

# Prevalence and Incidence of Oral Squamous Cell Carcinoma among Iraqi People at Baghdad City from 2003-2013

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## ABSTRACT

Oral squamous cell carcinoma (OSCC) is a cancer arising from squamous cells that form the lining of the oral cavity and may affect any site of the mouth especially tongue and floor of the mouth. It may be managed by surgery alone or in combination with radiotherapy and/or chemotherapy. It constitutes poor prognosis about 50% 5 years survival rate due to late diagnosis where the lesion reached a limit that is difficult to control. The documentation of incidence and prevalence of OSCC help the researchers and dentists in early detection and diagnosis. A data collected from 2003-2013; the number of the patients were 351 where the males were 61.5% and females were

38.5%, the tongue represented the first common site and with increased age the prevalence increased too.

**Keywords:** oral squamous cell carcinoma, oral cavity, prevalence, incidence

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## INTRODUCTION

OSCC is a cancerous lesion of the mouth and affects any site and tissues of the oral cavity. 90% of oral cancer concerned with OSCC<sup>(1, 2)</sup>. This disease caused by genetic changes resulting in uncontrolled cancerous cell proliferations that triggered by intrinsic and/or extrinsic factors as tobacco and alcohol consumption<sup>(3-8)</sup>. Determination of the site of OSCC play a role in prognosis as the site can determine the accessibility and extension of surgery in addition of radio and/or chemotherapy<sup>(9,10)</sup>. Because of majority of cases are diagnosed in later stages III and IV<sup>(11,12)</sup> resulting in poor prognosis with survival rate less than 50% 5 years so early diagnosis is so important for good prognosis<sup>(13,14)</sup>. The current study was designed to assess and evaluate the prevalence of OSCC in relation to Site, gender and age.

## MATERIALS AND METHODS

The archival data of 351 patients from 2003-2013 at oncology center of Baghdad city were analyzed for determination of oral squamous cell carcinoma frequency according to site (lip, tongue, palate and others), gender and age (younger than 51 years old and older). Descriptive and

inferential statistics was done by using SPSS version 21 software installed on PC. A chi-squared and Fisher's exact test were employed for detection of significance differences. Probability values for statistical tests were two-tailed and  $p < 0.05$  was considered significant, and  $p < 0.01$  was considered highly significant.

## RESULTS

Among 351 patients 216 were males 61.5% and 135 were females 38.5%. The statistical analysis determined the relative frequency according to the site of the following (tongue 39.59%, lip 26%, others 19.86%, gingiva 7.04%, floor of the mouth 3.8% and palate 3.66%) table (1).

Table (2) represented the relative frequency of OSCC in respect to gender and year, with maximum registration at 2006 for males and 2005 for females while the 2008 recorded the least patients for males and 2007 for females.

Table (3) and figure (1) presented a highly significant  $p$  value in relation to age and gender for years 2003, 2006, 2007, 2011, 2012, 2013 and non-significant for years 2004, 2005, 2008, 2009 and 2010.

Table 1. Relative frequency of OSCC in respect to sites

Year	lip	Tongue	gingiva	Floor of the mouth	palate	Others
2003	16.13	51.61	6.45	3.23	3.23	19.35
2004	36.84	42.11	2.63	5.26	7.89	5.26
2005	37.84	45.95	5.41	0	5.41	5.41
2006	16	50	12	6	2	14
2007	8	48	20	0	4	20
2008	18.18	54.55	4.55	0	4.55	18.18
2009	37.04	29.63	3.7	3.7	3.7	22.22
2010	31.25	34.38	6.25	3.13	0	25
2011	25.71	34.29	5.71	5.71	2.86	25.71
2012	45.83	25	4.17	8.33	0	16.67

