

Journal section: Oral Medicine and Pathology
 Publication Types: Research

doi:10.4317/jced.51934
<http://dx.doi.org/10.4317/jced.51934>

Prevalence of oral mucosal lesions in a Brazilian military police population

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Araújo VS, Godinho EL, Farias LC, Marques-Silva L, Santos SHS, Rodrigues-Neto JF, Ferreira RC, De-Paula AMB, Martins AMEBL, Guimarães AL. Prevalence of oral mucosal lesions in a Brazilian military police population. J Clin Exp Dent. 2015;7(2):e208-11.
<http://www.medicinaoral.com/odo/volumenes/v7i2/jcedv7i2p208.pdf>

Received: 04/08/2014
 Accepted: 04/12/2014

Article Number: 51934 <http://www.medicinaoral.com/odo/indice.htm>
 © Medicina Oral S. L. C.I.F. B 96689336 - eISSN: 1989-5488
 eMail: jced@jced.es
Indexed in:
 Pubmed
 Pubmed Central® (PMC)
 Scopus
 DOI® System

Abstract

Background: Data obtained from oral health surveys are very important for identifying disease-susceptible groups and for developing dental care and prevention programs. So, the purpose of the current article was to investigate the prevalence of oral mucosa lesions (OMLs) in a population of Brazilian police.

Material and Methods: Interviews and oral cavity examinations were performed on a sample of 395 police officers who were randomly selected by the calibrated researcher. The number of individuals was obtained by a sample calculation using the finite population correction. The diagnostic criteria were based on the WHO (1997) criteria and adapted to Brazilian surveys.

Results: In total, 8.61% of the population presented some OML. Traumatic injuries and benign migratory glossitis (BMG) were the most prevalent lesions.

Conclusions: The prevalence of potentially malignant disorders was lower than among the Brazilian population. The most prevalent lesion among the police officers was related to trauma. Patients dissatisfied with oral health had a higher risk of presenting OMLs.

Key words: Mouth disease, mouth mucosa, military personnel, public health, oral pathology, oral leukoplakia.

Introduction

Occupational dentistry has become an important tool in the overall provision of occupational health care (1). Data obtained from oral health surveys are important for identifying groups susceptible to disease and developing dental care and prevention programs (2,3). However,

few reports have examined the police population. Police activity involves frequent exposure to factors that may cause oral mucosal lesions (OMLs), such as armed confrontations, motor vehicle crashes and witnessing violent deaths (4,5). Additionally, environmental or local factors may affect police officers (6,7). It is important

to highlight the similar prevalence rate of stress disorders between countries in policemen despite the marked difference in assessment methodology, local levels of violence, quality and duration of the training, and socio-cultural factors (4). Considering these factors, the aim of the present study was to determine the frequency of OMLs in a Brazilian police population.

Patient and Methods

A total of 803 police officers from Montes Claros, Minas Gerais, Brazil were studied. All patients had access to medical and dentistry services. The number of participants was defined by a sample calculation using the finite population correction. A total of 395 randomly selected police officers were included.

-Data Collection

The data were collected in personal interviews with the police officers. Examination of the oral cavity was performed after free and informed consent term (TFIC) was obtained. Data were collected from September 2008 to July 2009 by an experienced researcher. Oral clinical examination was based on the WHO (1997) guidelines and adapted to Brazilian surveys, as described previously (8). Following the oral exam, patients who had some type of OML were referred to the Oral and Maxillofacial Pathology and Stomatology Service of Universidade Estadual de Montes Claros-Brazil for diagnosis and treatment. The exclusion criteria were a lack of patient acceptance and TFIC signature.

-Sociodemographic Variables

The sociodemographic conditions assessed were age, marital status, sex, and position on the police force. The question, “How satisfied are you with your oral health?” was used to assess satisfaction with oral health. This variable was dichotomized as positive (very satisfied, satisfied, neither satisfied nor dissatisfied) and negative (dissatisfied, very dissatisfied). Tobacco and drinking habits were classified as described previously (9,10). Only patients who had never smoked were considered non-smokers. Ex-drinkers and ex-smokers were considered as such if they had abstained from any type of drinking and smoking for at least one year. Physical description of skin color was not used because it is a poor predictor of genomic ancestry in Brazil (11). Data collection was conducted in accordance with the ethical principles of the Helsinki Declaration, version 2002. The study was approved by the relevant institutional revisional boarding process number 1187/08.

-Statistical Analysis

Descriptive analyses of OMLs were performed. Additionally, a multivariate analysis was performed using binary logistic regression to construct a model of variables to provide a better explanation for the risk of OMLs. All analyses were assessed using SPSS 17.0 (SPSS Inc., Chicago), and statistical significance was set at $p < 0.05$.

Results

A total of 8.61% of the studied population had some type of OML. The most common disorders were traumatic injuries (20.53%) and benign migratory glossitis (BMG) (20.59%) (Fig. 1). The prevalence of potential malignant disorders, such as oral leukoplakia and actinic cheilitis, was 0.3% and 0.5%, respectively (Table 1).

In multivariate analyses, dissatisfaction with oral health was an important factor associated with a higher risk of presenting OMLs (Table 2).

