Epidemiological and Clinical Evaluation of Patients with Oral Squamous Cell Carcinoma

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Avaliação Clínico-epidemiológica de Pacientes com Carcinoma de Células Escamosas Oral

Evaluación Epidemiológica y Clínica de Pacientes con Carcinoma Oral de Células Escamosas

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ABSTRACT

Introduction: Oral cancer corresponds to about 30% of all head and neck tumors. Approximately 90% of these malignancies are squamous cell carcinomas (SCC) and about 15 thousand new cases are estimated each year in Brazil. **Objective:** Evaluate the clinical and epidemiological aspects of patients with oral SCC. **Method:** Observational cross-sectional, quantitative and retrospective design study, based on the analysis of medical records of patients with histopathological diagnosis of oral SCC treated at a reference center in oncology in Brazil's Northeast. Clinical and epidemiological variables were collected and analyzed. Statistical analysis was performed using the chi-square test (p≤0.05). **Results:** Among the 298 medical records evaluated, male patients predominated (75.2%), with an average age of 60.4 years, smokers and alcoholics (62.0%). The most reported complaint was the presence of a wound or injury in the mouth (61.1%) and the most common location was the tongue (62.1%). Clinical variables revealed advanced clinical staging (III or IV) in 76.4% of patients. Among patients aged up to 50 years, there was high concentration of men (p=0.015) and greater use of alcohol than among patients over 50 years (p=0.010). The other variables did not show a statistically significant difference between the groups. **Conclusion:** The clinical and epidemiological characteristics related to oral SCC should be considered when planning public policies, in order to prevent new cases as well as to allow early diagnosis.

Key words: squamous cell carcinoma of head and neck/epidemiology; mouth neoplasms; medical records.

RESUMO

Introdução: O câncer bucal corresponde a cerca de 30% de todos os tumores de cabeça e pescoço. Aproximadamente 90% dessas neoplasias malignas são carcinomas espinocelulares (CEC) e cerca de 15 mil casos novos são estimados a cada ano no Brasil. **Objetivo:** Avaliar os aspectos clínico-epidemiológicos de pacientes com CEC oral. **Método:** Estudo observacional, com delineamento transversal, quantitativo e retrospectivo, a partir da análise de prontuários de pacientes com diagnóstico histopatológico de CEC bucal atendidos em um centro de referência em Oncologia da Região Nordeste do Brasil. Variáveis clínicas e epidemiológicas foram coletadas e analisadas. A análise estatística foi realizada utilizando-se o teste de qui-quadrado (p≤0,05). **Resultados:** Entre os 298 prontuários avaliados, predominaram pacientes do sexo masculino (75,2%), com idade média de 60,4 anos, tabagistas e etilistas (62,0%). A queixa mais frequente foi a presença de ferida ou lesão na boca (61,1%), e o local mais comum foi a língua (62,1%). As variáveis clínicas revelaram estadiamento clínico avançado (III ou IV) em 76,4% dos pacientes. Entre os pacientes com idade até 50 anos, houve maior concentração de homens (p=0,015) e maior consumo de álcool do que entre os pacientes acima dos 50 anos (p=0,010). As demais variáveis não exibiram diferença estatística significante entre os grupos. **Conclusão:** As características clínico-epidemiológicas relacionadas ao CEC bucal devem ser consideradas para o planejamento de políticas públicas, a fim de prevenir novos casos e permitir a realização de diagnóstico precoce.

Palavras-chave: carcinoma de células escamosas de cabeça e pescoço/epidemiologia; neoplasias bucais; registros médicos.

