

# Prevalence of oral potentially malignant disorders and oral malignant lesions: A population-based study in a municipal town of southern Kerala

T T Sivakumar, Nisha Sam, Anna P Joseph

Department of Oral and Maxillofacial Pathology, PMS College of Dental Science and Research, Thiruvananthapuram, Kerala, India

## Abstract

Oral cancer burden poses a major challenge in India. Oral cancer in the majority of instances arises from preexisting oral potentially malignant disorders (OPMDs). Early detection of OPMD and elimination of primary risk factors such as smokeless and smoking tobacco help in reduction of oral cancer. A study was conducted to find the prevalence and associated risk factors of OPMDs and oral malignant lesions (OMLs) in Punalur township of South Kerala. A total of 2368 patients were screened, out of which 156 were identified with OPMD and 5 with OML. A male predominance was noted for both OPMD and OML. Strong association with smokeless tobacco and smoking tobacco habits was seen with patients having OPMD and OML.

**Keywords:** Oral cancer, potentially malignant disorders, prevalence, survey

**Address for correspondence:** Dr. T T Sivakumar, Department of Oral and Maxillofacial Pathology, PMS College of Dental Science and Research, Golden Hills, Venkode P.O, Vattapara, Thiruvananthapuram - 695 028, Kerala, India.

E-mail: ttsivadoc@gmail.com

**Received:** 30.08.2018, **Accepted:** 25.09.2018

Oral cancer is a leading cause of morbidity and mortality. It is the sixth most common cancer in the world and third most in India.<sup>[1]</sup> Globally, about 300,000 new cases are diagnosed every year.<sup>[2]</sup> Punalur municipal town in Kollam district of Kerala has a population of 51,007 (2015-Annual census) where males constitute 49% of the population and females 51%. Punalur municipality has a mixed population of inhabitants including natives, migrants and a few tribal colonies. The population-based cancer registry recorded that in Kollam district, the incidence rate of oral cancers among males and females is 10.8% and 8.5%, respectively.<sup>[3]</sup> Oral cancer in the majority of instances arises from preexisting potentially malignant disorders. According to various studies in India, the common oral potentially malignant disorders (OPMDs) are leukoplakia, speckled

leukoplakia, oral submucous fibrosis and oral lichen planus. The aim of the study was to investigate the prevalence of OPMDs and oral malignant lesions (OMLs) in a southern Kerala population and to identify the associated risk factors.

Dental surgeons, workers of the health service department (junior public health nurse, public health nurse, health inspectors and accredited social health activist workers) and volunteers in the Punalur municipal area were given a day-long training to identify the high-risk population and to motivate them for oral cancer screening. Oral cancer screening for OPMD and OML was carried out at 35 different wards of Punalur municipality. The camp was conducted under the banner of the Indian

### Access this article online

#### Quick Response Code:



#### Website:

www.jomfp.in

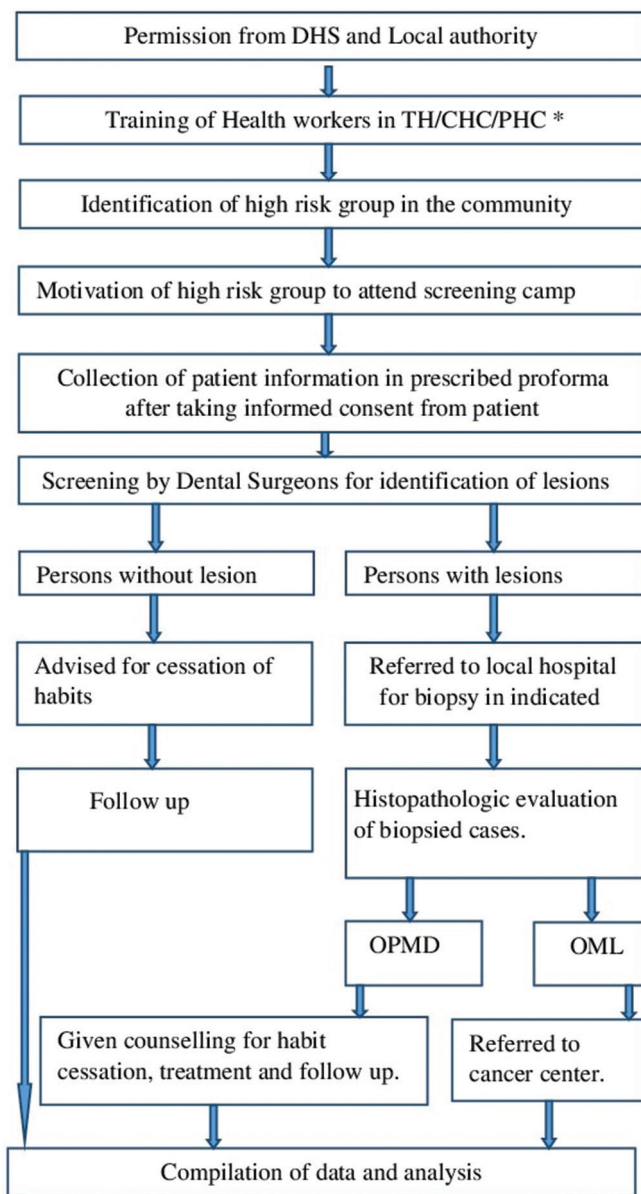
#### DOI:

