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Incidence of Mouth Cancer in Iraq.

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Abstract*: The incidence of mouth cancers among Iraqi people is reviewed from 1973-2021 in different Iraqi provinces. The incidence rates are also illustrated in relation to age, sex, site of cancer and year of registration. Incidence rate differs widely in relation to locality, age, sex and race. The risk factors for the incidence can be attributed to tobacco and /or alcohol consumption. The relationship between diet and nutrition to the risk of cancer development has been established by several epidemiological and laboratory studies. They indicated that low intake of fruits and vegetables predisposes to increased risk of cancer development. Other risk factors include genetic, sun exposure, mate drinking (tea-like beverage), viral infection, fungal infection and chronic trauma. Adults and children of both sexes are infected. All authors in Iraq indicated that tongue is the most common site for mouth cancer among Iraqi people. Implementing a national control program should include a primary health care, health education, well-balanced diet, environmental sanitation and health education to stress the important of the hazard of tobacco and alcohol. The knowledge about mouth cancers considerably increased when the subjects received information from their dentists.*

Keywords: Epidemiology, Incidence, Mouth cancer.

Introduction

Mouth cancers are distributed worldwide. They are responsible for millions of morbidity and mortality. Thus, it is a public health problem in many parts of the world. In addition, cancer might be undetectable and unrecorded in many countries. Oral squamous cell carcinoma is the commonest oral malignancy. It is incident in middle-aged and elderly, although it has been recorded in young adults (1). An estimated 263 000 new mouth cancer cases were reported annually over the world which account 2.1% of all new cases were recorded (2). Socio-cultural behavior for population have an important role in the geographical distribution of the disease (3). Incidence rate differs widely in relation to locality, age, sex and race. Few studies were carried out in Arab world in relation to the incidence of mouth cancer including Kuwait (4), United Arab Emirates (5), Sudan (6), Saudi Arabia (7) and Jordan (8) as well as in Iraq (the present review).

An increase in incidence was noticed in United Kingdom (9), Netherland and Denmark (10), India, Pakistan and Bangladesh (11). In contrast, a decrease in the incidence have reported in USA, Italy, Hong Kong, France, Germany and Australia (12).

In Iraq, mouth cancer represents 4.5% of all malignant cancers as recorded by Iraq cancer registry (13), the present review aimed to determine the analysis of Iraqi mouth cancers data according to age, sex, year of registration and cancer site over time.

Results and Discussion

The incidence rates of mouth cancer are reviewed according to types of patients including age and sex in different Iraqi provinces (Table 1). The incidence is varying from one region to another.

Fuoad et al., (14) result has indicated a slight increase in the rate of mouth cancer over time (14.5%) compared to a five-year (2004-2009) retrospective study (12.3%) in Sulaimania (15) and another previous study in Baghdad during 1991-2000 (9.97%) (16) as well as in the present review (Table 1, 2). This can be associated to pollution, recurrent explosions and wars in Iraq. Furthermore, it might be related to the practices of tobacco smoking and drinking alcohol in both men and women which increased the risk of lip cancer worldwide (17), including Iraq (15,18,19,20). All authors in Iraq indicated that tongue is the most common site for mouth cancer

among Iraqi people (Table 2) which is in agreement with studies in Europe and USA (11). Buccal mucosa is the most common site in Mosul (19), Basrah (21) as well as among Asian populations due to betel quid/tobacco chewing habits (11). Cheek was the dominant site in women, while lip, face and mouth floor were observed among men. Lip, tongue, gum, palate found among males than females (18,19,20,22,23).

Mouth cancer affected males more than females (Table 1). This is in agreement with most similar studies in countries around the world where the ratio is 1.5:1 (11). The incidence can be explained by the contributions of smoking, alcohol or hormonal factors as well as exposure to radiation due to men's job which lead to incidence of lip cancer (17). More than 80% or mouth cancers can be attributed to tobacco and /or alcohol consumption (24). The relationship between diet and nutrition to the risk of cancer development has been established by several epidemiological studies (25). They indicated that low intake of fruits and vegetables predisposes to increased risk of cancer development. Certain food as processed meats, cakes, desserts, butter, eggs, soups, red meat, salted meat, cheese, pasta or rice and corn bread (26). More frequent consumption of fruit and vegetables, particularly of carrots, fresh tomatoes and green peppers were associated with reduced risk of oral and pharyngeal cancer (27) as well as other food as fish, vegetable oil, bread, cereals, protein, fat, fresh meat, chicken, liver, shrimp and fiber (28). Other risk factors include genetic (29), sun exposure (30), mate drinking (tea-like beverage) (27), viral infection (31), fungal infection (32) and chronic trauma (33).

