

Oral Squamous Cell Carcinoma: Its Prevalence in Mexico

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ABSTRACT

Aim: To retrieve and analyze the published information on the prevalence of Oral Squamous Cell Carcinoma (OSCC) in Mexico.

Methods: A search in several international and Latin-American databases was performed and all published studies providing data on the incidence of OSCC in the Mexican population were included. We excluded all case reports as well as those articles with confusing results or inconsistencies. Analyzed data were kind of institution age, gender, location and microscopic diagnoses.

Results: We found ten publications on the frequency of oral cancer in different Mexican populations. Recovered data derived from files of hospitals, universities, private histopathological diagnostic services and programs of the Mexican Secretary of Health. These data showed there were wide differences in frequencies on kind of analyzed population, age, gender, location and microscopic diagnoses.

Conclusions: In view of the scarce available information, it is essential to perform studies at national level using standardized criteria on the prevalence of OSCC. There are not enough and reliable data to support that the available information could reflect the true situation of this disease in Mexico.

Keywords

Malignant tumors, Oral squamous cell carcinoma, Oral cancer, Prevalence, Degree of differentiation, Location.

Introduction

Cancer is a generic term for a large group of diseases that can affect any part of the body. Other terms used are malignant tumors and neoplasms. One defining feature of cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs, the latter process is referred to as metastasizing. Metastases are the major cause of death from cancer [1]. Oral cancer is a disease of multifactorial origin and risk factors vary and operate

differently for different populations. However, the established risk factors are tobacco in its numerous forms (smoking, smokeless and chewing); heavy alcohol consumption; HPV infection and a background of diets deficient in antioxidant vitamins and minerals [2].

Oral cancer compasses all malignancies arising in the oral tissues; it ranks sixth in the overall incidence for the 10 most common cancer sites worldwide and third in the developing countries [3] with an annual incidence of over 300,000 cases. There is also a marked disparity in geographic incidence between the high and low prevalence areas of the world suggesting that major geographic differences are associated to risk factors [3,4]. For statistical

purposes, oral cancer is commonly grouped together with cancer of the pharynx under the heading “oropharyngeal cancer” [5].

In México, some federal governmental institutions as the Secretary of Health, the National Institute of Geography and Statistics (initials in Spanish, INEGI), the Histopathological Registry of Malignant Neoplasms (initials in Spanish, RHNM) and the Oral Health Epidemiological Profile published data on oral cancer [6-8]. The most reliable data at national level was from the RHMN. In 1993, this institution initiated their epidemiological work on the frequency of all kinds of cancer in all regions of the human body. Unfortunately, the last year recording was 2006 and since that date, no official data on oral cancer frequency was found. Recently, the WHO reported on the frequency of oral cancer [9].

The aims of this study were to retrieve data from publications referring the prevalence of oral squamous cell carcinoma (OSCC) in the Mexican population and to analyze the reliable information.

Methods

We performed a retrospective bibliographic search in the MEDLINE/PubMed, Scopus, Google Scholar and Scielo databases using and combining the following words: oral cancer, oral squamous cell carcinoma, frequency, incidence, prevalence and Mexico. Only those studies providing data concerning the prevalence of OSCC in Mexican population were included; we excluded all case reports as well as those articles with confusing results or inconsistencies in the reported figures.

Review of the literature

According to the RHNM of the Mexican Secretary of Health [6], between 2004 and 2006, the frequency of oropharyngeal cancer was between 1.44% and 1.29% of the malignant neoplasms. According to data from the INEGI published in 2002, of the upper aero-digestive malignant neoplasms, oropharyngeal cancer occupied the 2nd place of all cancers and 5th place of the head and neck cancers [7]. Data reported by the Mexican Oral Health Epidemiological Profile [8]; from all cancers, 0.12% were oral cancer in women and 0.2% were diagnosed in men. WHO data shows OSCC was in 11th place of all cancers and its frequency was 2.7% [9].

We found 10 articles (Table 1) with reliable data on the incidence of OSCC in Mexico [10-19], those studies were made in Hospitals of the Secretary of Health (Hospital General de México [11], CMN 20 de Noviembre [12], CMN Siglo XXI [13], Instituto Nacional de Cancerología [10,16,18], and Hospital Central Militar [14,19], two were from files of two Universities [15,17], and one Private Oral Pathology Diagnosis Center [17]. It is important to emphasize that all studies were made from the files of institutions located in Mexico City.

From all the studies included in this analysis, seven reported specific data on OSCC [10-16] and others incorporated data on this neoplasm within heterogeneous samples of “oral cancer” cases including a variety of malignant neoplasms [17,18]. There

are marked differences among these studies analyzing OSCC incidence; some approached the subject in a general mode including all oral structures [11-14,18]. One study analyzed tongue examples and other studied lip cases only [10,16] and in their sample, Gaitan-Cepeda et al. [10] included biopsies of the head and neck region. However, they do not report data concerning the most frequently affected anatomical site. Likewise, Frias Mendivil et al. [13] and Mosqueda Taylor et al. [12] studies do not state the location of the tumors.