RESUMEN

Introducción: El cáncer oral corresponde a aproximadamente 30% de todos los tumores de cabeza y cuello. Aproximadamente 90% de estos tumores malignos son carcinomas de células escamosas (CCE) y se estiman alrededor de 15 mil casos nuevos cada año en Brasil. **Objetivo:** Evaluar los aspectos clínicos y epidemiológicos de los pacientes con CCE oral. **Método:** Estudio observacional, con diseño transversal, cuantitativo y retrospectivo, basado en el análisis de historias clínicas de pacientes con diagnóstico histopatológico de CCE oral tratados en un centro de referencia en Oncología del Noreste de Brasil. Se recogieron y analizaron variables clínicas y epidemiológicas. El análisis estadístico se realizó mediante la prueba de chi-cuadrado (p≤0,05). **Resultados:** Entre las 298 historias clínicas evaluadas, predominaron los pacientes del sexo masculino (75,2%), con una edad promedio de 60,4 años, fumadores y alcohólicos (62,0%). La queja más frecuente fue la presencia de herida o lesión en la boca (61,1%) y la ubicación más común fue la lengua (62,1%). Las variables clínicas revelaron estadificación clínica avanzada (III o IV) en 76,4% de los pacientes. Entre los pacientes de hasta 50 años, hubo una mayor concentración de hombres (p=0,015) y un mayor consumo de alcohol que entre los pacientes mayores de 50 años (p=0,010). Las otras variables no mostraron una diferencia estadísticamente significativa entre los grupos. **Conclusión:** Las características clínicas y epidemiológicas relacionadas con el CCE oral deben considerarse al planificar las políticas públicas, a fin de prevenir nuevos casos y permitir un diagnóstico precoz.

Palabras clave: carcinoma de células escamosas de cabeza y cuello/epidemiología; neoplasias de la boca; registros médicos.

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INTRODUCTION

According to estimates of the National Cancer Institute José Alencar Gomes da Silva (INCA), 625 thousand new cases of cancer are anticipated for each year of the triennium 2020-2022 in Brazil, of which 15,210 of buccal cancer alone (11,200 in men and 4,010 in women), the fifth more frequent in males and the 13th in women, except non-melanoma skin cancer[1]. Oral cavity cancers affecting lips, buccal mucosa, anterior portion of the mouth, hard palate and upper and lower gingiva correspond to nearly 30% of all the head and neck tumors[2].

Approximately 90% of the malignant oral cavity cancers are squamous cells carcinomas (SCC), the other 10% are rare malignancies (variants of SCC, melanoma, lymphomas and sarcomas) and a variety of malignant tumors of odontogenic origin[3,4].

Routine consultations of oral mucosa are able to detect oral SCC for the population in general, but specially in individuals who are exposed to one of more risk factors as alcohol and tobacco use[3]. Increase of incidence in young individuals until 50 years of age and in women has been found, notwithstanding the classic profile of males in the sixth decade of life as the most affected[4,5].

Poor information among the population and healthcare providers about associated factors of this neoplasm delays the diagnosis, reduces the efficacy of the treatment and escalates the severity of secondary sequelae mainly related to deglutition and phonation further to mortality increase[3,4].

Few studies evaluated oral SCC's epidemiological and clinicopathological characteristics in Brazil, most of them in the Southeast region, reflecting the paucity of information in the Northeast region[5,6]. The aim of this study was to evaluate the clinicoepidemiological aspects of oral SCC consulted at an odontology reference clinic in Brazil's Northeast region.

METHOD

Cross-sectional, observational and retrospective study based in the evaluation of patients with histopathological diagnosis of buccal SCC consulted at a reference oncology clinic in Teresina (PI), Brazil. Data were acquired between January and May 2019. Patients of both sexes and any age whose initial consultation occurred in January 2014 or earlier were included because it would be possible to verify clinical variables with at least five years of follow-up. Charts with incomplete data were excluded.

Demographical variables (sex, age, origin and race), behavioral (tobacco and alcohol use) and clinic (complaints at the first consultation, site of the lesion, clinical staging and treatment) were extracted from the charts. The following anatomic sites were investigated: tongue, floor, lip, retromolar area, vestibule of the mouth and others (jugal mucosa, amygdala and gingiva) according to the International Classification of Diseases and Health Related Problems (ICD-10)[7]. Patients with until 50 years of age were classified as young and over 50, older adults for correlation among the group variables.

The Statistical Package for the Social Sciences® (SPSS Statistic Data) version 25.0 was utilized to analyze the data. Person's chi-square test was applied to evaluate the differences of the proportions of categorical outcomes with level of significance of 5%.

The Institutional Review Board approved the study, CAAE: 87297218.6.3001.5584 in compliance with the current ethical rules and with Ordinance 466/12 of the National Health Council[8].

RESULTS

393 patients with histopathological diagnosis of buccal SCC were evaluated. 95 charts were excluded because they were incomplete, or data were missing and eventually 298 were included. The mean age was 60.4 years, males were more affected (75.2%) in the age range of 50-60 years (26.5%), Browns and Blacks (85.9%) and from rural areas (56.4%). The most common complaint was mouth wound or lesion (61.1%). Tobacco and alcohol were the behavioral factors most found simultaneously in 62.0% of the patients. Prevalent sites were tongue (62.1%) and floor of the mouth (12.1%).

