ORIGINAL ARTICLE

Epidemiological profile of oral squamous cell carcinoma in a Northeastern Brazilian state

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Abstract

Introduction: Oral squamous cell carcinoma (OSCC) is considered the 6th most frequent worldwide type of cancer. Epidemiological surveys of cancer are important to understand how its distribution occurs in population, to create public policy of prevention and improvement of reference centers for treatment of this disease. **Objective:** To analyze the OSCC prevalence in Alagoas and draw the patients' clinical profile providing guiding data to health professionals according to profile of the lesion. **Materials and Methods:** A retrospective analysis of 341 medical charts of patients diagnosed with OSCC was performed at reference hospital for cancer treatment in Alagoas. **Results:** Out of 341 patients analyzed, 217 (63.6%) were men and 124 (36.4%) were women. The mean age for men was 59.86 years and 63.16 years for women. There was a predominance of individuals who did not complete the elementary school (62.8%). The tongue was the most affected by OSCC. The majority of lesion was in clinical stage III. So, the first therapeutic scheme of choice was the association of radiotherapy and chemotherapy. **Conclusion:** Low educational level and poor socioeconomic development rates show that individuals affected by OSCC are probably more vulnerable to etiological agents often related to its occurrence.

Keywords: epidemiology; carcinoma; squamous cell; oral cancer; mouth.

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Introduction

Oral squamous cell carcinoma is the malignant neoplasm that originates from the lining epithelium of the mucosa of the mouth, being considered the sixth type of cancer most frequent throughout the world[1,2].

Brazil presents the largest incidence of oral cancer of Latin America[3]. The National Cancer Institute (INCA) (2018) estimated for the country 11.200 new cases of mouth cancer in men and 3.500 in women, representing, respectively, 5.2% and 1.1% of all cases diagnosed in the Brazilian population[4].

Multiple factors are involved in its development, however, it is well established that chronic use of tobacco and alcohol acts as the main risk factors for the development of this disease[5].

The incidence, degree of morbidity and mortality related to oral SCC differ from one country to other and even in different regions of the same country,

especially due to the differences in the lifestyle of the population, habits, socioeconomic characteristics, cultural inheritance, intellectual degree, life expectancy and quality of health services[6].

Generally, the existence of a direct relationship between socio-economic conditions (lifestyle) and oral SCC is observed in Brazil, and socially less-favored population groups are more likely to have higher contact with the risk factors (tobacco and alcohol) as well as are more associated with precarious oral health conditions and nutritional deficiencies[7].

The aim of this study was to analyze the prevalence and the clinical-epidemiological characteristics of oral SCC in the state of Alagoas, since such surveys are of great importance to understand how the disease distribution occurs in the population and, from this, assist the creation of public policies for the prevention and improvement of the reference centers for cancer treatment.

Methods

This is a retrospective transversal study, with comparative analysis of the clinical-epidemiological parameters of 341 medical records of patients diagnosed with oral SCC, attended in the period from 2006 to 2012, in a reference hospital for cancer treatment in the state of Alagoas. This research had its contents approved by the Institutional Revision Board of the Federal University of Alagoas (No: 608.619).

The clinical-epidemiological parameters analyzed of the selected patients for the sample were: gender, age, degree of schooling, habits and addictions (tobacco and alcohol), occupation, location and staging of the tumor, and type of treatment performed. Patients whose charts did not present sufficient information were excluded from the study.

The information gathered in this study was tabulated in Microsoft Excel Software (Microsoft Corporation®, USA) and subsequently transferred to the SPSS 20 for Windows software (statistical Package for Social Sciences; IBM®, USA). A descriptive analysis was carried out, and subsequently the quantitative variables were presented in the form of absolute and relative frequencies.

Results

Of the 341 patients analyzed in this study, 217 (63.6%) were men and 124 (36.4%) women, in a relationship of 1.75:1. At the time of diagnosis, the average age for men was 59.86 years and for women was 63.16 years. Considering the age group, a higher prevalence of men affected in the sixth decade of life was observed, while women were more affected from the eighth decade of life (Figure 1).