Ages of the affected patients varied widely, the youngest patient was 14 years old [16], whereas the older was 105 years-old age [18]. In most studies, a higher prevalence is reported for men [10-12,14,16-19]. Only Gallegos-Hernández et al. and Gaitan-Cepeda et al. reported it was more frequent in women [13,15]. Tumor size is almost unknown since only two studies reported on this feature [10,13]. Several papers reported that the most frequent location for OSCC was tongue followed by lips [11-12], but few of them informed that gingiva or palate could be in the 2nd place [13,14,18,19]. Five reports informed that the degree of differentiation of the neoplastic cells was very variable [10-12,14,15]. Hernandez-Guerrero et al. [11] included a series of cases diagnosed as carcinoma in situ, whereas Díaz-Villanueva et al. and Mosqueda-Taylor et al. included examples of verrucous carcinoma in their analyses [14,17]. In two large hospitals, frequency of OSCC was 0.3 and 0.37% of the cancer cases [12,14], 1.26% of frequency was found in the Gaitan-Cepeda et al. in a School of Dentistry-based study and surprisingly, the frequency of OSCC in the major Oncological Hospital of our country this frequency was unusually high (4.9%) [18].

Discussion

The amount of studies with reliable data on the incidence of OSCC performed in the Mexican population is scarce [10-19], for this reason we are convinced that the frequency of this neoplasm in the Mexican population is not well-established. Additionally, it should be pointed out that data from three studies coming from the archives of the major oncological institution in our country [10,16,18], and two other were made from records of the Mexican Army Hospital [14,19]. These studies cover and overlap the same time periods and may be their data are duplicated and perhaps overestimation on the incidence of the disease occurred. Data retrieved showed that OSCC was more frequently diagnosed in a major oncological center, followed by dental schools and general hospitals.

Almost all the published data shows that OSCC is more frequent in men [10-12,14,16-19], it appears at any age with a very wide age range, and mean age of the affected patients attended in the different institutions is over 50 years [10-19]. In the analyzed reports, the most frequent location for OSCC is tongue followed by lips [11,12,14], but in some others gingiva or palate appears in the 2nd place [13,18,19].

Data presented here is incomplete and comparing with data from other sources it varies widely. In Mexican studies, data on frequency of OSCC was retrieved from the files of different types of Medical

1st author (ref)	Institution	Gender			Age range	Mean Age (yrs)	More frequent location	Microscopic diagnosis				
		M	F	Total				OSCC			VC	CIS
								PD	MD	WD		
Salgado-Ramirez [11]	HCM	NS	NS	17	37-77	NS	Tongue	2	9	6	NS	NS
Hernández Guerrero [15]	HGM	310	221	531	16-98	62.5	Tongue	72	325	101	NS	33
Gaitan Cepeda [15]	FO-UNAM	75	92	167	NS	M= 55.6 F= 54.4	NS	NS	NS	NS	NS	NS
Meza Garcia [12]	CMN 20 N	33	16	49	32-94	68	Tongue	5	9	35	NS	NS
Gallegos-Hernández [13]	CMN S XXI	22	26	48	28-83	57	Tongue	NS	NS	NS	NS	NS
Luna-Ortiz [16]	INCAN	57	25	82	NS	70	Lower lip	NS	NS	NS	NS	NS
Díaz-Villanueva [14]	HCM	30	12	42	27-101	67	Tongue	10	13	18	1	NS
Mosqueda-Taylor [17]	UAM-X, PERIBACT	46	34	80	<10- 70>	NS	Tongue	NS	NS	NS	5	NS
Frias-Mendivil [18]	INCAN	290	161	451	15-105	M= 60.9 F= 59.5	Tongue	NS	NS	NS	NS	NS
Ramirez-Amador [10]	INCAN	104	57	161	19-90	60	Tongue	10	66	85	NS	NS

Table 1: COCE. Studies of incidence in Mexican population.

HGM= Hospital General de México. FO-UNAM= Facultad de Odontología-Universidad Nacional Autónoma de México. CMN 20 N= Centro Médico Nacional Siglo XXI. INCAN= Instituto Nacional de Cancerología. HCM= Hospital Central Militar. UAM-X= Universidad Autónoma Metropolitana-Xochimilco. PERIBACT= Servicio Privado de Diagnóstico.

PD= Poorly differentiated. MD= Moderately differentiated. WD= Well differentiated. CV= Verrucous Carcinoma. CIS= Carcinoma in situ. NS= Not Stated.

and Dental institutions, but data on its incidence was stated in only four reports [12,14,15,18] and it varied widely from 0.003% to 4.9%. Suggesting that disagreement among these findings may be associated to the kind of institution where files were analyzed. Data on frequency from the Epidemiological Profile of the Oral Health from 2004 to 2008 and that published by the RHNM in Mexico during 2004 to 2006 both showed little variation (1.66% to 1.91% and 0.75% to 0.84% respectively). As can be seen, all the above compared figures are very different and reinforce the point of view that these differences may be related to the methodology for retrieval data.

This review presents the most reliable data on OSCC available from Mexican institutions. In view that official information available on this issue is very old and data published in journals is scarce, we consider that figures inscribed in this manuscript does not reveal the true incidence of OSCC in the Mexican population. New information on this regard from more well-structured studies will help to know the frequency and features of this disease in the Mexican population.

Conclusions

- Reliable data on the frequency of OSCC in Mexican population is scarce.
- It is essential to perform new studies at national level using standardized criteria.

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