

Systematic review of the epidemiology of oral cancer in Brazil

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Abstract

Considering the role of epidemiological information in planning and effective interventions, the purpose of this study was to systematically review the epidemiology of squamous cell carcinoma in Brazil. We searched the PubMed, LILACS, BBO and Cochrane databases using keywords "oral squamous cell carcinoma", "oral squamous cell carcinoma", "oral squamous cell carcinoma" and their equivalents in English and Spanish, in combination with epidemiology, prevalence, frequency, and Brazil by 2018, excluding studies that did not address the epidemiology of this neoplasm or those conducted in other countries. The mean age of the patients was 56.6 years, with a higher prevalence in males 3.29: 1, mainly located in tongue, 42% and mouth floor 22%. Associated risk factors are tobacco (72.85%) and alcohol (66.65%). It was observed that 47% of patients present with regional metastases at the time of cancer discovery. According to the observed observational studies it can be concluded that the epidemiological data of Brazil are high in comparison to other countries, especially the number of metastases, indicating the late diagnosis of the disease

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Systematic review of the epidemiology of oral cancer in Brazil

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ABSTRACT

Considering the role of epidemiological information in planning and effective interventions, the purpose of this study was to systematically review the epidemiology of squamous cell carcinoma in Brazil. We searched the PubMed, LILACS, BBO and Cochrane databases using keywords "oral squamous cell carcinoma", "oral squamous cell carcinoma", "oral squamous cell carcinoma" and their equivalents in English and Spanish, in combination with epidemiology, prevalence, frequency, and Brazil by 2018, excluding studies that did not address the epidemiology of this neoplasm or those conducted in other countries. The mean age of the patients was 56.6 years, with a higher prevalence in males 3.29: 1, mainly located in tongue, 42% and mouth floor 22%. Associated risk factors are tobacco (72.85%) and alcohol (66.65%). It was observed that 47% of patients present with regional metastases at the time of cancer discovery. According to the observed observational studies it can be concluded that the epidemiological data of Brazil are high in comparison to other countries, especially the number of metastases, indicating the late diagnosis of the disease

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INTRODUCTION

Mouth cancer or oral cancer is according to WHO, the cancer that affects the lips and the interior of the oral cavity. Among the most prevalent malignant neoplasms of the mouth in Brazil, it can be highlighted that squamous cell carcinoma (SCC) is the most commonly found, corresponding to about 90% of the diagnosed cases. The diagnosis is late, which results in a survival rate of less than 50% (Pimenta Amaral et al., 2004; Gervásio et al., 2001).

Clinically ECC is a pathology that has a predilection for elderly men. The lesion has several aspects, and may be exophytic, endophytic (invasive, ulcerated), leucoplasic, erythroplastic or erythroleukoplasic (Neville et al., 2009).

This pathology is between the fifth and seventh most prevalent type of cancer, depending on the region of the world (Gervásio et al., 2001, Faggons et al., 2015), and has become an alarming problem of health and social conditions around the world, with variations in incidence up to 20 times in some regions of the planet (Warnakulasuriya, 2009).

With an annual incidence of almost 300,000 new cases in the world, developing countries, among them Brazil, correspond to almost 2/3 (two thirds) of these numbers (Sharma et al., 2010; Oliveira et al., 2015). Saba et al. (2011) stated that there are more than half a million people with oral squamous cell carcinoma in the world.

MATERIALS AND METHODS

The present study was submitted to the Research Ethics Committee of the São Leopoldo Mandic Faculty and exempted from being submitted to the analysis according to protocol nº 2017/7705 (Annex A).

The methodology of this study followed the methodological guidelines for the elaboration of a systematic review of comparative observational studies on risk factors and prognosis of the Ministry of Health.

We selected articles published in the international and national literature on Oral Squamous Cell Carcinoma, taking into account the prevalence of gender, age, ethnicity, intraoral anatomical site, alcoholism, smoking and the occurrence of local metastases. The publications were selected for their titles and / or abstracts, and later analyzed by inclusion and exclusion criteria.

SYSTEMATIC REVIEW

EPIDEMIOLOGY

Bonfante et al. (2014) performed a systematic review of authorization records for radiotherapy and / or chemotherapy by the Unified Health System, between 2000 and 2006, whose objective was "to analyze the specific five-year survival and associated factors for oral cancer in Brazil." It was a retrospective cohort, whose data source was the Onco Base, which performed the probabilistic-deterministic relationship of all records.

The study included patients diagnosed between 2002 and 2003 with oral cancer, except lip, and age between 19 and 100 years (N = 6,180). The specific five-year survival rate was 60%. They were associated with the lowest specific survival age > 40 years; stage III or IV; location of tumor on tongue, floor of mouth and base of tongue; have not undergone surgical treatment, only chemotherapy and / or radiotherapy and reside in certain states of Brazil.

