

**Clinicopathologic features in oral squamous cell carcinoma: analysis of 98 cases**Farhad Mollashahi. L<sup>1</sup>, Risbaf Fakour.S<sup>2</sup>, Honarmand.M<sup>1\*</sup>, Farhad Mollashahi.N<sup>3</sup><sup>1\*</sup> Department of oral medicine, faculty of Dentistry, Zahedan university of medical sciences, Zahedan, Iran<sup>2</sup> Department of oral and maxillofacial surgery, faculty of Dentistry, Zahedan university of medical sciences, Zahedan, Iran<sup>3</sup> Department of Endodontics, faculty of Dentistry, Zahedan university of medical sciences, Zahedan, Iran\*[honarmand56@yahoo.com](mailto:honarmand56@yahoo.com)

**Abstract:** Oral Squamous Cell Carcinoma (OSCC) is one of the major causes of morbidity and mortality throughout the world and its incidence varies significantly across different geographical regions. Geographical and regional varieties with respect to oral cancer incidence show that the sociocultural aspect of a population's life style plays an important role in the prevalence of this disease. In this study, clinical and histopathological characteristics along with risk factors associated with oral cancer in patients with OSCC are investigated. **Material and methods:** In this retrospective study, data about 98 OSCC patients for 2007-2011 period were gathered and analyzed using the archives of Dental college, Khatam ol-Anbia Hospital and a private clinic in Zahedan City, located south-east Iran. **Results:** Men constituted 66.3% of the patients studied in this research. The patients fell in the age range of 30-83 with a mean of  $58.46 \pm 12.89$ . The parts of the mouth mostly prevailed by the disease were tongue in young subjects, and mandibular vestibule and buccal mucosa in older patients. Men used cigarettes and smokeless tobacco (ST) more than women ( $P=0.002$ ,  $p<0.001$ ), and people with more than 45 years of age used cigarettes and ST more than younger patients, which showed a statistically significant relation ( $P=0.049$ ,  $p<0.001$ ). **Conclusion:** OSCC is a problem in south-east Iran and the use of STs is introduced as a major risk factor associated with OSCC in people with more than 45 years of age. However, the researchers here did not find any major risk factor in young patients who lacked any oral habits. [Farhad Mollashahi. L, Risbaf Fakour.S, Honarmand.M, Farhad Mollashahi.N<sup>3</sup>. **Clinicopathologic features in oral squamous cell carcinoma: analysis of 98 cases.** *Life Sci J* 2013;10(1s):305-309] (ISSN: 1097-8135). <http://www.lifesciencesite.com>. 49

**Keywords:** Oral Squamous Cell Carcinoma, Epidemiology, Iran**Introduction**

SCC is the most prevalent malignant neoplasm of oral cavity (1, 2, 3) and constitutes about 90% of all mouth malignancies (1, 2, 4). It is one of the major causes of morbidity and mortality throughout the world and its prevalence significantly varies in different geographical regions (1, 5). Geographical or regional varieties with respect to oral cancer show that the sociocultural aspect of a population's life style plays an important role in the incidence of oral cancer (6, 7). Oral cancer is significantly more prevalent in some Asian countries, particularly south Asian countries, including India and Pakistan. In these countries, oral cancer is the most prevalent type of cancer in men and the second most prevalent cancer in both genders (8, 9). In some societies in south Asia, chewing arecanut and betel quid makes an important part of the social life and cultural identity of the society (10). In such communities, those who take these substances not only are unaware of the link between chewing arecanut and oral cancer (11, 12), but also they use the substance as a medicine because of perceptions as to the beneficial effect of the substance for health. Arecanut is used as a cathartic, intoxicant, and styptic substance, breath freshener, a taste enhancer,

dyspepsia alleviator, a treatment for bowel parasites, morning sickness in pregnant women, and gynecological problems. (13) The exact prevalence of oral cancer has never been determined in Iran; however, in some areas of Sistan and Baluchestan Province, which borders Pakistan, the disease is more prevalent compared to other regions of the country. The majority of inhabitants of this region, i.e. Baluch ethnicity, are highly similar to Pakistanis in terms of habits and cultural aspects of life. In this south-eastern province of Iran, the use of chewing tobacco is significantly more than its use in other provinces of Iran. Since providing descriptive information with regard to oral cancer incidences in any region is important in terms of understanding the extent of the problem in that region (14, 15), demographics, clinical and histopathological characteristics as well as risk factors associated with OSCC in 98 patients are studied in this research.