As far as degree of schooling was concerned there was a predominance of individuals who did not complete primary education (62.8%), followed by illiterate individuals (21.7%).

In relation to the occupations of patients of the male gender, 51.2% were retired, 21.7% farmers and in 27.1% of the medical records this information

was absent. In relation to women, the incidence of the neoplasia was higher in those who were housewives (46.8%), secondly the retirees (34.7%) and the other professions represented, together, 18.5% of the cases.

Smoking and alcoholism could not be evaluated in this study because of the scarcity of data about these variables, considering that obtaining this information was not considered mandatory in the reference hospital where the study was carried out.

The anatomical region of the oral cavity more affected in men was the oral tongue (41%), followed by the floor of the mouth (25.3%), hard palate (10.1%) and lip (7.8%). In women, the tongue was also the most affected anatomical site, in 29.8% of the cases, followed by the hard palate (23.4%), floor of the mouth (17.7%) and lip (10.5%) (Figure 2).

In relation to the clinical stage of the lesions according to the TNM system, most cases were classified in stage III (41.9% in men and 36.3% in women), followed by stage II (14.7% in men and 23.4% in women), with no stage I case (Figure 3).

The first therapeutic scheme of choice for patients was the association of radiotherapy and chemotherapy (49.3% in men and 33.9% in women), followed by radiotherapy (18.9% of male records and 29% of females).
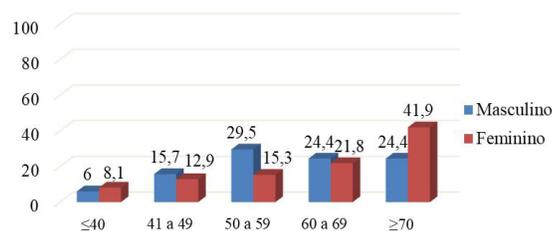

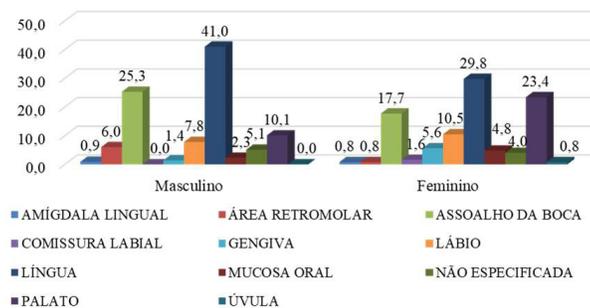**Figure 1.** Frequency of CCELO cases according to age group.

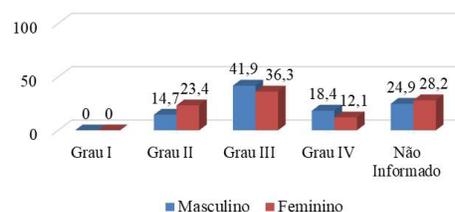**Figure 2.** Distribution of CCEO cases regarding anatomical location.

Figure 3. Distribution of frequency relating to the staging of CCEO cases.

Discussion

Oral SCC is the sixth most common malignant neoplasm in the world with more than 50% of patients diagnosed in advanced stages. Many clinical variables have been identified in the quest to establish prognosis factors for this neoplasm. However, the high mortality rates found in different populations have remained virtually unchanged, motivating the search for prognosis factors that might better predict the patient's livelihood[1].

In this study, a greater incidence in men (63.6%) was demonstrated, mainly distributed from the sixth decade of life. Similar findings are described in most of the literature[8,9]. Over the past few years, an increase in the number of cases of the disease has been observed among younger patients and in women with no history of association with the most often associated risk factors[10,11]. It is speculated that in these cases individual genetic susceptibility influences the emergence of oral SCC, and the mutations related to DNA repair genes have been given great prominence[12].

