cancer is that elders are at higher risk than the younger age group and that smoking is the only major etiological agent for oral cancer occurrence.[7]

DISCUSSION

Oral cancer, traditionally known as OSCC, develops histologically from the squamous cells. In poor and underdeveloped countries, cancer is now a chief cause of death and disability and thus stands as a major health concern.[8] Low-income and middle-income countries now bear a majority share of the cancer burden. Numerous studies reported that oral cancer is more prevalent in men than women.[9] The incidence of oral cancer is common in the 4–7th decades of life. The standard incidence of oral cancer was 4/100,000 people worldwide. The highest incidence of oral cancer was reported in the central region of the Indian population.[10]

The etiology of oral cancer is multifactorial, including tobacco, betel quid chewing, smoking, alcohol, spicy foods, sharp tooth and UV radiation Human papillomavirus. Poor oral hygiene and dietary deficiencies are also considered to be the possible causative factor for OSCC.[4] Several studies have shown that 10% of all cancer have a strong genetic predisposition. It commonly occurs on the buccal mucosa, anterior-two third of the tongue, the floor of the mouth, palate, retromolar trigone, alveolar ridge and gingiva. It also occurs in the oro-pharyngeal region.[11]

The principal cause of oral cancer in the Indian population is betel nut chewing with tobacco. The morbidity and mortality rate associated with oral cancer increases significantly with a late or delayed diagnosis. Oral cancer has a poor prognosis of about 50%.[12] The most common challenge in diagnosing oral cancer is people's unawareness and negligence to identify oral cancer at the early stage despite improved technologies.[13,14] Due to the uncommon presentation of certain types of oral cancer, it also becomes a challenging factor in oral cancer diagnosis and management.

Several studies suggested that oral cancer can be attributed to several etiological factors, but smoking and alcohol use becomes dominant. Areca nut, the main ingredient of paan (tambul), is found to be the major reason for oral submucous fibrosis. The incidence of oral cancer is high in a patient with oral submucous fibrosis (OSMF) as compared to the patient using tobacco with no visible lesions. The transformation rate of OSMF to oral cancer is one of the main reasons for an increase in oral cancer in young age groups.[15]

There is a great co-incidence between cessation of tobacco use and regression of the incidence rate of leukoplakia in the Indian population.[16] Prevention of cancer usually includes primary and secondary measures. Primary measures include cessation of tobacco habits, knowledge regarding tobacco usage and unhealthy habit and lifestyle modifications. Secondary measures include oral cancer screening in the primary health measures, thereby significantly reducing morbidity and mortality.[17]

The most common myth associated with oral cancer is that the younger age group is at least at risk of exposure to cancer than adults. However, the fact is that cancer cells do not develop based on the age of the patients; it entirely depends on the etiological factors and exposure to causative agents. The incidence of oral cancer is directly proportional to the older age groups. Smoking is the next general myth usually associated with oral cancer among the general population. People are generally not aware of the other causative agents responsible for the development of cancer. Tobacco along with the consumption of alcohol will dramatically increase the incidence and risk of oral cancer synergistically, as the commensal bacteria present in the mouth can convert alcohol to aldehydes, which is toxic.[18]

The typical challenge in oral cancer is diagnosing and treating the lesions at an early stage. Since the clinical signs and symptoms of oral cancers are often undefined and may be mistaken for other common complaints, screening of the lesions is delayed. This results in rapid invasion and lymph node metastasis, leading to increased morbidity and mortality.[3,19]

Ayurveda, the oldest part of the Indian traditional system of medicine, also means the alternative therapy for oral cancer among the Indian population, but the roles of ayurvedic plants for cancer treatment are still in research. In recent days, there is an increasing trend related to "baba therapy" which includes yoga, pranayamas and ayurvedic medicines. The role of yoga and Ayurveda remains questionable in the treatment of oral cancer and they were found to be only an integrative approach.[20]

The biopsy is found to be a primitive and essential tool for cancerous lesions. The knowledge and awareness regarding the biopsy procedure and practice among undergraduate students are minimal when compared to a specialist. This, in turn, further delays the treatment in patient and leads to poor prognosis. General practitioners and dentists must be well enough to perform the procedure to avoid unnecessary delay in the diagnosis of the lesion.[21]

Next, understanding the role of the oral microbiome in oral cancer genesis is a key challenge for researchers. Recent studies suggest a link between oral cancer and periodontitis, supporting the long-standing concept, bacteria that are associated with periodontal disease, have been associated with oral cancer.[1] Diverse studies stated that the tumor cells and their microenvironment interlinkage play a key role in cancer development and progression.[22] Cancer cells cause the surrounding cancer stroma to modify and, further, cancer stromal cells and cytokines may promote the progression of cancer and the attainment of invasive properties.

Furthermore, due to a lack of awareness among the rural and uneducated population, nowadays people are opting for other treatment modalities rather than surgery, chemotherapy and radiotherapy. The other treatment modalities for oral cancer are proven to be complementary and they are little effective only in the early stages of oral cancer. It is also found that it helps to improve the quality and lifespan of the patient rather than resulting in a permanent or complete cure of the disease.

CONCLUSION

It is important that cost-effective oral cancer screening, diagnosis and awareness initiatives be introduced in rural areas among the Indian population. Education programs regarding the myths of oral cancer should be conducted periodically in the general population. The primary care physicians must be aware of oral cancer possibilities in all aspects, particularly in young patients with increasing incidence without the conventional risk factors of alcohol and tobacco abuse. To reduce morbidity and mortality, all patients should be routinely and diligently screened for oral mucosal lesions.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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