Clinical variables revealed advanced tumor size T4 in 53.6% of the patients, absence of cervical lymph node involvement in 56.7%, no remote metastasis in 89.2%, resulting in staging TNM IV in 62.7% of the cases[9]. A combination of radiotherapy and chemotherapy was applied in 53.0% (Table 1). 17.7 months was the mean time between the date of the histopathological diagnosis and the last consultation for these patients.

Comparing the clinical and sociodemographic variables per age-range, there were more males (p=0.015) and high alcohol use (p=0.010) among young patients than over 50 years (p=0.010). No significant statistical difference for the other variables among the groups was found (Table 2).

DISCUSSION

The recent advances of imaging tests and effective therapies[10] may account for the increase of 12% in the global survival of patients with buccal SCC treated in oncologic clinics worldwide. Notwithstanding the

Table 1. Epidemiological and clinical characteristics of 298 patients with diagnosis of buccal SCC

Variables	N	%
Sex		
Male	224	75.2
Female	74	24.8
Age range		
≤ 40 years	19	6.3
41 – 50 years	57	19.1
51 – 60 years	79	26.5
61 – 70 years	67	22.4
71 – 80 years	52	17.4
> 80 years	24	8.3
Skin color		
Brown/Black	256	85.9
White	34	11.4
Uninformed	8	2.7
Origin		
Capital	88	29.5
Countryside	168	56.4
Other States	42	14.1
Main complaint		
Mouth wound	182	61.1
Mouth pain	26	8.7
Odynophagia	31	10.4
Nodule in the neck	29	9.7
Dysphagia	16	5.4
Others	14	4.7
Associated behavioral factors		
Smoker and alcoholic	185	62.0
Smoker only	82	27.5
Alcoholic only	8	2.7
No use	17	5.8
Uninformed	6	2.0
Local of the lesion		
Tongue	185	62.1
Floor of the mouth	36	12.1
Palate	22	7.4
Lip	15	5.0
Retromolar area	13	4.4
Vestibule of the mouth	11	3.7
Others	16	5.2

to be continued

Table 1. continuation

Variables	N	%
Size of the tumor (T)		
T1	30	10.0
T2	51	17.5
T3	51	17.5
T4	159	53.6
Tx	5	1.6
Lymph node involvement (N)		
N0	169	56.7
N1	44	14.7
N2	46	15.4
N3	39	13.2
Metastasized (M)		
M0	266	89.2
M1	12	4.0
Clinical staging (TNM)		
I	37	12.4
II	31	10.4
III	41	13.7
IV	187	62.7
Uninformed	2	0.6
Treatment		
Surgery	10	3.3
Radiotherapy	17	5.7
Chemotherapy	2	0.6
Surgery + radiotherapy	10	3.3
Radiotherapy + chemotherapy	158	53.0
Surgery + radiotherapy + chemotherapy	63	21.1

advances, the 5-year global survival is still near 50%[11] reflecting the national and international literature. These results are largely explained by the advanced stages at the diagnosis, considering that the oral cavity is easily accessible for routine exams[3], revealing the poor knowledge of the disease both by patients and healthcare providers[12].

Consistent with the literature[3,4,6,11,13-15], most of the patients investigated were males in the sixth decade of life exposed to risk factors. Nevertheless, buccal SCC is being increasingly found in younger patients and in women because of possible changes in lifestyle in the last years[3,4].

The origin of most of the patients was Piauí's countryside (56.4%), basically because of scarce specialized care and the necessity to seek for reference clinics in the State capital. Self-claimed Browns or Blacks

Table 2. Comparison among the variables investigated according to the age-ranges until 50 years and above 50 years of 298 patients diagnosed with buccal SCC