**Materials and Methods**

In this retrospective study, data about all OSCC patients for 2007-2011 period were gathered using the archive of Dental college, Khatam ol-Anbia Hospital and a private clinic in Zahedan City (south-east Iran). The data included age, gender, site of lesion, histopathological grading, clinical staging, and

oral habits. The Anatomical sites were categorized into classes of lip(C.00-C.09),oral tongue(C.20-C.23), gingiva (C.30,C.31,C.39), floor of mouth (C.40,C.41,C.48,C.49) and “other” mouth (hard palate, cheek mucosa, vestibule, retromolar area, overlapping lesion of other and unspecified mouth ,and mouth not otherwise specified [NOS] ) sites (C.50,C.60,C.61,C.62,C.68,C.69) based on the Classification of Diseases for Oncology, 3<sup>rd</sup> Edition (ICD-0-3) (16). Clinical staging were performed according to American Joint Committee on Cancer (6), and histopathological evaluation of lesions were conducted based on the WHO’s classification. Data on oral habits, including the use of alcohol, cigarettes, and chewing tobacco, were obtained from patients’ profiles. In order to analyze the data, SPSS17 software along with Pearson’s and Chi-square tests were used. To examine the relation between histopathological grading and clinical staging, Spearman’s statistical test, and to investigate the relation of gender and age with oral habits, Chi-square test was used. The significance value was set as  $p < 0.05$ .

### Results

In this research, data on 98 patients with OSCC were extracted. The ratio of male patients to female patients was 2:1. The patients fell in the age range of 30-83 with a mean of  $58.46 \pm 12.89$ . Of 98 patients, 15 were young (less than 45 years old). In this age group, the ratio of men to women was 1:2 and the age mean was  $37.93 \pm 5.5$ . The demographic data and other data concerning OSCC based on age groups are presented in table 1. Oral habits of patients based on their age group are given in table 2. Men used cigarettes and ST more than women ( $P=0.002$ ,  $p < 0.001$ ), and people with more than 45 years of age used cigarettes and ST more than younger patients.

histopathological grading and clinical staging of patients ( $P=0.626$ ,  $r=0.05$ ).

Table 1. Demographic and other data of patients with oral scc

Variables	Ag $\leq$ 45 years old N (%)	ALL N (%)
1. Total number of patients	15(15.3)	98(100)
2. Gender		
Male	5(33.7)	65(66.3)
Female	10(66.7)	33(33.7)
3. Clinical stage		
Stage I	11(73.3)	15(15.3)
Stage II	3(20)	18(18.4)
Stage III	1(6.7)	31(31.6)
Stage IVA	0	18(18.3)
Stage IVB	0	10(10.3)
Stage IVC	0	6(6.1)
4. Histologic grading		
well differentiated	12(80)	71(72.4)
Moderately differentiated	3(20)	21(2.4)
Poorly differentiated	0	6(6.1)
5. Site		
Lip (C.00- C.09)	0	10(10.2)
Oral tongue (C.20-C.23)	10(66.7)	20(20.4)
gum (C.30, C.31, C.39)	0	5(5.1)
Floor of mouth (C.40, C.41, C.48, C.49)	1(6.7)	6(6.1)
Other mouth (C.50, C.60, C.61, C.62, C.68,C.69)	4(26.6)	57(58.2)

Table 2. Risk habits among patients with oscc

Factors	Ag $\leq$ 45 y (n=15)		All (n= 98)	
	Male	Female	Male	Female
Smoking				
No	4(80)	10(100)	39(60)	32(97)
Yes	1(20)	0	26(40)	1(3)
ST chewing				
No	2(40)	10(100)	16(24.6)	19(57.6)
Yes	3(60)	0	49(75.4)	14(42.4)
Smoking + ST chewing				
Yes			18(21.7)	0

These statistics showed a statistically significant relation ( $P=0.049$ ,  $p < 0.001$ ). Moreover, there was no statistically significant relation between

