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Clinical and histopathological evidence of oral squamous cell carcinoma in young patients: systematized review

Evidências clínicas e histopatológicas do carcinoma de células escamosas oral em pacientes jovens: revisão sistematizada

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ABSTRACT

The oral squamous cell carcinoma (OSCC) very often affects subjects above the sixth decade of life. However an increasing incidence has been observed in younger individuals, below 40 years. We conducted a systematized review of the current clinical, histopathological and therapeutic aspects of OSCC in young patients. Our work included studies that addressed OSCC involving young patients in the period 2007-2012, and which were indexed in PubMed. Initially, 499 articles were obtained; after refinement, 340 articles had their titles and abstracts evaluated, with 17 included in the sample. The majority of studies reported male predominance (87.5%), association with tobacco and/or alcohol use (66.6%), advanced clinical stages at diagnosis (77.7%) and, at histopathology, moderately differentiated tumors (72.7%). Based on the results, we believe there are differences in the factors associated with pathogenesis, biological behavior and prognosis in young patients, since most studies show more rapid and aggressive tumor progression in this age group. We suggest the conduction of research focusing on the pathogenesis and carcinogenesis of OSCC in young patients, thereby searching for better scientific evidence.

Key words: oral squamous cell carcinoma; malignant neoplasm, young individual.

INTRODUCTION

The squamous cell carcinoma (SCC) is considered the most frequent malignant neoplasm in the oral cavity[2], and it predominantly affects Caucasian males between the fifth and the sixth decade of life[9]. In young patients, aged less than 40 years, the oral squamous cell carcinoma (OSCC) is rare and represents 4%-6% of all the reported cases. However, there is an increasing tendency for this type of cancer to grow in tongue, base of tongue and tonsils in this age group[19, 21].

There is evidence that tobacco and alcohol are risk factors, as the cumulative effect of these substances is harmful to the organism[9, 19]. But the presence of such deleterious habits is not directly associated with OSCC in young adults, thanks to their short time of exposure[2, 19]. OSCC etiopathogenesis has not been fully elucidated, and some factors like genetic alterations and human papillomavirus (HPV) infections have been pointed as possible causes for the development of OSCC in young patients[6, 21].

Nowadays, diagnosis and treatment are based on clinical and histopathological characteristics. OSCC in young patients seems to present a different pattern of biological behavior[2], showing more aggressiveness[6, 19]. Nonetheless, there are accounts in which such differences are not considered significant[10, 11]. Recent studies have revealed similarities in OSCC rates of clinical evolution and survival of young and old patients[2, 6].

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OSCC in individuals aged less than 40 years has been widely discussed in literature, but controversy still exists, especially concerning associated factors, biological behavior and prognosis. Hence, this work had as objective to conduct a systematic review of literature on the clinical, histopathological and therapeutic aspects of OSCC in young patients.

METHODS

This paper presents the findings of a systematic review of literature on the theme "oral squamous cell carcinoma in young patients". The search was performed from August to November 2012 through PubMed database (U.S. National Library of Medicine). The descriptors "squamous cell carcinoma", "oral", "young" and "diagnosis", taken from the Medical Subject Headings (MeSH), were used. Search was refined in order to limit results to studies only on human beings published during 2007-2012 in the English language.

After refinement, all titles and abstracts of the retrieved articles were screened, and works were selected according to the inclusion and exclusion criteria previously established by a single examiner. Studies on the clinical and/or histopathological characteristics of oral squamous cell carcinoma involving young patients were included. Case reports, literature reviews, systematic reviews and researches whose main objective was not squamous cell carcinoma in young patients were excluded.

The analyzed variables were: author, publication year, country of data collection, sample size, age group, sex, presence of harmful habits, clinical and histopathological characteristics, and types of squamous cell carcinoma treatment. These pieces of information were recorded on a specific form.

From the methodology used, 499 articles were initially retrieved. After search refinement, 340 articles had their titles and abstracts examined. Previously established criteria excluded articles that: did not present the subject "squamous cell carcinoma" as the main objective ($n = 12$), were not related to young patients ($n = 161$), did not cite clinical and/or histopathological features ($n = 40$), were systematic reviews ($n = 5$) and case reports ($n = 20$). Therefore, 17 articles were selected to be included in this review.

