Prevalence of oral potentially malignant disorders

Abstracted from

Mello FW, Miguel AFP, Dutra KL, Porporatti AL, Warnakulasuriya S, Guerra ENS, Rivero ERC.

Prevalence of oral potentially malignant disorders: A systematic review and meta-analysis.
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Question: What is the global prevalence of the oral potentially malignant disorders among adults?

Data sources The Latin American and Caribbean Health Sciences (LILACS), LIVIVO, PubMed/Medline, Science Direct, Web of Science, Google Scholar, Open Gray and ProQuest database.

Study selection Observational studies conducted in adults aged over 18 where oral potentially malignant disorders (OPMDs) had clinical diagnoses histologically confirmed were included.

Data extraction and synthesis Study selection and data abstraction were undertaken by two reviewers independently. The Joanna Briggs Institute checklist of prevalence data was used to assess risk of bias. The prevalence of OMPDs expressed as a percentage was the main outcome. Random effects meta-analysis and sensitivity analysis were conducted.

Results Twenty two studies were included, seven from South America or the Caribbean, five from Asia, five from Europe and two each from North America and the Middle East. Three studies were considered to have a low risk of bias, twelve a moderate risk and seven a high risk of bias. The overall pooled prevalence of OPMD in this study was 4.47% (95% CI; 2.43 - 7.08). OPMDs were more common in males 59.99% (95% CI; 41.27 - 77.30%). Prevalence was highest in Asian populations 10.54% (95% CI; 4.60 - 18.55%).

Conclusions The overall prevalence of OPMD worldwide was 4.47%, and males were more frequently affected by these disorders. The prevalence of OPMD differs between populations; therefore, further population-based studies may contribute to the better understanding of these differences.

Commentary

According to the World Cancer Research Fund (https://www.wcrf.org/dietandcancer/cancer-trends/worldwide-cancer-data) there were an estimated 354,864 new cases of lip and oral cavity cancer and 92,887 cases of oropharyngeal cancer in 2018, representing 2.6% of all cancers. Oral cavity and oropharyngeal cancers are commoner in men and there is marked geographical variation with the largest number of diagnosed cases seen in south-central Asia. Survival rates are low with late presentation being an important factor. Early diagnosis is seen as important in improving treatment and survival. A number of oral potentially malignant disorders (OPMD) precede the development of oral squamous cell carcinoma (OSCC), the most frequent malignant neoplasm of the oral cavity, the main ones being oral leukoplakia (OL), oral erythroplakia (OE), oral submucous fibrosis (OSMF), oral lichen planus (OLP) and actinic cheilitis (AC). The aim of this review was to estimate the global prevalence of these OPMDs.

The authors have conducted a broad search of a number of databases and taken the decision to focus only on those observational studies with a histological diagnosis. While a summary of the characteristics of the included studies is available as a supplement to the main article there is limited information on the study designs, as all are described as descriptive, and no indication as to whether they are pro- or retrospective. The decision to use only studies with a confirmed histological diagnosis means that the data are derived from a cohort of referred patients rather than a broader population-based sample; this is demonstrated by the fact that the risk of bias assessment noted that only two of the twenty-two included studies were representative of the overall target population. These points together with the fact that only three of the included studies were considered to have been at low

Table 1. Regional prevalence of oral potentially malignant disorders

	No of Studies	Prevalence	95% CI
Asian populations	5	10.54%	4.60 - 18.55
South America and the Caribbean	7	3.93%	2.43 - 5.77
Middle East	2	3.72%	2.91 - 4.67
Europe	5	3.07%	1.64 - 4.93
North America	2	0.11%	0.004 - 0.37

Table 2. Prevalence of potentially malignant disorders

	Pooled prevalence %	95% CI
Oral submucous fibrosis	4.96%	2.28 - 8.62
Oral leukoplakia	4.11%	1.98 - 6.97
Actinic cheilitis	2.08%	0.94 - 3.67
Homogeneous oral leukoplakia	1.98%	0.44 - 4.61
Oral erythroplakia	0.17%	0.07 - 0.32
Non-homogeneous oral leukoplakia	0.16%	0.08 - 0.27

risk of bias need to be taken into consideration when assessing the reviews findings.

The review found an overall prevalence of OPMD = 4.47% (95% CI; 2.43 - 7.08) that was more common in males [59.99% (95% CI 41.27 - 77.30). The overall prevalence of OPMDs ranged from 10.54% (95% CI; 4.60 - 18.55) in Asian populations to 0.11% (95% CI; 0.004 - 0.37) in North American populations (table 1). Oral submucous fibrosis was the most prevalent of the lesions (4.96%) with non-homogeneous oral leukoplakia (0.16%) the least common (Table 2).

The regional references highlighted in the review are not unexpected and likely to be due in part to habits that increase risk such as the use of betel nut products which are commonly used in south Asia.

While the review provides a helpful estimation of the prevalence of OPMDs in a range of populations the limited quality of the available studies, in particular the fact that few of the included studies were representative of the overall target population, mean that these estimates should be viewed cautiously.

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