2013	13.33	20	6.67	6.67	6.67	46.67
100%	26.01%	39.59%	7.04%	3.8%	3.66%	19.86%

**Table2. Relative frequency of OSCC sites in respect to gender and year**

Year	Site	Male		Female	
		Frequency	Relative Frequency	F	RF
2003	lip	4	22.22	1	7.69
	tongue	9	50.00	7	53.85
	gingiva	1	5.56	1	7.69
	Floor of the mouth	0	0.00	1	7.69
	palate	1	5.56	0	0.00
	others	3	16.67	3	23.08
2004	lip	10	45.45	4	25.00
	tongue	8	36.36	8	50.00
	gingiva	0	0.00	1	6.25
	Floor of the mouth	2	9.09	0	0.00
	palate	1	4.55	2	12.50
	others	1	4.55	1	6.25
2005	lip	7	36.84	7	38.89
	tongue	10	52.63	7	38.89
	gingiva	0	0.00	2	11.11
	Floor of the mouth	0	0.00	0	0.00
	palate	0	0.00	2	11.11
	others	2	10.53	0	0.00
2006	lip	6	16.67	2	14.29
	tongue	17	47.22	8	57.14
	gingiva	5	13.89	1	7.14
	Floor of the mouth	2	5.56	1	7.14
	palate	1	2.78	0	0.00
	others	5	13.89	2	14.29
2007	lip	1	5.56	1	14.29
	tongue	10	55.56	2	28.57
	gingiva	3	16.67	2	28.57
	Floor of the mouth	0	0.00	0	0.00
	palate	1	5.56	0	0.00
	others	3	16.67	2	28.57
2008	lip	2	15.38	2	22.22
	tongue	8	61.54	4	44.44
	gingiva	0	0.00	1	11.11
	Floor of the mouth	0	0.00	0	0.00
	palate	1	7.69	0	0.00
	others	2	15.38	2	22.22
2009	lip	6	35.29	4	40.00
	tongue	5	29.41	3	30.00
	gingiva	0	0.00	1	10.00
	Floor of the mouth	1	5.88	0	0.00

palate	1	5.88	0	0.00
others	4	23.53	2	20.00

Year	Site	Male		Female	
		Frequency	Relative Frequency	F	RF
2010	lip	7	36.84	3	23.08
	tongue	7	36.84	4	30.77
	gingiva	1	5.26	1	7.69
	Floor of the mouth	0	0.00	1	7.69
	palate	0	0.00	0	0.00
	others	4	21.05	4	30.77
2011	lip	5	23.81	4	28.57
	tongue	9	42.86	3	21.43
	gingiva	0	0.00	2	14.29
	Floor of the mouth	1	4.76	1	7.14
	palate	1	4.76	0	0.00
	others	5	23.81	4	28.57
2012	lip	7	46.67	4	44.44
	tongue	4	26.67	2	22.22
	gingiva	0	0.00	1	11.11
	Floor of the mouth	1	6.67	1	11.11
	palate	0	0	0	0.00
	others	3	20.00	1	11.11
2013	lip	2	11.11	2	16.67
	tongue	4	22.22	2	16.67
	gingiva	1	5.56	1	8.33
	Floor of the mouth	0	0.00	2	16.67
	palate	2	11.11	0	0.00
	others	9	50.00	5	41.67

**Table3. Incidence rate of OSCC in relation to age and gender.**

Year	Aged under 51 Years		Aged 51 Years and older		P value
	Male	Female	Male	Female	
2003	0.125	0.063	0.157	0.141	0.003**
2004	0.107	0.076	0.229	0.168	0.928NS
2005	0.164	0.074	0.208	0.104	0.583NS
2006	0.158	0.086	0.359	0.115	0.002**
2007	0.084	0.056	0.168	0.042	0.000**
2008	0.055	0.027	0.123	0.095	0.114NS
2009	0.040	0.027	0.186	0.106	0.567NS
2010	0.065	0.052	0.181	0.117	0.375NS
2011	0.101	0.025	0.164	0.152	0.000**
2012	0.037	0.037	0.148	0.074	0.013*
2013	0.048	0.012	0.168	0.132	0.001**