RESULTS

Regarding the country of study, six works were carried out in Brazil, followed by the United States (five works). As for sample size, the number of participants ranged from 10 to 2,223 young subjects, as described in **Table 1**. Age distribution of patients varied: individuals considered young were those aged 18-39 years[7, 8, 10, 11] (23.5%), < 30 years[13, 20] (11.7%), < 40 years[3, 9, 16, 21] (23.5%), and < 45 years[12, 18] (11.7%). Other researches also classified as young individuals aged ≤ 20 years[14, 15] (11.7%), 18-40 years[6] (5.8%), and 21-38 years[17] (5.8%). Predominance of male sex was found in 14 of the published studies[3, 6, 8, 9, 11-14, 16-21] (Table 1).

Among the 16 studies that associated SCC to the oral cavity, seven used only lesions in the tongue[3, 6, 8, 12, 13, 15, 20] as inclusion criteria; nine included other locations, of which six identified the tongue as the site of highest incidence[7, 9-11, 14, 16], and just two observed predominance on the floor of mouth[18, 21]. Concerning the relationship with harmful habits, nine investigations demonstrated association between tobacco and/or alcohol use and OSCC, of which six presented positive association[7, 10, 11, 16, 18, 19]. The other eight did not assess the parameter related to harmful habits (**Table 2**).

Five of the 10 papers about the tumor-node-metastasis (TNM) Staging System indicated that a large amount of patients were diagnosed as T1 and/or T2[8, 13-15, 20], being stages T3 and T4 (extensive tumors) predominant in other works[7, 10-12, 18].

The criterion N0 (absence of metastasis in regional lymph nodes)[7, 8, 12-14, 18-20] prevailed in eight studies, and M0 (absence of distance metastasis) was described in all the 10 studies. On the subject of clinical stage, seven works reported that nearly all the patients were in stages III and IV (more advanced tumors)[3, 10-12, 16, 18, 20], and two showed predominance of stages I and II[8, 13] (**Table 3**).

In relation to histopathological grading, following the malignancy grading system proposed by the World Health Organization (WHO)[5], out of the 11 articles that presented data on the degree of differentiation of the lesion, eight reported that nearly all tumors were moderately differentiated[3, 14-16, 18-21], and three considered the majority of them well differentiated[3, 14-16, 18-21].

OSCC treatment was mentioned in 10 works, in which surgery, radiation therapy and/or chemotherapy were considered. In six studies almost all the patients were treated with surgical resection only[8, 13-15, 20, 21]; in the other four cases, surgery was chiefly combined with radiation therapy[7, 10-12] (Table 3).

DISCUSSION

OSCC in young patients is rather discussed in literature, because its incidence has been rising in individuals younger than 40 years[19, 21]. Authors have tried to assess the factors involved in the etiology and the prognosis of OSCC, identifying clinical and

TABLE 1 – Distribution of the 17 studies on oral squamous cell carcinoma in young patients, selected from PubMed between 2007 and 2012, according to author, year of publication, country, sample, age group, and sex

Author (year)	Country	Sample *n* (%) (age group)	Sample total *n* (%)	Sex *n* (%)	
				Female	Male
Lee *et al.* (2007)	Taiwan	20 (50%) (≤ 45 anos)	40 (100%)	1 (5%)	19 (95%)
O'Regan *et al.* (2007)	Ireland	10 (41.6%) (≤ 40 years)	20 (100%)	7 (29%)	17 (71%)
Hirota *et al*. (2008)	Brazil	13 (10.7%) (≤ 40 years)	121 (100%)	5 (38.5%)	8 (61.5%)
Mallet *et al*. (2009)	France	52 (100%) (< 30 years)	52 (100%)	18 (46.1%)	34 (53.9%)
Ribeiro *et al*. (2009)	Brazil	46 (100%) (< 45 years)	46 (100%)	8 (17%)	38 (83%)
Harris *et al*. (2010)	USA	78 (100%) (18-39 years)	78 (100%)	36 (46%)	42 (54%)
Kaminagakura *et al*. (2010)	Brazil	125 (50%) (18-39 years)	250 (100%)	32 (25.6%)	93 (74.4%)
Morris *et al*. (2010)	USA	10 (20%) (≤ 20 years)	50 (100%)	8 (80%)	2 (20%)
Morris and Ganly (2010)	USA	54 (< 1%) (≤ 20 years)	22.216 (100%)	20 (37%)	34 (63%)
Soudry *et al*. (2010)	Israel	11 (12.9%) (< 30 years)	85 (100%)	5 (45%)	6 (55%)
Falaki *et al*. (2011)	Iran	21 (100%) (21-38 years)	21 (100%)	9 (42.8%)	12 (57.2%)
Harris *et al*. (2011)	USA	25 (100%) (18-39 years)	25 (100%)	15 (60%)	10 (40%)
Kaminagakura *et al*. (2011)	Brazil	90 (41,8%) (19-40 years)	215 (100%)	25 (27.8%)	65 (72.2%)
Patel *et al*. (2011)	USA	2.223 (6.78%) (18-44 years)	32.763 (100%)	557 (25%)	1,666 (75%)
Santos-Silva *et al*. (2011)	Brazil	37 (56.9%) (mean 33.24 ± 5.82)	65 (100%)	14 (37.8%)	23 (62.2%)
Benevenuto *et al*.[1] (2012)	Brazil	20 (50%) (≤ 40 years)	40 (100%)	–	–
Udeabor *et al*. (2012)	Germany	38 (3.9%) (≤ 40 years)	977 (100%)	8 (21.1%)	30 (78.9%)