Pimenta Amaral et al. (2009) reviewed the records of patients with SCC in the tongue and floor of the mouth between 1965 and 1998 at the A. C. Camargo Cancer Hospital in São Paulo. This study included 193 patients between 29 and 89 years of age, where 44% were in clinical stage I, and 56% in clinical stage

II. 27 patients had lymph node metastasis. The only factor associated with the presence of occult metastasis was the fact that there was muscle infiltration; for tumors in the tongue there was the presence of vascular embolism and desmoplastic reaction; and for floor of mouth, a histological gradient. The factor associated with tumor-free prognosis at five years was the presence of muscle infiltrate, the patient's gender, and the clinical stage. Tumors in the tongue and early-stage floor of the mouth that presented muscle infiltrate showed a greater probability of hidden metastasis and shorter survival.

Santos et al. (2010) presented a study that demonstrated a high incidence of oral cancer mortality throughout Brazil, mainly due to the delay in diagnosis. The objective of the authors was to conduct a cross-sectional study in 74 patients diagnosed with SCC in a hospital in Alagoas, through a semi-structured interview to obtain: sociodemographic data, the type of professional help sought by the patients, the symptomatology and the stage of the tumor at the moment of the diagnosis. According to the results obtained in this study, the patients usually sought a physician, not a dentist, even with the lesion being in the mouth, only being referred to the specialist already in advanced stages of the disease.

Rotundo et al. (2013) evaluated the association of prosthesis use with the risk of oral cancer arising from a survey of 71 cases of oral cancer in two hospitals in São Paulo, and 240 cases without the disease. All cases have been confirmed to be squamous cell carcinoma in the mouth in patients with complaints of pain due to maladaptive prostheses. Although still controversial, this study indicated the hypothesis of an association between trauma due to poorly adapted prostheses and the appearance of oral cancer, a factor not elucidated in the world literature, requiring more comprehensive studies.

Perussi et al. (2002) verified the influence of the sex variables and the location of the primary tumor on survival in the elderly with cancer of the mouth. To this end, the authors conducted a retrospective study of 1440 clinical files of patients with squamous cell carcinoma of the mouth of the Head and Neck Surgery Service of Hospital Heliópolis, São Paulo, 1978-1997. There were 562 elderly and 878 in the 1st and 2nd ages, comparing the frequencies of the study variables (sex and tumor location).

The results of the work described above demonstrated that the frequency of oral cancer in the elderly remained stable in the period studied (39.5% in 1978-87 vs 38.2% in 1989-1997). The male / female ratio was 3: 1 in patients over 60 years and 8: 1 before 60 years. It was observed a predominance in the elderly of cancer of the region of jugal mucosa (56%) and palate (47%) when compared to tumors of younger patients located on tongue and floor (67%) and tongue (62%). The study concluded that there is a greater proportion of women with oral cancer among the elderly when correlated to the 1st and 2nd ages. Comparatively, palatal tumors were more frequent in individuals younger than 60 years, while tongue and floor localization occurred more frequently in patients aged 60 years and older. The differences observed in relation to gender and location were not reflected in changes in survival of the patients studied.

Losi-Guembarovski et al. (2009) stated that oral carcinoma is the sixth most common CA type worldwide, and the seventh most common type in Brazil, which is the country with the highest incidence rate of this disease in Latin America. With an average of five years of survival - one of the lowest rates among cancers in general. The objective of the present study was to compare the epidemiological, clinical and histological characteristics of 91 patients with oral SCC, with a mean age of 58.62 ± 10.46 years and the male / female ratio of 6.6: 1.0 (79 male and 12 female). Descendants of Europeans were predominant, with 79 patients

(86.8%). Eighty-five individuals were smokers (93.4%) and 70 (76.9%) regularly consumed alcohol. The anatomical distribution of the tumor was: 27 patients (29.7%) with tongue tumor; 18 (19.8%) on the floor of the mouth; 11 (12.1%) in oropharynx; and 11 (12.1%) in unspecified oral mucosa. Fifty-seven patients (62.6%) had involvement of lymph nodes and three had distant metastases (3.3%). Surgery and radiotherapy were applied in 43.2% of the patients.

Oliveira et al. (2015) observed demographic, clinical and therapeutic characteristics, as well as risk factors for assessing the prognosis of patients with primary oral SCC between 2000 and 2010 in public hospitals in Uruguay. The demographic and clinical characteristics, risk factors, and treatment used were considered. Of the 200 patients with oral SCC, 79.4% were men (3.8: 1 man / woman), with a mean age of 60.75 ± 11.26 . Alcohol consumption and tobacco use were reported by 85.3% and 63.5% of the patients, respectively. The most affected site was the language (42.5%). Surgery was the most common treatment option and there was a 58.5% survival rate.