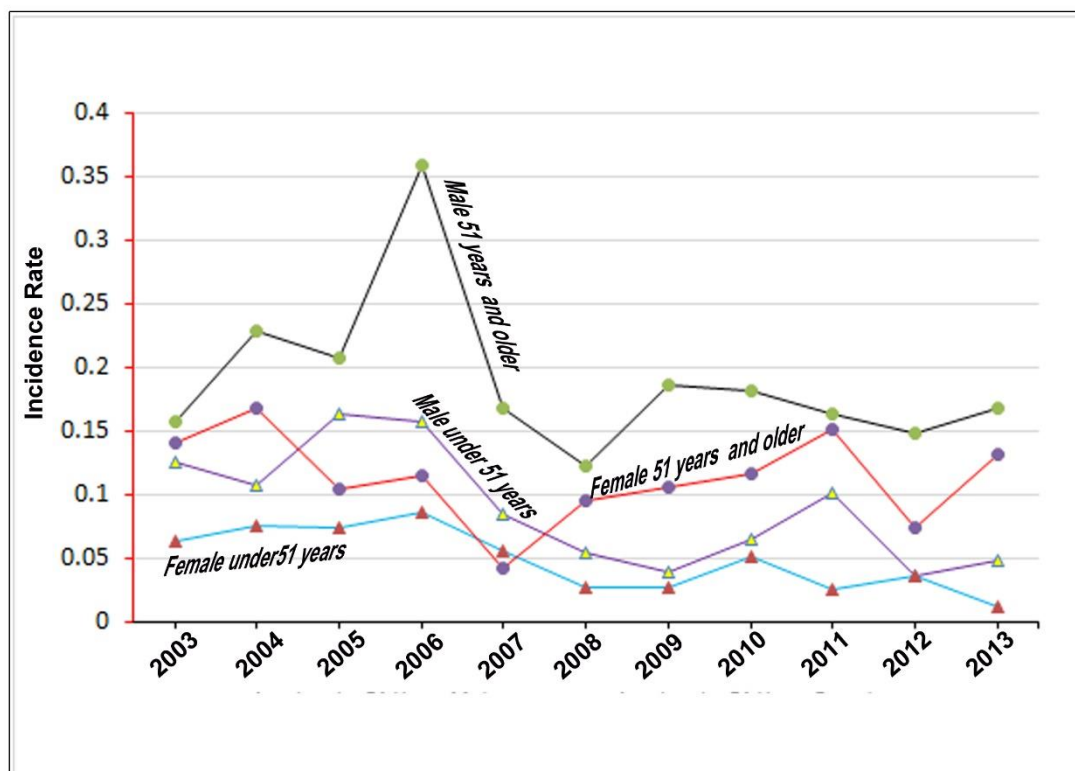


Figure1. Incidence rate of OSCC in relation to age and gender.

## DISCUSSION

The results of this current study and according to gender were 61.5% males and 38.5% females represented with high incidence in males than females<sup>(15-19)</sup>, and this is due to the higher susceptibility of men for exposure to risk factors than females.

The incidence of OSCC increased with age and may be noticed after 5<sup>th</sup> decade of age more than younger patients and this results were in agree with many studies concerned with incidence of OSCC with age<sup>(20-24)</sup>.

The sites of the lesion of OSCC were in accordance with many studies in in communities where the patients smoke tobacco where the tongue represented the 1<sup>st</sup> common site<sup>(25, 26)</sup>. The results of this study were not in accordance with studies planned in communities where the patients chewed tobacco instead of smoking it as India where the gingiva-buccal complex was the predominant site of OSCC<sup>(27)</sup>.

## CONCLUSION

In this current study 351 patients were diagnosed with OSCC and 216 (61.5%) were males and 135 (38.5) were females. The tongue represented the 1<sup>st</sup> common site of OSCC followed by lip, others (as retromolar area and buccal mucosa), gingiva, floor of the mouth and palate. The incidence of this disease increased with age especially after 50<sup>th</sup> years old.

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