

## Original Research Article

# Prevalence of oral lesions in 25 years of Oral Cancer Prevention campaigns in Paraná State, Brazil, 1988 to 2013

Laurindo Moacir Sassi<sup>1</sup>  
Gyl Henrique A. Ramos<sup>2</sup>  
Jose Luís Dissenha<sup>1</sup>  
Juliana Lucena Schussel<sup>1</sup>  
Maria Isabela Guebur<sup>1</sup>  
Cleverson Patussi<sup>1</sup>

### Corresponding author:

Cleverson Patussi  
Departamento de Cirurgia Oral e Maxilofacial, Hospital Erasto Gaertner  
Rua Dr. Ovande do Amaral, n. 20  
CEP 81520-060 – Curitiba – PR – Brasil  
E-mail: cleverssonpatussi@hotmail.com

<sup>1</sup> Department of Oral and Maxillofacial Surgery, Erasto Gaertner Hospital – Curitiba – PR – Brazil.

<sup>2</sup> Department of Head and Neck Surgery, Erasto Gaertner Hospital – Curitiba – PR – Brazil.

*Received for publication: December 12, 2013. Accepted for publication: January 9, 2014.*

### Keywords:

oral cancer; prevalence;  
prevention. adhesives.

### Abstract

**Introduction:** Epidemiological studies add up as a large area of scientific research and play an important role revealing the prevalence of the several diseases in the place where they applied. Public and health professionals have become more aware of the importance of oral mucosal lesions. **Objective:** To determine the frequency of the oral lesions and determinate the epidemiological profile of patients attending the prevention of oral cancer campaigns in the state of Paraná, Brazil, between 1988 and 2013. **Material and methods:** A prospective study was conducted evaluating 25 years of oral cancer prevention campaigns in the state of Paraná, Brazil, between 1988 and 2013. All patients were evaluated in a systematic way and were older than 30 years, answering one questionnaire with data relating to harmful health habits, family history of cancer, family income, frequency of visits to dentists and knowledge on the subject. **Results:** A total of 22,300 patients were evaluated during the 25 years of projects and 3,731 had oral lesions, while 18,569 patients had no oral alterations during the evaluation. Among those patients,

13779 (61.78%) were female and 8521 (38.78%) were male, 843 (22.59%) were smokers, 578 (15.49%) used alcohol and in 1386 (37.14%) had the habit of using yerba mate. The prevalence of lesions occurred as follows: 533 (14.28%) cases of lesions with aspect of leukoplakia, 1095 (29.34%) inflammatory lesions, 1934 (51.83%) of traumatic origin and 169 (4.5%) classified as other. **Conclusion:** The campaigns have brought benefits to the health of the elderly population but it is still not enough to make up for low levels of oral lesions appearance. Education of the population should in this way be approached more seriously and effectively.

## Introduction

Epidemiological studies add up as a large area of scientific research and play an important role, because they reveal the prevalence and incidence of several diseases and particularize their distribution according to specific characteristics of the environment where they are being analyzed [6].

In recent years, public and health professionals have become more aware of the importance of oral mucosal lesions. Apart from evaluation of oral health for dental caries and periodontal diseases, the need for epidemiologic study of oral cancer and other oral mucosal conditions, especially related to human immunodeficiency virus (HIV) or hepatitis-B virus (HBV) infections is also being emphasized [2].

Several authors have published epidemiological studies of oral lesions in several reference centers, and the most frequent lesions were: nonspecific chronic inflammation, inflammatory fibroepithelial hyperplasia, fibroma, mucocele, hemangioma, pyogenic granuloma, radicular cysts and odontogenic squamous cell carcinoma [3, 7, 8, 10-12].

The oral mucosa serves as a protective barrier against trauma, pathogens, and carcinogenic agents. It can be affected by a wide variety of lesions and conditions, some of which are harmless while others may have serious complications, as cancer. Identification and treatment of these pathologies are an important part of total oral health care. Hence, oral soft tissue examination is crucial, and it should be done in a systematic manner to include all parts of the oral cavity [1].

In this way, the aim of this study is to evaluate the epidemiological profile of patients attended in 25 years of campaigns oral cancer prevention in the state of Paraná, Brazil, between 1988 and 2013, assess the frequency of the most common lesions founded, and compare them with world literature.

## Material and methods

Volunteer patients were evaluated during 25 years of oral cancer prevention campaigns in the state of Paraná, Brazil, between 1988 and 2013 and approximately 400 municipalities in the state received the campaign team.

