Frequency of Skin Cancer among Iraqi Patients Attending Dermatology Center/Medical City in Baghdad between January 2013 and December 2018

Ihsan A. Al-Turfy*, Hayder S. Al-Mufarji*, Adel R. Alsaadawi**

ABSTRACT:

BACKGROUND:
Nonmelanoma skin cancer is the most common cancer in humans especially with lighter skinned individuals and ultraviolet exposure which are the major predisposing risk factors. There are many reports of increased frequency of skin cancer among Iraqi individuals.

OBJECTIVE:
To study the frequency of skin cancer in Iraqi patients.

PATIENTS AND METHODS:
This is a retrospective study, conducted in the outpatient clinic of dermatology center at Baghdad Teaching Hospital from the beginning of January 2013 to the end of December 2018. A total of 365 biopsies proved histopathologically as malignant skin cancer were included in the study.

RESULTS:
Basal cell carcinoma accounted for 37.3% (n=136), mean age was 63±13 years. Squamous cell carcinoma represented 16.2% (n=59), mean age was 61±15 years. Mycosis fungoid frequency was 15% (n=55) with a mean age of 47±16 years. Kaposi sarcoma was 10.1% (n=37), mean age 64±15 years. Cutaneous metastasis represented 7.8% (n=29) with mean age of 64±5 years. Patients with malignant melanoma were 4.3% (n=16), mean age was 50±19 years. Other less commonly skin malignancies represented 9.3% (n=33).

CONCLUSION:
The most frequent primary skin cancer is nonmelanoma skin cancer followed by mycosis fungoides, Kaposi Sarcoma and malignant melanoma, respectively. The most common origin of skin metastasis is breast carcinoma.

KEYWORDS: Skin cancer, Iraq, Metastasis

INTRODUCTION:

Nonmelanoma skin cancer and malignant melanoma represent the most common of all tumors affecting the skin.[1,1] Basal cell carcinoma (BCC) accounts for 75% of these malignancies and the remaining 25% are squamous cell carcinoma (SCCs). [1] BCC is the most common type of skin cancer in lighter skin individuals, in contrast, BCC is the second most common skin tumor in Black individuals[1,1]. The predisposing factors for nonmelanoma skin cancer include ultraviolet exposure, immunosuppression, cutaneous viral infections, carcinogenic chemicals, ionizing radiation and phototherapy[1].

* Baghdad Medical City Teaching hospital/ Dermatology Center
** Baghdad Medical City Teaching hospital/ Department of Pathology

PATIENTS AND METHODS:

This study is a retrospective study, conducted in the outpatient clinic in Dermatology Center at Baghdad Teaching Hospital. The data were collected from the histopathology records from the beginning of January 2013 to the end December 2018.

During the entire period of the study, a total number of (2166) biopsies have been done, among them (731) patients had clinically suspected malignant skin tumor, but only (365) biopsies proved by histopathology as malignant skin tumor (all are included in the study) and the remaining (366) biopsies were excluded, because they were nonmalignant. All biopsies were diagnosed at the histopathology Department of the Teaching Laboratories of Medical City in Baghdad and reviewed by

a committee of dermatologists and a pathologist. Age and gender were recorded for every patient included in the study. SPSS version 24 was used for data analysis. The research topic was approved by the supervising scientific council of the Iraqi Board of Dermatology and Venerology-Iraqi Board for Medical Specializations and by the Iraqi Ministry of Health.

RESULTS:

The data collected over 6 years period in total with 42 (11.5%), 76 (20.8%), 67 (18.4%), 70 (19.2%), 58 (15.9%) and 52 (14.2%) patient in the years 2013 to 2018, respectively. (Table-1)

Basal cell carcinoma accounted for 37.3% (n=136). The mean age was 63±13 years and F:M ratio of 1.3:1. Squamous cell carcinoma represented 16.2% (n=59). The mean age was 61±15 years and F:M ratio of 1.1:1. Mycosis fungoid represented 15% (n=55). The mean age for was 47±16 years with 1.6:1 M:F ratio. Kaposi sarcoma accounted for 10.1% (n=37). The mean age 64±15 year. The F:M ratio of 1.7:1. Cutaneous metastasis represented 7.8% (n=29) with mean age of 64±5 years and F:M ratio of 4.8:1. Patients with malignant melanoma were 4.3% (n=16). The mean age was 50±19 years. The F:M ratio of 1.2:1. (Table-2)

Secondary skin involvement recorded as breast cancer 18 patients (mean age 52±1 years) (F:M ratio of 5:1), leukemia cutis 4 patients (mean age 45±22 years) only females, renal carcinoma 3 patients (mean age 38.±1 years), colorectal carcinoma 2 patients (mean age 59±7 years) (only females), gastric carcinoma 1 patient and lung carcinoma 1 patient. (Table-2,3)

Other less commonly recorded skin malignancies accounted all together for 9.3% (n=33) and include dermatofibrosarcoma protuberance (DFSP) with 2.2% (n=8) (mean age 38±17 years), primary cutaneous B-cell lymphoma (pCBCL) was 1.8% (n=6) (mean age 62±10 years), both mammary paget disease (MPD) and extramammary paget disease (EMPD) affecting the skin (all are females), with a frequency of 1.4% (n=5) and 1.1% (n=4) and a mean age of 48±1 and 49.22 years, respectively.

