



Finding the Relationship of Smoking and Survival Rate in Oral Submucous Cancer Patients

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ABSTRACT

Introduction: Cancer is a global public health issue, causing approximately 8.8 million deaths per year. According to the World Health Organization (WHO), the countries that suffer most from the disease are low-income and middle-income countries.

Objectives: The main objective of the study is to finding the relationship of smoking and survival rate in oral submucous cancer patients.

Material and methods: This cross sectional study was conducted in Services Hospital, Lahore during 2021. The data was collected from 204 patients. From this sample socio-demographic data such as age, sex, education, marital status, smoking status, and method of hospital admission were analyzed.

Results: The data was collected from 204 patients. Most patients were up to 65-year-old, with no difference in age distribution between the groups. Regarding the type of treatment, nonsmoking patients complied with no treatment, surgery or surgery plus radiotherapy (RT), with RT associated with chemotherapy (CT) being the most common treatment.

Conclusion: It is concluded that we found the significant positive dose-response relationship among smokers on clinical outcome in OSCC patients and that non-smokers were worse prognosis than light smokers. In addition, this effect might differ by treatment method.

KEYWORDS: Oral, Cancer, Public, Health.

INTRODUCTION

Cancer is a global public health issue, causing approximately 8.8 million deaths per year. According to the World Health Organization (WHO), the countries that suffer most from the disease are low-income and middle-income countries. Mouth cancer is among the 10 most frequent cancers in the world population. Oral submucous fibrosis (OSF) is a potentially malignant disorder of the oral cavity [1]. Oral squamous cell carcinoma (OSCC) is a basic medical condition influencing a huge number of individuals around the world. Regardless of the way that the causes might vacillate regionally, the course of the ailment and persevering through wins courageous. The possibly risky season of OSCC is a viewpoint that gives an invaluable method for managing expectation [2]. This period may be displayed as restricted or summarized changes of the epithelium, driving towards carcinogenesis.

OSF might cause rot in the epithelium, subsequently growing the malignant growth causing specialist invasion [3]. Arecoline is an evaporating administrator and may pull back the cells enough to permit pervasion of malignant growth making specialists through the epithelium show up at the basal layer, which is the isolating cell layer where neoplastic cell change might happen [4]. The vulnerability of the epithelium to malignant growth causing specialists is a strong instrument that might expect a task in arecoline-related carcinogenesis. Oral submucous fibrosis (OSF) is one such possibly hurtful condition that subjects the oral opening to an expansive change in morphology and physiology [5].

The clinical appearance contains the incredible arrangement of three: brightening of the mucosa, consuming sensation on unsettling influence with blazing sustenance, and depapillation of the tongue [6]. These will be followed by depigmentation of the lips and loss of adaptability of the mucosa with progression of clear tacky groups in the oral pit, progressing from the principal region to the back area of the mouth [7]. There are also clear woody changes of sensitive feeling of taste and tongue, at last achieving loss of transportability of the tongue close by restricted mouth opening [8].



Oral submucous fibrosis (OSF) is known as an endless disorder which prompts obliged mouth opening and it being a pre hurtful physical issue is another particularly critical reality. It is from time to time found in the space of South and Southeast Asia where by far most of the people chomp areca nut in its harsh construction or with betel quid and tobacco. Areca nut has been summoned as most grounded risk for causing OSF and as demonstrated by WHO specific, it has been named as a threat making substance the human [9].

OSF is a chronic progressive premalignant condition and commonly reported in Taiwan, Bangladeshi, Pakistan, Mainland China and India [10]. OSF is rarely seen in the United States and is seen among immigrants residing there, especially from South Asian population. Globally, OSF is found in 2.5 million people mostly from southern India and ranges from 0.2-2.3% in males and 1.2-4.57% in females. OSF has high morbidity because it causes inability to open mouth, trouble eating and eventually leading to nutritional deficits. Significant death rate since it can transform into OSCC [11].

OBJECTIVES

The main objective of the study is to finding the relationship of smoking and survival rate in oral submucous cancer patients.