[1]The study did not analyze the variable sex.

histopathological characteristics of OSCC in young people, and comparing them with those in older patients[19].

The selected works did not provide consistent data about which age range to work with in order to classify individuals as young. That imposes limitation on comparison and analysis of results. On the other hand, the majority of the studies considered individuals under 40 young and belonging to a special group of patients affected by OSCC[3, 9, 17, 22], which tends to affect mainly patients in the fifth and sixth decades of life[9].

OSCC occurs more frequently in males. This pattern, nevertheless, may be different in young patients, with high prevalence being observed in females[7, 16]. The greater incidence in young women may be associated with other etiological factors, such as genetic susceptibility, viral infection, hormone and immune modulation[2, 6, 21].

Generally, in older patients, OSCC is related to deleterious habits. Alcohol consumption and tobacco use may also affect younger patients[10], although the role of these risk factors in young age groups

TABLE 2 – Descriptive distribution of the 17 studies on oral squamous cell carcinoma in young patients, selected from PubMed between 2007 and 2012, according to lesion site and association with harmful habits

Lesion site *n* (%)				Harmful habits *n* (%)			
Author (year)	Tongue	Floor of mouth	Lip	Oropharynx	Others	Tobacco	Alcohol
Lee *et al*.[2,3] (2007)	20 (100%)	–	–	–	–	–	–
O'Regan *et al*. (2007)	10 (42%) of total	1 (4%) of total					
Hirota *et al*. (2008)	10 (76.9%)	1 (7.7%)					
Mallet *et al*.[2,3] (2009)	78 (100%)	–					
Ribeiro *et al*. (2009)	13 (28%)	14 (30%)					
Harris *et al*. (2010)	28 (81%)	7 (17%)					
Kaminagakura *et al*. (2010)	57 (45.6%)	34 (27.2%)					
Morris *et al*.[2] (2010)	10 (100%)	–					
Morris and Ganly[3] (2010)	35 (63.6%)	1 (1.19)					
Soudry *et al*.[2,3] (2010)	11 (100%)	–	–	–	–	–	–
Falaki *et al*.[2,3] (2011)	21 (100%)	–	–	–	–	–	–
Harris *et al*.[3] (2011)	25 (100%)	–	–	–	–	–	Tobacco/alcohol 12 (48%)
Kaminagakura *et al*. (2011)	37 (41.1%)	28 (31.1%)	–	–	25 (27.8%)	68 (75.5%)	61 (67.7%)
Patel *et al*. (2011)	814 (36.6%)	–	–	–	1,409 (63.3%)	–	–
Santos-Silva *et al*.[4] (2011)	–	–	–	–	–	19 (51.4%)	22 (59.5%)
Benevenuto *et al*.[2,3] (2012)	20 (100%)	–	–	–	–	–	–
Udeabor *et al*.[3] (2012)	13 (34.2%)	15 (39.5%)	–	–	10 (26.3%)	–	–

[2]Inclusion criterion: OSCC exclusively in the tongue; [3]the study did not analyze the variable related to harmful habits; [4]the study did not analyze the variable related to lesion site.