Basosquamous carcinoma accounted for 1.1% (n=4) (mean age 58±14 years), 0.8% (n=3) is NHL (mean age 61±18 years), angiosarcoma cases are 0.6% (n=2) (mean age 35±7 years) and one sebaceous carcinoma case (0.3%). (Table-2,4)

Table-1: Total number and percentage of malignant skin cancer distributed according to the year.

	2013	2014	2015	2016	2017	2018	Total (%)
Female	30	51	32	34	20	18	185 (50.6%)
Male	12	25	35	36	38	34	180 (49.4%)
Total (%)	42 (11.5%)	76 (20.8%)	67 (18.4%)	70 (19.2%)	58 (15.9%)	52 (14.2%)	365 (100%)

Table-2: Distribution of different skin cancer with mean age and gender ratio.

Diagnosis	No. of cases	% n=365	Mean age±SD	Gender		M:F ratio
				Male	Female	
BCC	136	37.3%	63±13	59	77	1:1.3
SCC	59	16.2%	61±15	27	32	1:1.1
MF	55	15%	47±16	34	21	1.6:1
KS	37	10.1%	64±15	17	20	1:1.7
Metastasis	29	7.8%	64±5	5	24	1:4.8
MM	16	4.3%	50±19	7	9	1:1.2
Other	33	9.3%	-	20	13	-
Total	365	100%		169	196	1:1.5

BCC, basal cell carcinoma; *SCC*, squamous cell carcinoma; *MF*, mycosis fungoides; *KS*, kaposi sarcoma; *MM*, malignant melanoma

Table-3: Distribution of skin metastasis with mean age and gender ratio.

Diagnosis	No. of cases	% n=29	Mean age±SD	Gender		M:F ratio
				Male	Female	
Breast	18	62.1%	52±10	3	15	1:5
Leukemia Cutis	4	13.8%	45±22	0	4	-
RCC	3	10.3%	38±1	1	2	1:2
Colorectal	2	6.9%	59±7	0	2	-
Stomach	1	3.4%	49	0	1	-
Lung	1	3.4%	60	1	0	-
Total	29	100%	50±12	5	24	1:4.8

RCC, renal cell carcinoma.

Table-4 Distribution of other skin cancer with mean age and gender ratio

Diagnosis	No. of cases	% n=365	Mean age±SD	Gender		M:F ratio
				Male	Female	
DFSP	8	2.2%	38±17	4	4	1:1
pCBCL	6	1.8%	62±10	3	3	1:1
MPD	5	1.4%	48±10	0	5	-
EMPD	4	1.1%	49±22	0	4	-
Basosquamous carcinoma	4	1.1%	58±14	2	2	1:1
NHL	3	0.8%	61±18	1	2	1:2
Angiosarcoma	2	0.6%	35±7	1	1	1:1
Sebaceous carcinoma	1	0.3%	46	0	1	-
Total	33	9.3%		11	22	

DFSP, dermatofibrosarcoma protuberans; p*CBCL*, primary cutaneous B cell lymphoma; *MPD*, mammary Paget disease; *NHL*, non-Hodgkin lymphoma; *EMPD*, extra mammary Paget disease.

DISCUSSION:

Nonmelanoma Skin cancer and malignant melanoma represent the most common of all tumors affecting the skin[2]. A report from Iraqi cancer registry indicates that skin cancer accounted for 3.64% of the newly diagnosed cancer in year 2016.[1] BCC is the most common type of skin cancer in lighter skin individuals, in contrast, BCC is the second most common skin tumor in Black individuals. [1,1] Malignant melanoma accounts for less than 5% of all skin cancer worldwide[1]. Darkly skinned individuals are less affected by skin cancer primarily due to higher protective epidermal melanin, which filters more UV radiation than the epidermis of Caucasians individual.[1]

Regarding BCC, researches indicate that the overall prevalence of BCC increased by 145 % and the overall prevalence of SCC increased 263% between 1976-1984 and 2000-2010 in Olmsted County. [1] The current study shows that BCC is by far the most common skin tumor, accounted for 37.3%.