### Discussion

This study showed that men constituted 66.3% of patients. This finding is in line with other

demographic reports associated with oral cancer (1, 17, 18, 19, 20). Generally, oral cancer is more prevalent among men than women. In some studies, the prevalence rate was 3:1 (21, 22), and in a study in Taiwan, it was reported as 15:1 (23). The prevalence rate in the present study is 2:1. Notwithstanding that gender is not by itself assumed as a risk factor for oral cancer, this gender inclination indicates the association of other risk factors, including use of cigarettes, ST, and alcohol, with male gender (17). In the present study, men used cigarettes and ST more than women and the relation was statistically significant. In general, the sociocultural aspect of either gender plays an important role in the etiology and pathogenesis of OSCC. In terms of age, people over 45 used cigarettes and ST more than younger patients. This difference was statistically significant. The use of chewing tobacco was very infrequent among young people, whereas merely 3 male patients used STs and none of the women had oral habits. These findings are confirmed in Kuriakose's study, where 27 out of 37 patients showed no oral habit and only 6 patients reported paan use (24). In another study conducted in Kerala of India, the rate of oral cancer patients under 30 years of age (excluding those with buccal mucosa) and without oral habits compared to the patients over 30 was statistically significant (25). These findings suggest that factors associated with oral cancer in adult people are not the case for younger people. Nonetheless, more research is required in this respect. Smoking, use of ST and alcohol are known as risk factors associated with OSCC (25). Concurrent use of alcohol, cigarettes and ST increases the risk of oral cancer by 11 folds (26). In this study, 64.3% of patients used ST and 27.4% of them used cigarettes. Due to religious (Islamic beliefs) reasons, none of the patients indicated any use of alcohol. Moreover, 21.7% of patients used STs and cigarettes at the same time. Disregarding gender and age factors, in the present study, the majority of lesions were associated with mandibular vestibule and buccal mucosa. Moreover, due to diagnosis of the disease in its advanced stages, multiple parts involvement were often the case. This can be explained by taking into account the location of paan and other ST within the vestibular depth. The findings of this study are consistent with those of studies conducted in other Asian countries, including Taiwan, New Guinea, Bangladesh and India (23, 27, 28, 29). In these countries, buccal mucosa was the major part involved with the disease. In our study, the most involved part was tongue for subjects with less than 45 years of age. Moreover, none of the young woman with carcinoma of the tongue showed any oral habits. In a study by Jones et al (30), women under 40 with tongue carcinoma were twice as much

as men with this disease. These findings are confirmed by those of Gallery (31) and McGregor (32). In a study conducted by Sarkaria and Harari (33) in America, young patients with tongue cancer used less tobacco and paan compared to older patients. In other research, a higher frequency of oral cancer in young women compared to young men in contrast with the sex distribution in older age group was reported. Nonetheless, there was no difference in terms of lesions locations (24, 34). On the contrary, there was no difference between over-40 and under-40 patients with respect to gender (35). In the present study, the majority of patients over 45 years of age were in the advanced stage of the disease (Stage III=36.1% and Stage IV=41%). Unfortunately, the patients had not referred to physicians before the advance stages of the disease and had been indifferent toward their oral lesions. At this stage, the prognosis for the disease in patients is weak and the 5-year survival rate for the patients in stage IV is 9% (21). In the study by Shenoj et al, when diagnosed, the majority of patients (82.37%) were in stage III of the disease (36). Both the patient and the physician can be blamed for the late diagnosis of OSCC (36, 37, 38). However, a study conducted in Argentina showed that late diagnosis by physicians has the highest association with the stage of the tumor (38). Poverty, illiteracy, and resort to domestic treatments can contribute to late referral of patients to doctors for medical treatment (36, 39). Where 93.3% of young patients were in stages I and II of the disease, in the study conducted by Sarkaria and Harari, 64% of young patients were diagnosed with stage I and II of the disease (33). In terms of histopathological grading, the majority of lesions in both age groups were well differentiated. In summary, OSCC is assumed as a problem in south-east Iran and the use of ST is deemed as a major risk factor associated with OSCC in people over 45. However, the researchers here did not find any major risk factors associated with OSCC in patients less than 45 years of age who lacked any oral habit. Moreover, due to differences in terms of sample size, the method used to record oral habits, and classification of anatomical sites, comparing the results of this study with those of other investigations is difficult and this could be assumed as a limitation of this study.

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