TABLE 3 – Descriptive distribution of the 17 studies on oral squamous cell carcinoma in young patients, selected from PubMed during 2007 and 2012, according to clinical, histopathological and therapeutic features

Author (year)	Clinical staging (TNM) n (%)			Clinical stage *n* (%)	Histological grading *n* (%)	Treatment *n* (%)
Lee *et al*.[7] (2007)	T1: 3 (15%) T2: 5 (25%) T3: 5 (25%) T4: 7 (35%)	N0: 11 (55%) N1: 2 (10%) N2: 6 (30%) N3: 1 (5%)	–	I: 3 (15%) II: 4 (20%) III: 4 (20%) IV: 9 (45%)	–	S: 4 (7.5%) S + Rt 7 (35%) S + Rt + Ct: 5 (25%) Rt + Ct: 4 (7.5)
O'Regan *et al*.[5,8] (2007)	–	–	–	I: 2 (8%) II: 5 (21%) III: 8 (33%) IV: 9 (38%)	WD: 1 (4%) MD: 19 (79%) PD: 4 (17%)	–
Hirota *et al*.[5-8] (2008)	–	–	–	–	–	–
Mallet *et al*.[7] (2009)	T1: 18 (36%) T2: 19 (38%) T3: 10 (14%) T4: 6 (12%)	N0: 40 (76%) N1: 6 (12%) N2: 6 (12%)	M0: 52 (100%)	I: 16 (32%) II: 13 (26%) III: 12 (24%) IV: 9 (18%)	–	S: 14 (26.9%) Rt: 21 (40%) S + Rt + Ct: 13 (25%) S + Ct: 3 (75%) Rt + Ct: 12 (23%)

Author (year)	Clinical staging (TNM) *n* (%)			Clinical stage *n* (%)	Histological grading *n* (%)	Treatment *n* (%)
Ribeiro *et al*.[8] (2009)	T1: 7 (15%) T2: 12 (26%) T3: 10 (22%) T4: 14 (12%)	N0: 25 (54%) N1: 10 (22%) N2: 6 (13%) N3: 2 (4%)	M0: 42 (91%) Mx: 1 (2%)	I/II: 13 (28%) III/IV: 30 (65%)	WD: 9 (20%) MD: 25 (50%) PD: 14 (30%)	–
Harris *et al*.[6, 7] (2010)	T1: 23 (30%) T2: 21 (27%) T3: 19 (24%) T4: 15 (19%)	N0: 41 (53%) N1: 11 (14%) N2: 24 (30%) N3: 2 (3%)	–	–	–	S: 16 (21%) S + Rt: 34 (44%) Rt: 7 (9%) Rt + Ct: 21 (26%)
Kaminagakura *et al*. (2010)	T1/T2: 39 (31.2%) T3/T4: 86 (68.8%)	N0: 52 (41.6%) > N0: 73 (58.4%)	M0: 125 (100%)	I/II: 24 (19.2%) III/IV: 101 (80.8%)	WD: 69 (55.2%) MD: 21 (16.8%) PD: 35 (28%)	S: 36 (28.8%) S + Rt: 46 (36.8%) Rt: 36 (28.8%) S + Rt + Ct: 7 (5.6%)
Morris *et al*.[6] (2010)	T1: 3 (30%) T2: 4 (40%) T3: 3 (30%) T4: 0 (0%)	N0: 7 (70%) N1: 2 (20%) N2: 1 (10%) N3: 0 (0%)	M0: 10 (100%)	–	WD: 3 (30%) MD: 7 (70%) PD: 0 (0%)	S: 5 (50%) S + Rt: 5 (50%)
Morris and Ganly[5, 6] (2010)	–	–	–	–	WD: 18 (33.3%) MD: 20 (37%) PD: 6 (11.1%)	S: 27 (50%) S + Rt: 20 (37%)
Soudry *et al*. (2010)	T1: 5 (46%) T2: 4 (36%) T3: 2 (18%) T4: 0 (0%)	N0: 5 (46%) N1: 2 (18%) N2: 4 (36%) N3: 0 (0%)	–	I/II: 3 (27%) III/IV: 8 (73%)	BD: 2 (18%) MD: 8 (73%) PD: 1 (9%)	C: 11 (100%) C + Rt: –
Falaki *et al*.[5, 6, 8] (2011)	–	–	–	–	WD: 21 (100%)	–
Harris *et al*.[6, 7] (2011)	T1: 10 (40%) T2/T3/T4: 15 (60%)	N0: 18 (72%) N1: 7 (28%)	–	–	–	S: 11 (44%) Rt: 14 (56%)
Kaminagakura *et al*. (2011)	T1/ T2: 24 (26.7%) T3/T4: 66 (73.3%)	N0: 36 (40%) > N0: 54 (60%)	M0: 90 (100%)	I/II: 14 (15.6%) III/IV: 76 (84.4%)	WD: 49 (54.4%) MD: 14 (15.6%) PD: 27 (30%)	S: 24 (26.7%) S + Rt: 32 (35.5%) Rt: 29 (32.2%) S + Rt + Ct: 5 (5.6%)
Patel *et al*.[5-8] (2011)	–	–	–	–	–	–
Santos-Silva *et al*.[8] (2011)	T1: 15 (40.5%) T2: 13 (35.1%) T3: 4 (11%) T4: 5 (13.5%)	N0: 24 (65%) N1: 6 (16%) N2: 4 (11%) N3: 3 (8%)	M0: 36 (97%) M1: 1 (3%)	I/II: 22 (59.5%) III/IV: 15 (40.5%)	WD: 14 (37.9%) MD: 20 (54%) PD: 3 (8.1%)	–
Benevenuto *et al*.[5, 8] (2012)	–	–	–	I/II: 6 (33.3%) III/IV: 12 (66.7%)	Low grade: 9 (45.5%) High grade: 11 (55.5%)	–
Udeabor *et al*.[6] (2012)	T1: 15 (39.5%) T2: 10 (26.3%) T3: 6 (15.8%) T4: 6 (15.8%)	–	–	–	WD: 7 (18.4%) MD: 24 (63.2%) PD: 5 (13.2%)	S: 26 (68.4%) S + Rt + Ct: 9 (23.7%) Rt and/or Ct: 3 (7.9%)