Marocchio et al. (2010) evaluated differences in data presented between patients with SCC between the years 1960 and 2008, in a total of 1,564 cases reviewed. The analyzed variables were sex, age, ethnicity, prevalent anatomic site, duration and size of the lesion. In their findings, men are more affected than women, in a ratio of 3: 1. There is a significant increase in lesion appearance in patients over 80 years of age. The gum was the most affected site, followed by the lower lip. Small lesions were found, and the development time of these lesions was also short.

Marques et al. (2008) associated oral hygiene practices with the appearance of oral CA. To do so, they performed a control case study in hospitals in the metropolitan area of São Paulo from 1998 to 2002 in a total of 309 patients with ECC in the mouth and 468 control cases. The authors concluded that total prosthesis use is not associated with oral cancer but is strongly associated with gingival bleeding. Those patients who never visited a dental surgeon were more likely to have oral CA. Indicating a certain predisposition for oral cancer, independent of tobacco use and alcohol consumption.

Durazzo et al. (2005) reviewed the records of patients who underwent oral cancer surgery at a School Hospital between 1994 and 2002, in order to describe the clinical and epidemiological characteristics of the same. The results showed that a total of 374 patients were operated on. The ages ranged from 14 to 94 years (mean = 57.4 years), being 255 men (68.2%), and 295 Caucasian (80.6%). The majority of patients had tumors on the tongue and / or floor of the mouth (5.6%), while 20.3% had lip cancer. Squamous cell carcinoma was found in 90.3% of the cases. Approximately 62% did not present regional metastases, and there was a relative incidence in young patients (40 years or less) of 8.6%.

Gervásio et al. (2001) analyzed the records of 740 patients with oral squamous cell carcinoma in two Belo Horizonte hospitals between 1986 and 1996. The male / female ratio was 4.8: 1. The mean age was 58.6 years. The majority The study showed a relationship of lesion development with smoking and alcohol habits.

In a study of 91 patients, 37 cases of squamous cell carcinoma in the lip and 54 cases in the oral cavity, Batista et al. (2010) observed a predominance of men. Of these, 66.7% were Caucasians, 88.23% were intraoral lesions and 87.5% were lesions on the lips. The vast majority, in both cases, were alcoholics and

smokers, and in the case of patients who had carcinoma on their lips, they had been frequently exposed to the sun. The lower lip was the most affected (89.19%).

In relation to metastases, Batista et al. (2010), by the Cox analysis, observed with respect to the microscopic findings that there were a significant number of cases with intense inflammatory infiltrate located adjacent to the lip tumor, in relation to the intraoral one. Quantitative analysis of the proliferation index demonstrated a high percentage of PCNA and Ki 67 - positive cells in oral SCC, when compared to CCEL, in any of the stages.

Maleki et al. (2015) conducted a systematic review of oral cancer in Iran. This publication stated that the mean age of the patients was 54 years +/- 15.1 years, with the tongue being the most affected site in 29.9% the most prevalent type of malignant neoplasm was SCC in 70% of cases. The authors found the association with tobacco as the main risk factor associated with the conclusion that the study can help to improve the current programs and interventions for the control and combat of CCE.

Feller & Lemmer (2012) stated in an epidemiological study in the USA that oral SCC more often affects men than women 1.5: 1 most likely because more men than women enjoy high-risk habits. The likelihood of developing oral SCC increases with the exposure period to risk factors, and increasing age adds to the new dimension of age-related mutagenesis and epigenetic changes. In this country the median age of diagnosis of SCC is 62 years. However, the incidence of oral SCC in people under the age of 45 is increasing. The reason for this is unclear according to the authors.

In Western countries, oral SCC affects the tongue in 20% - 40% of cases and the floor of the mouth in 15% - 20% of cases, and together these sites about 50% of all cases of oral SCC. The gums, palate, retromolar area and jugal and labial mucosa are less frequently affected oral sites.

Al-Jaber et al. (2016) through a systematic review evaluated the epidemiology of oral cancer in Arab countries. They reported that oral cancer patients were mostly in the fifth to sixth decades of life, and the incidence at younger ages was reported in some Arab countries. Yemenis have an alarmingly high prevalence of OC among people under 45 years of age. Exposures to alcohol consumption and solar radiation were cited as possible risk factors. The sites most affected were tongue, floor of the mouth and lower lip at the affected site were attributed to the sociocultural behavior of the populations studied. SCC was the most commonly detected tumor and, in general, patients were in the late stages (III and IV) at the time of diagnosis.

CONCLUSION

Based on the results of this systematic review it can be concluded that:

- a) squamous cell carcinoma has male predilection in the age range between 50 and 60 years;
- b) the main sites of intraoral location in the patients found were the tongue, followed by the floor of the mouth and the gingiva;
- c) among the risk factors for the appearance of CCEO, smoking and alcoholism were habit of 72.85% and 66.65% respectively of the patients;
- d) about half of the patients already had regional metastases at the time of the discovery of the disease;

e) data on survival analysis after 5 years could not be compared due to the methodological disparity of the included studies.

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