Females are affected slightly more than males with F:M ratio of 1.3:1 ratio and with mean age of 63±13 years. A study conducted by Humadi et al in 2012 shows a higher frequency with 52% of cases are BCC and it is the most common type in Iraqi patients, with males affected more than females and a peak incidence in the 6th decade.[1] The frequency of BCC in this study is close to the results reported by Ministry of Health in 2016 which is (39.08%).[7]

SCC represents the second most common tumor of the skin, as presented by a study from Karbala

in 2015 by Al-Janabi.[1] The present study showed a similar trend regarding SCC with a 16.2% frequency and mean age of 61±15 years with 1.1:1 F:M ratio.

Mycosis fungoides is most common type of cutaneous T-cell lymphoma and is third most common cancer in this study with 15%, a mean age of 47±16 years and a M:F ratio of 1.6:1. A study by Sharquie et al 1999 shows a mean age of 50.55 years and a 2:1 M:F ratio.[1] In contrast, the study conducted by Humadi et al in 2012, MF is the fifth most common type of skin cancer and accounts for 2.3%[13]. The mean age and the M:F ratio is close to study conducted by Al-Hamamy et al in 2015, which shows a 1.5:1 M:F ratio and a mean age of 47.5 years.[1]

The present work shows KS with a frequency of 10.1%, a mean age of 64±15 years and more in females with F:M ratio of 1.7:1. A two year study by Sharquie et al in Baghdad shows a younger mean age of 54.3 years and a F:M ratio of 2:1.[1] Compared to the results of the previous work by Humadi et al, KS accounts for 4%.[13] Mufti study among Saudi Patients consulted the university hospital of King AbdulAziz in 2010 recorded only two male cases with KS of all skin cancer.[1]

In Iraq, a previous study by Sharquie et al from 1985 to 2005 of malignant melanoma shows a mean age of 43.72 years and an F:M ratio of 5:1.[1] A study by Humadi et al in 2012 shows that cutaneous melanoma accounts for 5.5% and represents the third of all primary cutaneous tumors[13]. Despite the lower frequency of malignant melanoma in this study (4.3%), it represents the fifth most common skin tumor of all skin cancer. In the present study, the mean age is 50±19 years in both genders and a F:M ratio of 1.2:1, while another case series of malignant melanoma in Baghdad by Sharquie et al in 2015 shows a mean age of 46.8 year and 1:1 M:F ratio[1].

Metastasis to the skin from internal malignancies accounts for 7.8% (n=29) in total in this work. In this study, breast carcinoma is the most common metastatic tumor to the skin 62.1%. A previous study by Mohammad in the Dermatology Center of Baghdad Teaching Hospital shows that breast cancer is the most common secondary skin metastasis followed by malignant melanoma.[1] Hasan study shows that secondary cutaneous breast cancer is the most common malignancy affecting the breast followed by Paget disease and mycosis fungoides.[1] A review of 25 years at a single cancer center shows that breast cancer accounts for 32.7% of all skin metastasis and is followed bronchus and lung carcinoma 13.2%, while colorectal carcinoma represents 4.2%.[1] These results agree with this study regarding breast cancer. Leukemia cutis represents 1.1% of all skin cancer with male predominance. A Korean study shows a similar male predominance.[1] Despite being very rare, metastatic RCC to the skin is the third most common metastatic carcinoma in this study affecting the skin with 10.3%.

The second most common sarcoma after KS is DFSP with a frequency of 2.2%, a mean age of 38±17 years and M:F ratio of 1:1 is recorded in the present study. A case series in Baghdad by Al-Nuaimy shows a similar mean age of 38.55 years.[1] The previous study of Skin Cancer in Baghdad hospitals shows a frequency of 1.4% of all skin cancer, indicating a slight increase in frequency in the present work.[13]

MPD and EMPD accounts for 1.4% and 1.1% (respectively) of all skin cancer in the current study. The previous study of Humadi et al shows only 0.3% of cutaneous Paget disease, a much lower frequency than this work which may indicate an upsurge of cutaneous Paget disease in the last few years[13]. The F:M ratio is 4.5:1 in one series of 55 patients and 1:3 in another series of 197 patients, however, in this study, all reported cases are females.[1]

Basosquamous carcinoma shows a decrease in frequency (1.1%) from other studies of Humadi et al[13] (2.1%) and (2.8%) in Mufti work[18].

Other less common tumors that affect the skin are three cases of NHL, two cases of angiosarcoma and one case of sebaceous carcinoma, which are all rare cutaneous malignancies.