[5]The TNM clinical staging was not analyzed in the study; [6]the clinical stages were not analyzed in the study; [7]the histopathological grading was not analyzed in the study; [8]the provided treatment was not assessed; WD: well differentiated; MD: moderately differentiated; PD: poorly differentiated; S: surgery; Rt: radiation therapy; Ct: chemotherapy.

is still controversial[14]. Some studies noted that in this age group the occurrence of OSCC is equally distributed between smokers and/or alcohol consumers and those who do not have these habits[1, 7, 9]. Risk factors like viral agents (*Herpes simplex* virus, HPV), diet type, working environment, immunosuppressive drugs, Fanconi anemia, and genetic background have been investigated; still there is not a

consensus that these factors are actually connected to the genesis of OSCC[9]. Furthermore, some studies have concentrated on searching a relationship between HPV and OSCC in young patients, above all in primary tumors of the oropharynx[17]. Some authors[18] suggest the presence of deoxyribonucleic acid (DNA) of HPV-16 in around 50% of the cases of oropharyngeal SCC, and 0% to 20% in SCC of the oral cavity in young patients.

With regard to the most affected anatomic site, the majority of the analyzed studies found a predilection for the tongue, similarly to what happens with older patients[9-11]. Different results were published by some studies[19, 22], in which there was predominance on the floor of mouth, followed by the tongue, what indicates a slight difference from previous researches with young individuals[9, 17]. This discrepancy in results about the anatomical site may happen due to the sample size in each study, and to the most frequent harmful habits in the studied population.

In the analyzed studies, in which clinical characteristics of the tumor were assessed, a greater prevalence of OSCC is observed at more advanced stages (stages III and IV). The TNM system has been used as a predictor of clinical response to antineoplastic treatment, as well as of patient's survival[13]. TNM is an international system for clinical staging of cancer that measures three parameters: tumor size (T), presence of metastasis in cervical lymph nodes (N), presence or absence of distance metastasis (M)[13]. Benevenuto *et al*.[3] observed that according to the TNM system there was a statistically significant correlation between young and old patients ($p < 0.05$), in which 67% of OSCC in the young were diagnosed in stages III and IV. This higher proportion of young people may be explained by late diagnosis, as happens with older patients[18], or by an age-related more aggressive biological behavior[20]. The latter hypothesis may be supported by the high perineural invasion index shown at the histopathological examination of OSCC in young patients[21].