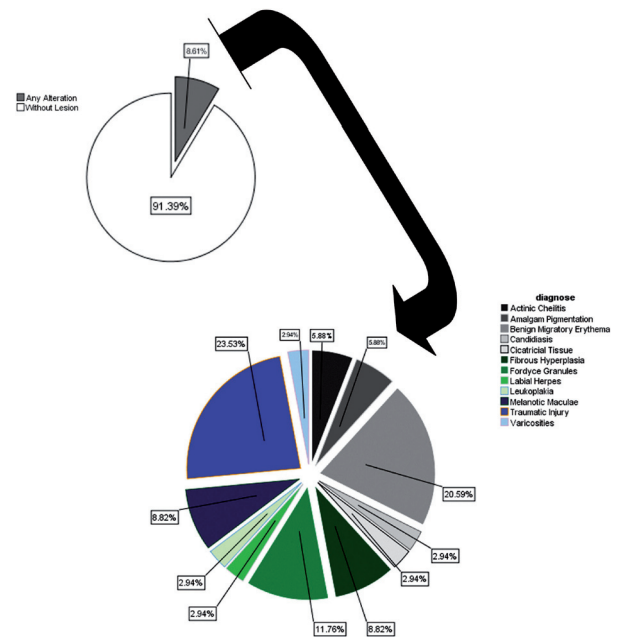


Fig. 1. Distribution of oral mucosal lesions in the population.

Table 1. Prevalence of Oral Mucosal Lesions.

	N	Percent
No alteration	361	91,4
Traumatic Injury	8	2,0
Benign Migratory Erythema	7	1,8
Fordyce Granules	4	1,0
Fibrous Hyperplasia	3	0,8
Melanotic Maculae	3	0,8
Actinic Cheilitis	2	0,5
Amalgam Pigmentation	2	0,5
Varicosities	1	0,3
Candidiasis	1	0,3
Leukoplakia	1	0,3
Labial Herpes	1	0,3
Cicatricial Tissue	1	0,3
Total	395	100,0

Table 2. Risk to present Oral Mucosal Lesions.

	P value	OR	95% C.I. for OR	
			Lower	Upper
Working Time				
≥15 Years			Referent	
<14 Years	0.440	0.711	0.299	1.691
Use of dental prosthesis				
Yes			Referent	
No	0.825	0.901	0.358	2.266
Satisfaction with oral health				
Satisfied			Referent	
Dissatisfied	0.041	2.672	1.039	6.872
Smoking				
No			Referent	
Yes	0.357	1.630	0.576	4.613
Alcohol consumption				
No			Referent	
Yes	0.170	0.418	0.120	1.454

OR: odds ratio; CI: confidence interval; n: total number. The model was fitted to the best-fit model. In bold results statistically significant.

Discussion

Countries and companies are increasingly interested in occupational diseases, at least partially because of their financial consequences and the economic value of prevention (12). In contrast, little information on police has been available in the literature. To date, no study has attempted to investigate OMLs among a police population. The main role of the Minas Gerais Military Police (Polícia Militar de Minas Gerais) is crime prevention and combat. To achieve their goals, police officers are frequently exposed to potentially traumatic situations, such as armed confrontations, motor vehicle crashes and witnessing violent deaths (4). With regard to work activity, police officers can also be exposed to a plethora of factors associated with OMLs, such as UVB radiation (6,7), infections (13-17), medical treatment (18), local/chronic irritation and deleterious habits (9,10). Individual predispositions to OMLs, such as genetic and epigenetic factors, could also be important for the police worker (19-25).

In the current study, the prevalence of potentially malignant disorders was lower than among the general south Brazilian population (26). A lower incidence of actinic cheilitis was observed among the police population compared to agricultural workers (26). Our data could be explained by the population analyzed in the present study presenting a lower incidence of smoking (20.2%) in comparison to previous studies (45.27%) (27). This fact could be a consequence of frequent preventive and curative programs provided to police officers. It is difficult to compare Brazilian studies on oral health due to

social differences (28) among study populations and the genetic diversity of the continental country population (11). It was observed that BMG represents 20.59% of all OMLs, with an incidence of 1.8%. Some reports in the literature indicate that BMG may be related to hormonal disturbances (29), psychological issues (30) and diabetes mellitus (31). However, the etiology of BMG remains unknown (32). Recently, we observed a possible association between genetic factors and BMG in a general population of the same state (21). In this context, future studies evaluating genetic predisposition to BMG would be useful to understand Brazilian variability. Traumatic injuries were the most prevalent findings observed in the current study and are directly associated with police activity. Finally, patients who were unsatisfied with oral health had a higher risk of presenting OMLs.

In conclusion, the most prevalent oral health issue among police officers was related to trauma. Patients who were dissatisfied with their oral health had a higher risk of presenting OMLs. Police position was associated with smoking and the need for a dental prosthesis.

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Acknowledgements

This study was supported by grants from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Fundação de Amparo a Pesquisa do Estado de Minas Gerais (FAPEMIG). Dr Guimarães is a CNPq research fellow. Dr. De Paula and Dr. Martins are research fellows at FAPEMIG.

Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.