Age-group 61-70 years was highly affected as stated by the Iraqi Cancer Registry (22), in Sulaimani (15) and in Basrah (21) From 1). Age ranged 41-60 years showed tongue cancer more other types (22).

Conclusion

Mouth cancer is incident among all types of communities and population samples from both urban and rural regions of Iraq. Adults and children of both sexes are infected. It is an important disease and remain challenge to the dentist and since the early diagnosis of oral cancer is vital in the treatment and prognosis of mouth cancer. Dentist should continue to be encouraged to perform mouth cancer examination for all patients.

Therefore, due to lack of effective chemotherapy or vaccine against cancer, an urgent and efficient preventive and control measures is essential. Implementing a national control program should include a primary health care, health education, well-balanced diet, environmental sanitation and health education to stress the important of the hazard of tobacco and alcohol. Well trained health workers chosen from the same community are valuable in the diagnosis and treatment especially in rural areas and far villages in the country. The knowledge about mouth cancers considerably increased when the subjects received information from their dentists.

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Table 1. Distribution of mouth cancer in relation to province, years of registration, age and gender.

Ref. No.	Province	Years of incidence	Age (Years)	Sex	
				Male No. (%)	Female No. (%)
(perriman , 1973) 18	Baghdad	1967-1972	11-80	13 (56.5)	10 (43.5)

(Al-Niaimi, 2006) 19	Mosul	1995-1999	2.5-90	64 (53.8) 55 (46.2)
Talabani et al., 2010, 34	Sulaimania	1995-2004	51-60	44 (60.3) 29 (39.7)
(Museedi & Younis, 2014) 22	Baghdad	2000-2008		1035 752 (57.9) (42.1)
(Taha & Younis, 2015) 20	Baghdad	2001-2013	<20-70	976 688 (58.7) (41.3)
(Al-Kawaz, 2010) 35	Baghdad	2003-2006	51-60	80 (62.0) 49 (38.0)
(Khudier, 2012) 15	Sulaimania	2004-2008	50-70	M:F 1.2:1
(Fuoad et al., 2021) 14	Sulaimani	2008-2019	1-90	180 157 (53.4) (46.6)
(Aljazaeri et al., 2020). 21	Basrah	2012-2017	1-85	283 277 50.54 49.46
(Al-Mahfoud et al., 2017) 23	Basrah	2015-2016	11-80	31 (79.5) 8 (25.5)
(Alshami et al., 2019) 36	Baghdad	2019.	18-80	128 (40.3) 190 (40.3) (59.7)

Table 2. Incidence of mouth cancers and their types in the Iraqi provinces.

Ref. No.	No. examined	No. (%) incidence of oral cancer
(perriman , 1973) 18	202	Palat 19 (11.3), tongue 38 (22.5), lips 50 (29.5), maxilla 21 (12.3), floor of the mouth 26 (15.4), buccal commissure 47 (26.6), retromolar regions 14 (8.2).
(Al-Niaimi, 2006). 19	119	Palat 14 (11.7), tongue 28 (23.5), lips 49 (41.1), floor of the mouth 9 (7.5), buccal mucosa 8 (6.7).
Talabani et al., 2010. 34	73	Tongue 16 (21.9), unspecified 57 (78.1).
(Museedi & Younis, 2014). 22	1787	Tongue (o.47), lips(0.3), salivary gland (0.19).
(Taha & Younis, 2015). 20	1664	Lip 382 (23), tongue 711 (42.7), Gingiva 83 (5.09), Floor of the mouth 98 (5.9), palate 72 (4.3), unspecified 318 (19.1).
(Al-Kawaz, 2010). 35	129	Tongue 72 (55.8), floor of the mouth 5 (3.9), unspecified 52 (40.3).
(Khudier, 2012). 15	82	Lower lip (39), tongue (20), salivary gland (19.6).
(Fuoad et al., 2021). 14	302	Palat 33 (10.9), tongue 50 (16.5), lip 39 (12.9), oropharynx 62 (20.5) , maxilla 45 (14.9), jaw 38 (12.6), salivary gland 35 (11.7).
(Aljazaeri et al., 2020). 21	560	Tongue 101 (18), buccal mucosa 89 (15.9), salivary gland 34 (6.1), gingiva 88 (15.7).
(Al-Mahfoud et al., 2017). 23	21	Palat 3 (14.3), tongue 5 (23.8), cheek 3 (14.28), lips 2 (9.52), oropharynx 3 (14.3), post nasal space 1 (4.76), salivary gland 1 (4.76), jaw 1 (4.76).
(Alshami et al., 2019). 36	318	Unspecified.