All patients were evaluated in a systematic way with inspection of all intra-oral areas, with wooden spatulas and appropriated lighting.

Among patients, the majorities were older than 30 years, due to the epidemiological profile of the prevalence of oral cancer in Brazil being of patients with above referred ages.

A questionnaire with data relating to harmful health habits, family history of cancer, family income, frequency of visits to dentists and knowledge on the subject was applied.

## Results

After the analysis of the database of patients assisted by the campaign, it was found that a total of 22300 patients were attended during the 25 years of projects. Of these, 3731 had oral lesions and 18569 patients had no oral alterations during the dentist evaluation.

Regarding gender, 13779 (61.78%) were female and 8521 patients (38.78%) were male, over the age of 30 years in 99% of cases.

Among the patients evaluated 20129 (90.26%) were Caucasians and others belong to others ethnics groups.

The analysis of the harmful health habits showed that 843 (22.59%) were smokers, 578 (15.49%) used alcohol and 1386 (37.14%) used yerba mate.

The lesions were classified into groups, and the prevalence of lesions occurred as follows: 533 (14.28%) cases of lesions with aspect of leukoplakia, 1095 (29.34%) inflammatory lesions, 1934 (51.83%) of traumatic origin and 169 (4.5%) classified as other.

The final diagnosis of the lesions found in patients referred to the reference hospitals in the region cannot be assessed because they had been not followed-up.

The classification of groups can be visualized in table I.

**Table I** - Lesions found in each group

Leukoplakias	Oral lichen planus Candidiasis Actinic keratosis Oral leukoplakia
Inflammatory	Candidiasis Median rhomboid glossitis Black hairy tongue Mucositis Papilloma Paracoccidioidomycosis
Traumatic	Denture hyperplasia Oral Fibroma Traumatic ulcers Torus palatinus and torus mandibularis Mucocele Ranula
Other	Hemangiomas Lymphangiomas Pyogenic granulomas Amalgam tattoo Hyposalivation

## Discussion

Epidemiological studies add up a large area of scientific research and play an important role because they reveal the prevalence and incidence of several diseases and particularize their distribution according to specific characteristics of the environment where they are being analyzed. Several studies have been conducted in order to determine the frequency of oral lesions in different geographic regions in the world [1-5, 7, 9, 12]. In comparative analysis of the aforementioned studies observed markedly different prevalences, ranging from more to less expressive, which can be explained due to different culture, social and political characteristics of each region, especially internationally, such as the number of dental schools in the country, socioeconomic level of the region and the profile of the examined patient.

Our results showed a high prevalence of oral mucosal lesions among older patients, which emphasizes the importance of routine examination of the oral mucosa, particularly in adults [1]. By comparing this data with others publications is it possible to see that exists a minor prevalence of oral lesions in world literature, explained by the age pattern of the others studies that carried out examinations at all ages. Moreover, Brazil is considered a developing world economy.

In contrast to the data mentioned above, it is possible to observe statistically significant epidemiological differences inside the national territory. Kniest *et al.* [6] showed a prevalence of approximately 85% of injuries among all patients examined. In this study, the examinations were performed at a referral center where patients are referred to diagnosis and treatments. In our study patients presented themselves voluntarily without prior referral from another health professional, leading to a minor number of lesions found which justifies this epidemiological divergence.

Regarding the gender variables, 61.78% were female and 38.78% were male, corroborating previous research, in which the female was also the most affected by oral lesions [3, 6, 8]. It is known that a series of oral lesions affects more women than men, but the statistical data of all injuries added together for each gender is not known. This shows the greatest concern of women with oral health and not necessarily females are most affected by oral lesions.

The total number of malignant lesions and benign cannot be proven because patients had been not followed-up. Notwithstanding, other Brazilian research showed that approximately 95% of the lesions were benign and 5% were malignant [6, 8]. Probably, the number of malignant lesions found during the 25 years would not reach to 5%, which is because the patients had been examined in the field and randomly selected in cities that received the campaigns of Oral Cancer Prevention.

Correlating the occurrence of benign lesions it can be seen 14.28% of leukoplakia, 29.34% of inflammatory lesions, 51.83% of traumatic origin and 4.5% were classified as other. This reinforces the profile of individuals assisted in the campaign of prevention of oral cancer for which much is evaluated in an attempt to diagnose or treat benign lesions, including candidiasis, inflammatory fibrous hyperplasia, mucocele, fibroma and hyposalivation. Similar results were found by other studies on the prevalence of oral lesions [3, 8, 13].