10.4103/jomfp.JOMFP\_202\_17

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Sivakumar TT, Sam N, Joseph AP. Prevalence of oral potentially malignant disorders and oral malignant lesions: a population-based study in a municipal town of southern Kerala. *J Oral Maxillofac Pathol* 2018;22:413-4.



**Figure 1:** Flowchart for oral cancer screening. \*TH: Taluk Hospital, CMC: Community medical center and PHC: Primary health center

Association of Oral and Maxillofacial Pathologists in collaboration with Directorate of Health Service (DHS), Taluk Headquarters Hospital, Punalur, and PMS College of Dental Science and Research, Thiruvananthapuram. The modus operandi of the program is given in the form of a flowchart [Figure 1]. The results obtained are shown in Tables 1-4.

In conclusion, our study showed that OPMD and OML are significantly prevalent among the population of Punalur, particularly among the tribal communities which can be attributed to the increased usage of tobacco in various forms. It is recommended that oral cancer screening and awareness programs be conducted regularly

**Table 1: Gender based distribution of Oral Potentially Malignant Disorders and Oral Malignant Lesions**

Gender distribution	Total population screened (n=2368)	Oral potentially malignant disorders	Oral malignant lesion
Male	554 (23.4%)	94 (16.96%)	5 (0.9%)
Female	1814 (76.6%)	62 (3.41%)	0

**Table 2: Distribution and prevalence of Oral Potentially Malignant Disorders**

Oral potentially malignant disorders (n=156)	Distribution in numbers	Prevalence of OPMD in percentage
Leukoplakia	58	37.1%
Speckled leukoplakia	34	21.7%
Oral submucous fibrosis	33	21.1%
Lichen planus	31	19.8%

**Table 3: Comparison of Oral Potentially Malignant Disorders and Oral Malignant Lesions in tribal areas vs. others**

Study population	OPMD	OML	Prevalence in percentage OPMD and OML
Tribal ward (n=181)	44	3	25.96%
Other wards (n=2187)	112	2	5.21%

**Table 4: Habit pattern in tribal area vs. others**

Study population	Smokeless Tobacco	Smoking Tobacco
Tribal area (n=181)	79	35
Other Area (n=2187)	297	157

among the high-risk population with emphasis on tribal community.

### Acknowledgment

I hereby acknowledge the DHS, Government of Kerala, Indian Association of Oral and Maxillofacial Pathologists, Dr. P. S. Thaha, Chairman PMS College of Dental Science and Research, Trivandrum, Dr. Babu Mathew, Rtd. Prof. Community Oncology and Dr. R. Shahirsha, Superintendent Taluk Hospital, Punalur, for the valuable support and inputs.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### REFERENCES

- Narasannavar DA, Wantamutte DA. Prevalence of oral precancerous lesions and conditions among tobacco consumers in rural population around Belgaum. A community based cross sectional study. IOSR J Dent Med Sci 2014;13:31-4.
- Ambekar DM, Chaudhary BJ, Kulkarni VV. A study of prevalence of oral precancerous lesions in relation to tobacco habituation. Int J Med Clin Res 2014;5:282.
- Kollam. Pdf. Available from: [http://www.ncdirindia.org/NCRP/PBCR\\_2006\\_2008/Kollam.pdf](http://www.ncdirindia.org/NCRP/PBCR_2006_2008/Kollam.pdf). [Last accessed on 2018 Aug 30].