Variables	Age at diagnosis (years)				Mean	SD	p
	≤ 50		> 50				
	N	%	N	%			
Sex*							
Male	65	85.5	159	71.6	59	13	0.015
Female	11	14.5	63	28.4	65	13	
Origin							
Capital	23	30.3	65	29.3	60	14	0.871
Countryside/other States	53	69.7	157	70.7	60	14	
Main complaint							
Mouth wound	48	63.2	134	60.4	60	14	0.666
Other complaints	28	36.8	88	39.6	60	13	
Smoker[a]							
Yes	66	89.2	201	92.2	60	14	0.424
No	8	10.8	17	7.8	61	15	
Alcoholism*							
Yes	58	78.4	135	61.9	58	14	0.010
No	16	21.6	83	38.1	64	13	
Site (local of the lesion)							
Tongue	53	69.7	132	59.5	58	13	0.111
Other sites	23	30.3	90	40.5	64	15	
Size of the tumor (T)[a]							
T1 and T2	20	26.7	61	28.2	62	14	0.793
T3 and T4	55	73.3	155	71.8	60	13	
Lymph nodes involvement (N)							
N0	39	51.3	130	58.6	62	14	0.271
N1/N2/N3	37	48.7	92	41.4	58	13	
Clinical staging (TNM)[a]							
I and II	16	21.3	52	23.5	63	14	0.606
III and IV	59	78.7	169	76.5	60	13	
Surgical treatment							
Yes	21	27.6	62	27.9	58	13	0.960
No	55	72.4	160	72.1	61	14	

Caption: SD = Standard deviation.
(*) Statistically significant difference (p<0.05; Pearson chi-square).
(a) Variable with uninformed data.

are predominant in the State (73%) and in the population sample (85.9%)[16] similar to a study conducted in the State of Bahia, where close to 90% of the patients were Browns or Blacks, consistent with Bahia's major ethnicity[15].

89.5% and 64.7% of the patients were smokers and alcoholics, respectively, but in 62.0%, the use was simultaneous. Main carcinogenic factors are alcohol and tobacco, regardless of being a multifactorial disease[3,4,11,12]. It is well established the association between tobacco use and buccal SCC and when connected to chronic intake of alcohol beverages, synergistic dose-dependent effect is seen[14]. Duration, frequency and use of these substances, and if simultaneous, are directly related to high risks of buccal SCC. It is estimated that smoke quitting accounts for 50% reduction of buccal cancer risk in 5 years, quite relevant to reduce buccal cancer[3,4].

Tongue cancers (62.1%) are the most prevalent as the intraoral site most prone to cancer for the majority of the populations, in concurrence with other studies[3,4,11]. Great part of the patients complained of mouth lesion in the first consultation (61.1%). Typically, it is known that buccal cancer onsets as a chronic solitary ulcer, but there are other forms as white (leukoplakia) or reddish patches (erythroplasia), endophytic, exophytic or verrucous lesions[3,4,6,12]. Clinicians should be attentive of solitary buccal lesions persisting for more than three weeks, especially if indurated followed by cervical lymphadenopathy or in patients exposed to risk factors[4].

High prevalence of late diagnosis was found as the tumor size was T4 in more than 50% of the cases with regional metastasis in more than 40% of the patients; more than three quarts of them were in stages III or IV of the disease, this percentage ranged from 58.3% to 82.9% according to the literature[8,14,15,17-20].

Most of the individuals were treated with radiotherapy and chemotherapy combined. Primary tumor surgical resection is the treatment of choice for buccal SCC and, if needed, neck in order to manage regional metastases[4,21,22]. However, in advanced stages as this study revealed, radiotherapy with chemotherapy is usually the indication after analysis of several factors as age and comorbidities[22].

Among patients with until 50 years of age, as a former study concluded, it was found more men and alcoholics than in older adults. The etiology and mechanisms for younger patients to develop buccal SCC are basically similar in older patients, typically alcohol is traditionally considered an important risk factor[3]. Males and alcoholics predominance among younger individuals with buccal SCC can be explained partially by abusive use of alcohol in the Brazilian male population[23].

No statistically significant differences were found among local variables or size of the lesion, lymph node involvement, clinical staging or treatment of young or older adults. Former studies produced inconsistent and controversial results about the clinicopathological differences and prognosis when young and older patients with buccal SCC are compared[24,25]. Younger patients would have increased risk of death due to recurrence or metastases as some studies indicate[24], while other studies concluded the opposite, high survival for this population[25].

CONCLUSION

High prevalence of buccal SCC was found in males in the sixth decade of life, smokers and alcoholics, with tongue lesions and advanced clinical staging (III or IV) at diagnosis. Males until 50 years of age, smokers and alcoholics were the most affected, a statistically significant result. Buccal SCC related clinicoepidemiological characteristics should be considered to plan public policies to prevent new cases and ensure early diagnosis.

CONTRIBUTIONS

All the authors contributed substantially for the study conception and/or design, acquisition, analysis and/or interpretation of the data, drafting and critical review. They approved the final version to be published.

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DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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