## Conclusion

Epidemiological research of oral lesions in a specific geographic region establishes the real needs of this population and provides information to develop treatment plans and preventive actions towards the lesions found. By analyzing 25 years of prevention campaigns on oral cancer, we conclude that there is a necessity for greater investment in research plans on prevention of these diseases, because a large number of patients requiring care and treatment of oral diseases is still found. Educating the population is of paramount importance because it helps not only the dental professional, but also the patients themselves who were unaware of the presence of lesions inside their oral cavity. The campaigns has brought benefits to the health of the elderly population, so that, such strategies could be extended to other age groups and other regions of the country and could even serve as a basis for the development of prevention of oral cancer in other countries, considering, of course, the peculiarities of different realities.

## References

1. Ali M, Joseph B, Sundaram D. Prevalence of oral mucosal lesions in patients of the Kuwait University Dental Center. *Saudi Dent J.* 2013 Jul;25(3):111-8.
2. Bhatnagar P, Rai S, Bhatnagar G, Kaur M, Goel S, Prabhat M. Prevalence study of oral mucosal lesions, mucosal variants, and treatment required for patients reporting to a dental school in North India: in accordance with WHO guidelines. *J Family Community Med.* 2013 Jan;20(1):41-8.
3. Cavalcante ASR, Marsílio AL, Kühne SS, Carvalho YR. Lesões bucais de tecido mole e ósseo em crianças e adolescentes. *Pós-Grad Rev Fac Odontol São José dos Campos.* 1999;2(1):67-75.
4. Fortes TMV, Queiroz LMG, Piva MR, Silveira EJD. Estudo epidemiológico de lesões proliferativas não neoplásicas da mucosa oral – análise de 20 anos. *Ciênc Odontol Bras.* 2002;5(3):54-61.
5. Izidoro FA, Izidoro ACSA, Semprebom AM, Stramandinoli RT, Ávila LFC. Estudo epidemiológico de lesões bucais no ambulatório de estomatologia do Hospital Geral de Curitiba. *Rev Dens.* 2007 Nov-Dec;15(2):99.
6. Kniest G, Stramandinoli RT, Ávila LFC, Izidoro ACAS. Frequência das lesões bucais diagnosticadas no Centro de Especialidades Odontológicas de Tubarão (SC). *RSBO.* 2011 Jan-Mar;8(1):13-8.
7. Lima GS, Fontes ST, Araújo LMA, Etges A, Tarquínio SBC, Gomes APN. A survey of oral and maxillofacial biopsies in children. A single-center retrospective study of 20 years in Pelotas-Brazil. *J Appl Oral Sci.* 2008;16(6):397-402.
8. Marin HJI, Silveira MMF, Souza GFM, Pereira JRD. Lesões bucais: concordância diagnóstica na Faculdade de Odontologia de Pernambuco. *Odontol Clín Científ.* 2007;6(4):315-8.
9. Martins JS, Abreu SC, Araújo ME, Bourget MM, Campos FL, Grigoletto MV et al. Strategies and results of the oral cancer prevention campaign among the elderly in São Paulo, Brazil, 2001 to 2009. *Rev Panam Salud Publica.* 2012 Mar;31(3):246-52.
10. Miyachi S, Tommasi MHM, Zardo F, Sugita RK, Gevaerd S, Giuriatti WA et al. Oral cavity lesions diagnostic center: potential impact in oral cancer epidemiology in Curitiba. *BCI.* 2002;9(33):80-5.
11. Rocha DAP, Oliveira LMM, Souza LB. Neoplasias benignas da cavidade oral: estudo epidemiológico de 21 anos (1982-2002). *Rev Odontol Univ São Paulo.* 2006;18(1):53-60.
12. Sobral APV. Estudo epidemiológico de 2.147 casos de lesões bucomaxilofaciais. *RBPO.* 2007;2(4):70-81.
13. Vieira VG, Fernandes AM, Machado APB, Grossman SMC, Aguiar MCF. Prevalência das alterações da normalidade e lesões da mucosa bucal em pacientes atendidos nas Clínicas Integradas de Atenção Primária (Ciaps) da Faculdade de Odontologia / UFMG. *Arq Odontol.* 2007;43(1):13-8.