Regarding the level of education, this survey revealed that 62.8% of patients did not complete elementary school, followed by those who were illiterate (21.7%). The profile of patients with oral cancer is reported as low educational level and, consequently, associated with a low purchasing power, which contributes to poor oral hygiene, malnutrition conditions and higher exposure to tobacco and alcohol, reality quite common in developing countries, such as Brazil[13].

The occupations most performed by the sample patients were agriculture (21.7%) for men and housewives (46.8%) for women. The major obstacle during the analysis of this data in the records was the filling of the occupation in the retired category (51.2% for men and 34.7% for women). By classifying patients as retired, without, however, highlighting the profession previously exercised, it was difficult to understand the influence of occupational factors in the risk of developing oral SCC in a given population.

Although the data related to the habits and addictions of the patients of this sample are not present in the analyzed charts, it is known that the consumption of tobacco and alcohol appears as the main etiological factor associated with the development of the oral cancer. The effect of these agents is dose-dependent and time-dependent, in this way the combination of these two factors significantly increases the risk for the development of this tumor[14]. It should also be considered that smokers and alcoholics individuals present 20 times more likely to develop recurrences or second primary tumors in the mouth or in the digestive tract when compared to non-smoking and non-alcoholic individuals, mainly when they maintain the consumption of tobacco and alcohol after the initial diagnosis of the primary tumor[15,16].

The most frequent oral anatomical site in patients analyzed was the oral tongue, however, the floor of the mouth, hard palate and lips were also commonly affected. El-Mofty[17] claim that the main sites of oral SCC involvement are the tongue and the floor of the mouth. Choi et al[18]. noted that the tongue has been the main site of involvement in countries with high consumption of tobacco and alcohol, while Lucena et al.[19] emphasized that in countries

where the population is exposed in a chronic and unprotected way to solar radiation, the lower lips appear as a site also quite affected.

To assist the classification and stage of malignant tumors, the staging system TNM (T: primary tumor size; N: lymph node metastasis and M: distant metastases) which is a clinical tool that standardized the description and universal communication of services that treat cancer, assisting in the choice of treatment and helping to predict the course of the disease[19,20]. Stage III had the highest incidence. This result coincides with those of other authors who carried out similar surveys in other areas of the Brazilian Northeast[21,22].

In a previous retrospective study in the state of Alagoas, it was found that 41.9% of patients had already noticed the presence of the lesion in the oral cavity, but they only sought the health services when it began to present symptoms, which probably reflects the progression of the tumor. Moreover, in many cases, referrals to reference services made by doctors or dentists were carried out late, which demonstrates the lack of knowledge and unpreparedness of some of these professionals in the initial identification of oral SCC[23]. The early diagnosis provides a survival rate of 80% in 5 years, while the late-stage diagnosis decreases this rate to only 20%[24]. Despite recent advances in the oncological treatment, the prognosis of patients is still controversial, mainly due to the advanced stage of the tumor at the time of diagnosis[25,26].

As a result of late diagnosis and predominance of lesions at advanced stage, the treatment of initial choice in patients analyzed was the association of radiotherapy and chemotherapy (49.3% in men and 33.9% in women). The therapeutic scheme is based on the use of surgery, radiotherapy and chemotherapy, which, depending on the case, can be used in an isolated or concomitant way. Chemotherapeutic protocols in combination with radiotherapeutic regimes are indicated for patients in more advanced stages, as in patients analyzed here, and has demonstrated improvement in the local control of the disease so that subsequently the patient can present clinical conditions to be subjected to surgical procedures[27,28].

We reinforce the great importance of studies aimed at determining the profile of patients with oral cancer, since from the results obtained it is possible to establish the needs of a particular population, thus being able to assist in the establishment of prevention actions and improved access to therapeutic services.

Conclusion

The low levels of schooling and poor socio-economic development indices cause individuals affected by CCEB to be probably more vulnerable to etiological agents often related to the occurrence of the disease. Moreover, the lack of information and the precarious access to health services prevent early diagnosis of the tumor, thus hindering the therapeutic approach and compromising the patients' life.

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