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Epidemiology of Skin Cancer

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Objective: The aim of the study is to find out the skin cancer distribution, level of risk and histopathological typing.

Design: Retrospective cancer registry-based study.

Setting: Cancer Research Unit, Basrah Medical College.

Method: The study was performed from 2005 to 2009. Four hundred fifty-seven new cases were registered during five years. Eighty-three cases were not inhabitants of Basrah governorate and were excluded from statistical analysis. Therefore, the sample used in the study is 374 (81.8%).

Result: Skin cancer accounts for 4.7% of all new cancer cases registered from 2005 to 2009. The mean age of skin cancer cases was 54.8+18.4 years. The risk increased with advancing age in both sexes in terms of relative frequency and in age specific incidence.

Conclusion: Skin cancer has a major share among total cancer cases in Basrah. Further analytical epidemiological study to identify the determinants of local patterns is advised.

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Skin cancer is one of the commonly reported cancers. It is one of the commonest cancers in the United States[1,2]. The most common types are basal cell carcinoma, squamous cell carcinoma and malignant melanoma, which is the most fatal skin cancer. In United Kingdom, 5,697 cases of malignant melanoma were reported among women compared to 4,975 cases among men[3]. In the United Kingdom, malignant melanoma in particular occupied the sixth rank among all cancers[4].

Etiology of skin cancer is complex and among the incriminated risk factors are sunlight and certain host factors. Risk factors may exhibit different pattern with different types of skin cancer and generalization among different populations might be unrealistic[5,6].

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In Iraq, skin cancer ranks among the top ten cancers. According to the results published in the annual report of the Iraqi Cancer board for the year 2008, skin cancer occupies the 9th position among all newly registered cases[7]. In Basrah, it occupies the 6th position among all newly registered cases during the period 2005-2008[8].

The aim of this study is to evaluate the prevalence of skin cancer during 2005 to 2009.

METHOD

All cases diagnosed, treated or registered in Basrah during 2005 to 2009 were analyzed. The main source for data used in this study was the Cancer Control Centre Registry in Basrah Governorate, the Department of Pathology and Forensic Medicine and the Departments of Plastic Surgery and Dermatology-Al-Sadr Teaching Hospital.

The data were analyzed by SPSS Version 15. Age standardized incidence rate was calculated by direct standardization using world population given by Parkin et al[9].

RESULT

Skin cancer accounts for 4.7% of all new cancer cases in Basrah during 2005 to 2009. The mean age of skin cancer cases was 54.8+18.4 years (for males 55.2+17.8 and for females 54.4+19.0).

Table 1 shows a total of 374 new cases of skin cancer were diagnosed. This gives an annual average of 75 cases. The risk is almost equal between males (188 cases) and females (186 cases). The age pattern does not show great variation between males and females (p=0.355) but the relative share of cases increases with advancing age in both sexes.

Table 1: Age and Sex of New Skin Cancer Patients

Age Group	Male	Female	Total
	Number and Percentage		
< 15	7 (3.7)	7 (3.8)	14 (3.7)
15-24	4 (2.1)	10 (5.4)	14 (3.7)
25-34	7 (3.7)	10 (5.4)	17 (4.5)
35-44	25 (13.3)	15 (8.1)	40 (10.7)
45-54	47 (25)	39 (21)	86 (22.7)
55-64	30 (16)	39 (21)	69 (18.4)
65-74	44 (23.4)	46 (24.7)	90 (24.1)
≥ 75	24 (12.8)	20 (10.8)	44 (11.8)
Total	**188 (100)**	**186 (100)**	**374 (100)**

Chi-squared =7.757 7df P=0.355

Table 2 shows the age specific incidence rates of all skin cancers per 100,000 populations. The incidence rate is extremely low in children aged less than 15 years (0.339 per 100,000 populations). The rates then increase with advancing age from 1.241 in adults aged 15-44 years to 44.790 in elderly people aged 65 years and above. The crude incidence rate is 3.250 and the age standardized incidence rate is 5.962 per 100,000 populations.

Table 2: Age Specific Incidence Rates per 100,000 Populations

Age Group	Total Population	Average Annual IR*/100,000
< 15	826 185	0.339
15-44	1 143 771	1.241
45-54	170 300	9.982
55-64	101 259	13.628
≥ 65	59835	44.790
Total	**2301351**	**3.250**

* Incidence Rates, Age standardized incidence rate using World population given by Parkin et al 2005[9] = 5.962

Table 3 summarizes the classification of all new cancers of the skin registered in Basrah during 2005 to 2009. The classification is based on histopathological and cytological examination. Two cancers are predominant, basal cell carcinoma and squamous cell carcinoma representing 164 (44.3%) and 129 (34.9%) respectively. Other important skin cancers are dermatofibrosarcoma 19 (5.1%), malignant melanoma 17 (4.6%) and adenocarcinoma 13 (3.5%). Kaposi sarcoma and undifferentiated cancer accounts for 6 (1.6%) each. Other cancers are less frequent as shown in table 3.

Table 3: Histopathological Classification of Skin Cancer

Histopathological Type	Number (%)
Basal cell carcinoma	164 (44.3)
Squamous cell carcinoma	129 (34.9)
Dermatofibrosarcoma	19 (5.1)
Melanoma	17 (4.6)
Primary adenocarcinoma	13 (3.5)
Kaposi sarcoma	6 (1.6)
Undifferentiated	6 (1.6)
Baso-squamous carcinoma	5 (1.4)
Mycosis fungicides	4 (1.1)
Carcinoma of skin appendages	3 (0.8)
Bowens disease	2 (0.5)
Markel cell carcinoma	1 (0.3)
Malignant pilar tumor	1 (0.3)
Total	**370 (100)***

* Four cases could not be ascertained due to deficient data

DISCUSSION

Previous research studies by Basrah Cancer Research Group (BCRG) and other researchers revealed that cancer in general and skin cancer represents an important and growing public health problem in Basrah. In a recent study by BCRG, Habib et al reported a crude incidence rate of all cancers of nearly 71 per 100,000 populations and skin cancer ranked the 6th among males, the 7th among females and the 6th among both sexes[8,10-15].

This study revealed similar result to previous reports[12,15]. The age standardized incidence rates using world population age structure was 5.962 per 100,000 populations[9]. Skin cancer is common in Basrah as in some other countries. The ranking of skin cancer among cancers of all sites is similar to that reported in Jordan, Oman and Qatar but the sex distribution is different[16,17]. In Jordan, Kuwait, Qatar, Oman and Bangladesh, more skin cancer was reported among males compared to females[16,17]. In Basrah the risk between sexes is almost similar.

Malignant melanoma is relatively infrequent in Basrah compared to figures reported in USA and Britain[3,4]. This could probably be attributed to the difference in skin type and to the pattern of exposure to sunlight[18-20]. The majority of Basrah citizens are of type III and IV skins which are less susceptible to malignant melanoma and the pattern of exposure to sunlight is continuous and throughout life.

CONCLUSION

Skin cancer is fairly common in Basrah in absolute and relative terms in both sexes. Analytical epidemiological studies to determine pattern of risk factors are highly recommended.

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