REFERENCES

1. Guy Jr GP, Thomas CC, Thompson T, Watson M, Massetti GM, Richardson LC. Vital signs: melanoma incidence and mortality trends and projections—United States, 1982–2030. Morbidity and mortality weekly report. 2015;64:591.
2. Guy Jr GP, Machlin SR, Ekwueme DU, Yabroff KR. Prevalence and Costs of Skin Cancer Treatment in the US, 2002− 2006 and 2007− 2011. Am. J. Prevent. Med. 2015;48:183-7.
3. Staples MP, Elwood M, Burton RC, Williams JL, Marks R, Giles GG. Non-melanoma skin cancer in Australia: the 2002 national survey and trends since 1985. Med. J. Austral. 2006;184:6-10.
4. Rubin AI, Chen EH, Ratner D. Basal-cell carcinoma. N. Engl. J. Med. 2005;353:2262-9.
5. Gloster Jr HM, Neal K. Skin cancer in skin of color. J. Am. Acad. Dermatol. 2006;55:741-60.
6. Jensen AO, Svaerke C, Farkas D, Pedersen L, Kragballe K, Sørensen HT. Skin cancer risk among solid organ recipients: a nationwide cohort study in Denmark. Acta dermato-venereologica. 2010;90:474-9.
7. Ministry of Health, Iraqi Cancer Board, Results of Iraqi Cancer Registry 2008, Baghdad. 2016.
8. Rubin AI, Chen EH, Ratner D. Basal-cell carcinoma. N. Engl. J. Med. 2005;353:2262-9.
9. Gloster Jr HM, Neal K. Skin cancer in skin of color. J. Am. Acad. Dermatol. 2006;55:741-60.
10. Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, et al. Cancer incidence and mortality worldwide: IARC Cancer Base. GLOBOCAN 2012 v10. 2012;11.
11. Bradford PT. Skin cancer in skin of color. Dermatology nursing/Dermatology Nurses' Association. 2009;21:170.
12. Muzic JG, Schmitt AR, Wright AC, Alniemi DT, Zubair AS, Lourido JM, Seda IM, Weaver AL, Baum CL. Incidence and trends of basal cell carcinoma and cutaneous squamous cell carcinoma: a population-based study in Olmsted County, Minnesota, 2000 to 2010. In Mayo Clinic Proceedings 2017 (92, 6, 890-898). Elsevier.
13. Humadi AF, Kadhim MJ, Al-Rawi JR. Skin Cancers in Baghdad Hospitals. Iraqi J. Comm. Med. 2013; 26:99-102.
14. Al-Janabi AA, Naseer ZH, Hamody TA. Epidemiological study of cancers in Iraq-Karbala from 2008 to 2015. Inter. J. Med. Res. & Health Sci. 2017;6:79-86.
15. Sharquie KE & Naji A. Mycosis Fungoides in Iraqi Patients, a Clinical and Histopathological Study. Yemeni Med J. 2000;1: 32-9.
16. Al-Hamamy HR, Sharquie KE, Noaimi AA, Abdulwahhab WS. MF in Iraqi Patients—Clinical, Histopathological and Immunohistochemical Study. J. Cosmet. Dermatol. Sci. App. 2015;5:116.
17. Al-Waiz M, Sharquie KE, Al-Hamdani GA. An upsurge of new cases of Kaposi's sarcoma in Iraqi patients. Saudi Med J. 2003;24:224-5.
18. Mufti ST. Pattern of skin cancer among Saudi patients who attended King AbdulAziz University Hospital between Jan 2000 and Dec 2010. J. Saudi Soc. Dermatol. & Dermatol. Surg. 2012;16:13-8.
19. Sharquie KE, Al-Meshhadani SA, Al-Nuaimy AA. Acral lentiginous melanoma versus lentigo maligna melanoma among Iraqi patients. Saudi Med J. 2007;28:105-7.
20. Sharquie KE, Noaim AA, Al-Janabi WK. The Status of Malignant Melanoma in Iraqi Patients. Am. J. Dermatol. Venereol. 2014;3:63-7.
21. Mohammad KA. Malignant cutaneous infiltration in patients attending Baghdad Teaching Hospital during a period of twenty one months, a prospective study. A thesis submitted to the degree of fellowship of the Arabic Board of Health Specializations of Dermatology and Venerology. 2017.
22. Hasan HJ. The frequency and clinical features of dermatoses affecting the breast area in female patients attending the Dermatology Department at Baghdad Teaching Hospital, Baghdad. A thesis

submitted to the degree of fellowship of the Arabic Board of Health Specializations of Dermatology and Venerology. 2017.

23. CY, Helm MA, Helm TN, Zeitouni N. Patterns of skin metastases: a review of 25 years' experience at a single cancer center. Inter. J. Dermatol. 2014;53:56-60.

24. Kang YS, Kim HS, Park HJ, Lee JY, Kim HO, Cho BK, Park YM. Clinical characteristics of 75 patients with leukemia cutis. J. Korean Med. Sci. 2013;28:614-9.

25. Al-Nuaimy AA. Dermatofibrosarcoma Protuberans:" Epidemiological and Clinical Study". Iraqi J. Comm. Med. 2008;21:335-8.

26. Chanda JJ. Extramammary Paget's disease: prognosis and relationship to internal malignancy. J. Am. Acad. Dermatol. 1985;13:1009-14.