MATERIAL AND METHODS

This cross sectional study was conducted in Services Hospital, Lahore during 2021. The data was collected from 204 patients. From this sample socio-demographic data such as age, sex, education, marital status, smoking status, and method of hospital admission were analyzed. Available clinical data were also collected from the medical records, including oral cavity location, tumor clinical staging (TNM), overall survival and treatment performed, which is divided into surgery, surgery associated with radiotherapy, radiotherapy, radiotherapy associated with chemotherapy, surgery associated with radiotherapy and with chemotherapy or no treatment. The location of the primary tumor was classified as recommended by the WHO, according to the international classification of diseases, which were the lip, gingiva, anterior or posterior thirds of the tongue, hard palate, floor of the mouth and other. The data were analyzed using the Statistical Packing for Social Sciences (SPSS) software, version 20.0.

RESULTS

The data was collected from 204 patients. Most patients were up to 65-year-old, with no difference in age distribution between the groups. Regarding the type of treatment, nonsmoking patients complied with no treatment, surgery or surgery plus radiotherapy (RT), with RT associated with chemotherapy (CT) being the most common treatment. Regarding the TNM classification, patients with T3 and T4 tumors had a shorter survival time of 70.80 ± 8.69 months compared to those with T1 and T2 tumors who had a survival time of 92.88 ± 8.93 months (p = 0.004). In relation to lymph node metastasis, the presence of some affected lymph nodes reduced the mean overall survival time (54.17 ± 5.81) compared to patients without lymph node metastasis (96.04±10.24 months) (p = 0.021). The presence of distant metastasis did not significantly influence the decrease in survival.

Table 01: Clinic Epidemiological Characterization of Oral SCC Patients

	Smoking				p-Value
	No		Yes		
Sex					
Female	36*	52.9%	38	27.9%	<0.001
Male	32	47.1%	98*	72.1%	
Age					
Up to 65 years old	42	61.8%	75	55.1%	0.368
Above 65 years old	26	38.2%	61	44.9%	
Education					
Illiterate	6	8.8%	37*	27.2%	0.001
Elementary school	45	66.2%	84	61.8%	
High School	17*	25.0%	15	11.0%	
T					



T1-T2	28*	56.0%	35	35.0%	0.014
T3-T4	22	44.0%	65*	65.0%	
N					
N0	27*	55.1%	36	35.6%	0.024
N+	22	44.9%	65*	64.4%	
M					
M0	43	100.0%	65	97.0%	0.519
M1	0	0.0%	2	3.0%	
Treatment					
None	7*	10.3%	13	9.6%	0.024
Surgery	8*	11.8%	3	2.2%	
Surgery + RT	21*	30.9%	32	23.5%	
RT	10	14.7%	31*	22.8%	
RT + CT	22	32.4%	57*	41.9%	

Table 02: Multivariate Analysis of Clinic Epidemiological

	p-Value	HR	CI 95%	
Smoking (Yes)	0.970	-	-	-
Sex (M)	0.657	-	-	-
Age (>65)	*0.015	2.55	1.20	5.43
Education (Illiterate)	0.078	-	-	-
Location (Tongue)	0.803	-	-	-
T (3/4)	*0.033	2.23	1.07	4.65
N (N+)	0.106	-	-	-
M (M+)	0.973	-	-	-
Treatment (Surgery)	0.821	-	-	-
Marital status (Yes)	0.380	-	-	-
Alcoholism (Yes)	0.100	-	-	-
Entry (Private plans)	0.185	-	-	-

DISCUSSION

Oral SCC is the most prevalent malignant neoplasm in this anatomical site. Our findings corroborate those already existing in the literature that show a higher prevalence of oral SCC in males and a direct association with tobacco use [12]. An epidemiological evaluation of patients with head and neck cancer by Alvarenga et al., (2008) showed that 86% are male and 14% are female, which according to Sales et al., (2006), may be because women are less likely to smoke than men are. [13]. Shah et al similarly insisted that a further degree of little young people regularly used areca nut and its things. Another assessment reports that OSF is continuously typical in second ten years of life, and with growing age more patients proceeded to OSCC [1].

In past assessments it has been shown that the submucosa, in OSF, encounters hypochondriac changes due to over the top fibrosis, unpredictable collagen association, lessened vascularity, and hypoxia. Along these lines, their pathway of destructive change takes course impacted by inherited and nuclear changes [11].

CONCLUSION

It is concluded that we found the significant positive dose-response relationship among smokers on clinical outcome in OSCC patients and that non-smokers were worse prognosis than light smokers. In addition, this effect might differ by treatment method



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