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Original Article

Prevalence of oral ulcers and its association with addictions in rural population of western Uttar Pradesh and eastern Rajasthan

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ABSTRACT

Background: Head and neck cancer in Indian perspective predominantly relates to tobacco use. The present study explores the prevalence of oral ulcers and its association with addictions among the population of Uttar Pradesh and Rajasthan, India.

Methodology: The screening method in early detection of head and neck cancer is broadly symptom based. 1399 subjects from Uttar Pradesh and Rajasthan were screened by trained personnel between April and June 2015.

Results: Study findings showed, mouth ulcers and trismus were common symptoms and tobacco chewing and smoking were common addictions. There were statistically significant associations among the symptoms and addictions as well as predominance in rural populations. The majority of smokers (27.1%) belonged to age ≥55 years whereas the tobacco chewers (29.2%) and alcohol abusers (45.8%) in the age group 25–34 years. Also the risk of developing mouth ulcers and trismus in this area are approximately 35 (MRR: 35.7, 95% CI: 15.5–81.9) and nearly eight (MRR: 7.7, 95% CI: 2.2–26.6) times higher respectively in males. However, joint use of smoked and smokeless tobacco increases nearly three times more risk of either mouth ulcers or trismus.

Conclusion: Male individuals are more exposed to certain addictions such as tobacco (smoked and smokeless) and alcohol. The prevalence of oral ulcers is primarily associated with the addictions. Therefore, these persons are more at risk of further developing head neck cancer. A large level community screening and awareness are required especially among the rural population of India.

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1. Introduction

Oral cancer is the commonest cancer topping the cancer registries in India. The disease load and the symptom burdens are of particular importance in head and neck cancer patients in India. In South-central Asia, the oral cavity and oropharynx are commonest subsites, where 80% of head and neck cancers are found.[1] In India, about 200,000 new cases of head neck cancer are detected in every year.[2] There are several premalignant oral mucosal lesions including leukoplakia, erythroplakia, lichen planus as well as oral submucous fibrosis (OSMF), and all carry an increased risk for malignant transformations in the oral cavity and it is associated with areca nuts and tobacco use.[3] The other causes for oral mucosal lesions could be due to infection (bacterial, viral, fungal), local trauma and or irritation (traumatic keratosis, irritational fibroma, burns), systemic disease (metabolic or immunological), or related to lifestyle factors such as the usage of betel quid or alcohol.[4]

Screening and early detection are very useful methodologies, since precancerous lesions, in situ carcinoma as well as early stage of head and neck cancer have significantly good survival outcome after treatment.[5,6] The screening method of oral cavity malignancies is relatively simple and can be done effectively by visual inspections.[7] It is also mentioned in the literature that visual inspection of oral cavity by proper trained personnel is well accepted and accurate method of screening for oral cavity malignancies.[8–10] Oral self examination is a simple way of assessing self-perception of oral health and its validity has been proven. It is also a cost effective, less time consuming procedure.[11]

Literature mentions that visual inspection method for oral screening could be restricted to high-risk individuals and organized visual screening is a worthwhile initiative of control for oral cancer in addition to primary prevention efforts to reduce tobacco and alcohol use,[12] as well as, it has potential to prevent deaths due to oral cancer.[13] Despite the fact, that the oral cavity is accessible for visual examination and those oral cancers and premalignant lesions have well-defined clinical diagnostic features, oral cancers are typically detected in their advanced stages in our country. In fact, in India, 60–80% of patients present with advanced disease, as compared to 40% in developed countries.[14] Consistent with patients presenting for medical care with more advanced disease in India compared with developed countries, overall survival is also reduced.[15,16] Early detection would not only improve the cure rate, but it would also lower the cost and morbidity associated with treatment. For planning of national or regional oral health promotion programs, as well as to prevent and treat oral health problems, baseline data about the magnitude of the problem is required. India has a vast geographic area, divided into states, which differ with regard to their socioeconomic, educational, cultural, and behavioral traditions.[17,18]

There were no such organized screening programs undertaken till date in the western parts of Uttar Pradesh and eastern Rajasthan in a larger scale, to find out the disease burden of oral ulcers and its major associating factors. Therefore the present study primarily focuses on the distribution of oral ulcers and its association with addictions among the rural population of the region and the effectiveness of the questionnaire designed in house to collect baseline data. The other objectives were to sensitize health professionals, train community for oral self examination and to generate baseline data for previously rural population of Western Uttar Pradesh and eastern Rajasthan.

2. Methods

2.1. Data collection

Numbers of screening camps were organized in the western Uttar Pradesh and eastern Rajasthan including; Hatras, Bharatpur, Deeg, Tundla, Shikohadabad, Jhagina, Firozabad, Mathura, Shergarh, Jait and Barsana between April 2015 and June 2015. The study participants were screened by trained health-workers under the supervision of medical graduates. The outreach team collected information on demographic, symptoms and various addiction patterns among male and female subjects of all age groups. The common symptoms of head neck cancers – including ulcers in oral cavity, difficulties in opening mouth, hoarseness of voice, neck swellings, difficulty in swallowing, earache/ear discharge or nose bleeding were included in the questionnaire. Details of different areas of inspection of oral cavity, oropharynx, ear, and nose as well as the different palpation areas for neck nodes and thyroid swellings were included in the same questionnaire.

2.2. Training of health professionals

A series of training schedules were conducted by clinical oncologists, to teach the outreach group about organized history taking, to find out the important positive and negative points in history, addiction history and other relevant points. They all were taught by clinical oncologists about the details of examination of oral cavity by visual inspection, as well as palpation methods. The hands-on training was mainly focused on to undertake oral visual inspection, identify lesions suggestive of being precancerous in the oral cavity (e.g. homogeneous leucoplakia, non-homogeneous leucoplakia, erythroplakia, oral submucous fibrosis), and identify oral cancer. Two manuals on visual inspection with color photographs and descriptions of oral ulcers were used for training and reference during screening.[14,15] The competency of the all team members was examined by the clinical oncologists after successful completion of the training program.

A pilot study was conducted to pre-test the questionnaire in selected study areas of Western Uttar Pradesh prior to conducting the screening camps. The results of the pre-testing provided useful information in improving the clarity of questions for finalization of the questionnaire. The internal consistency of the questionnaire was estimated to 78% using Cronbach's alpha that indicated good level of reliability.

2.3. Statistical analysis

Data collected from the screened individuals were analyzed to estimate the prevalence of addictions and its association with

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