Respecting histopathological evaluation, several histopathological malignancy grading systems (HMGS) have been used and developed to explain the discrepancies in the biological behavior of tumors with apparently similar clinical characteristics[13]. The most commonly used HMGS is that proposed by Bryne, in 1992[4], in which four parameters are evaluated: degree of keratinization, cellular and nuclear pleomorphism, inflammatory infiltrate and invasion pattern, classifying tumors in low grade and high grade of malignancy. The system proposed by WHO (2005)[5] evaluates the degree of cellular differentiation, grouping tumors into well differentiated, moderately differentiated and poorly differentiated[9, 13, 23]. In this systematic review, out of the 11 studies that performed a HMGS, 90% used the classification proposed by WHO[5], and 10% used the system proposed by Bryne[4]. One may observe, consequently, that these results differ during OSCC evaluation in old patients, in which the most used HMGS is that by Bryne[4].

Considering data of the assessed studies, from a histopathological point of view, almost all OSCC lesions presented themselves as moderately or well differentiated. Other studies report that tumors in young individuals tend to be more anaplastic and infiltrative[10, 11]. The histopathological characteristics, like keratinization, nuclear pleomorphism, number of mitoses and invasion pattern, when assessed, reflect the degree of differentiation[4, 23], in which well or moderately differentiated tumors are associated with a more favorable prognosis[24]. In spite of that, Benevenuto *et al*.[3] did not observe a statistically significant correlation between histological grading and the studied age groups, young and old patients.

OSCC treatment includes surgery, radiation therapy and chemotherapy, depending on the patient's stage or risk factors, like age, presence of comorbidities or immune status[1]. In all the assessed studies, surgery prevailed, followed by surgery combined with radiation therapy. Chemotherapy is the option for more advanced tumors, with margins exhibiting neoplastic infiltration, tumors with no possibility of resection, and in patients with no condition for surgery[10, 11]. Radiation therapy and chemotherapy have serious side effects, which contribute to a marked decrease in health and quality of life[18]. In this review we observed that the treatment used for OSCC in young patients is similar to that used for OSCC in old people. However, according to reports, young patients often undergo combined treatment no matter the stage of the disease[24], because a great number of authors inform that the behavior of OSCC in young adults is more aggressive.

There is still controversy as to the recurrence rate of OSCC[10, 11], but overall survival seems to be more favorable for patients with no history of risk factors in comparison with smokers and/or alcohol users, regardless of age[7, 8]. One may also observe longer free-disease survival in young patients treated with surgery combined with radiation therapy[15].

CONCLUSION

The development of OSCC in younger patients has been frequently discussed in literature, by reason of the increased incidence of the disease in this age group. Even so, there is still no consensus, especially as to etiopathogenesis. There may be differences among risk factors associated with biological behavior and prognosis in young patients. Therefore, we recommend that further studies are conducted to search for better clinical evidence, mainly regarding etiopathogenesis and carcinogenesis of OSCC in younger age groups.

RESUMO

O carcinoma de células escamosas oral (CCEO) acomete mais frequentemente indivíduos em uma faixa etária acima da sexta década de vida. No entanto, tem-se observado uma crescente incidência em indivíduos mais jovens, abaixo dos 40 anos de idade. Realizou-se uma revisão sistematizada dos aspectos clínicos, histopatológicos e terapêuticos atuais do CCEO em pacientes jovens. Foram incluídos os estudos que abordavam o CCEO envolvendo indivíduos jovens no período de 2007-2012 e indexados na base de dados PubMed. Dos 499 artigos obtidos inicialmente, 340 tiveram os títulos e resumos avaliados, com 17 sendo incluídos na amostra. A maioria dos estudos relatou predominância do sexo masculino (87,5%), associação com uso de tabaco e/ou álcool (66,6%), estágios clínicos mais avançados da doença (III e IV) ao diagnóstico (77,7%) e, histopatologicamente, tumores moderadamente diferenciados (72,7%). Com base nos resultados encontrados, acredita-se que possa haver diferenças quanto aos fatores associados à etiopatogenia, ao comportamento biológico e ao prognóstico em pacientes jovens, uma vez que grande parte dos estudos mostra uma progressão tumoral mais rápida e agressiva nessa faixa etária. Sugere-se o desenvolvimento de pesquisas com foco na etiopatogenia e na carcinogênese do CCEO em pacientes jovens, buscando, assim, melhores evidências científicas.

Unitermos: *carcinoma de células escamosas; neoplasia maligna; indivíduos jovens.*

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