
Research Article**An Epidemiological review of Skin Cancers in Malwa belt of Punjab India: A 3-year clinicopathological study.****Balvinder Kaur Brar¹, Naveen Sethi², Era Khanna³**^{1, 2, 3} Department of dermatology, G.G.S. Medical College & Hospital, Faridkot, Punjab, India***Corresponding author**

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Abstract: Cutaneous Malignancies can broadly be classified into Malignant Melanoma and Non Melanoma Skin Cancers. Rest of the cutaneous malignancies includes tumors arising from skin appendages like hair follicle, eccrine and apocrine glands, sebaceous glands as well as Cutaneous Lymphomas. Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC), which are both derived from epidermal keratinocytes, are most common human skin cancers. We did a retrospective study of all clinically suspected and histo-pathologically confirmed cases of skin tumors, seen over a period of 3 years (2011 – 2013), at Dermatology department, G.G.S Medical College & Hospital Faridkot after taking ethical approval from institutional ethical committee. All patients presenting in our skin department during the period of study with histologically confirmed skin cancer were enrolled in the study. Out of a total of 52 histologically confirmed skin cancers, Basal cell carcinoma (BCC) was found to be the most common skin cancer, followed by Squamous cell carcinoma. Others include malignant melanomas, and sporadic cases of Mycosis fungoides, Dermato fibrosarcoma protuberans (DFSP) and cutaneous B-cell lymphoma. In India, skin malignancies have been rising in incidence with several atypical presentations. The epidemiology of common skin cancers in India is distinct from global trends and need to be reviewed in detail. The age of distribution, site affected and stage of disease helps in determining the prognostic outlook for patients and planning an effective management.

Keywords: Cutaneous Malignancies, Cutaneous Lymphomas, Basal cell carcinoma

INTRODUCTION

Cutaneous Malignancies are broadly classified into two types: Malignant Melanoma and Non Melanoma Skin Cancers (NMSCs). Other skin cancers include tumors arising from skin appendages like hair follicle, eccrine and apocrine glands, sebaceous glands as well as Cutaneous Lymphomas. NMSCs represent the most common human cancer and these include Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC), which are both derived from epidermal keratinocytes. Their largest incidence is seen in White population. In India, skin cancers constitute about 1-2% of all the diagnosed cancers. NMSCs though common, are rarely associated with metastasis. Due to low mortality rate of NMSCs, these are often under-reported in cancer registries in many countries worldwide, including India. However, their rising incidence and atypical presentations highlight the importance of reviewing their geographic pattern of distribution and their etiopathogenesis. This study aims to review the epidemiological pattern of various skin malignancies in the Malwa belt of Punjab.

MATERIALS AND METHODS

Our study was retrospective study of all clinically suspected and histo-pathologically confirmed cases of skin tumors, seen over a period of 3 years (2011 – 2013), at Dermatology department, G.G.S Medical College & Hospital Faridkot. Ethical approval was taken for the study from institutional ethical committee. All patients who presented to our skin department during the period of study with histopathological examination confirmed skin cancer were enrolled in the study. The detailed history including associated risk factors, physical examination and routine investigations were recorded and diagnosis was confirmed with histopathological examination of skin biopsy.

RESULTS

A total of 52 cases of histologically diagnosed skin malignancies were reported during our study period. Basal cell carcinoma (BCC) was found to be the most common skin cancer in Malwa belt of Punjab, followed by squamous cell cancer of skin (SCC). Malignant melanoma was third most common, followed by sporadic cases of Mycosis fungoides (MF), Dermato

fibrosarcoma protuberans (DFSP) and cutaneous B-cell lymphoma. Majority of skin cancers affected elderly age group, median age affected being about 60 years for NMSCs and melanoma, while DFSP and MF affected middle-age group between 30 – 50 years. Male preponderance was seen except in cases of BCC, which were more common in females than males, male to female ratio being 1:2.5. The gender wise distribution of skin malignancies along with median age of presentation of various skin cancers and their relative frequency is shown in Table 2. Table 1. shows the age of distribution of various skin cancers. BCC accounted for 40 % of all skin cancers in Malwa belt of Punjab, relatively more common in females and affecting elderly age group more than 50 years of age. This was followed by SCC that accounted for 31% cases and affected males three times more commonly as compared to females. Though malignant melanoma is more

common in White population, it was found to be third most common skin cancer in our region, accounting for 17% of all skin cancers reported in our study. Other skin malignancies observed were Mycosis Fungoides, Cutaneous B-cell Lymphoma and DFSP, each of which accounted for 3.8% of cases. Also, specific site predilection for specific skin cancers was observed in our study, such that head and neck region was found to be the most common site affected by BCC as well as SCC. One case of metastatic BCC was also observed, with distant cutaneous metastasis of primary BCC on face to pubic region and groins. Also, we recorded a rare case of BCC involving anogenital region. SCC had predilection for head and neck region, followed by anogenital region and extremities. 2 cases of MF were recorded; both had the primary lesion involving the trunk at their onset. Malignant melanoma occurred more on the extremities and trunk.

Table 1: The relative frequency & age distribution of various skin malignancies

Age (years)	Diagnosis						Total	%
	Malignant Melanoma	BCC	SCC	Dermato fibrosarcoma protuberans	Mycosis Fungoides	Cutaneous B-cell Lymphoma		
21-30	Nil	Nil	Nil	Nil	Nil	Nil	0	0
31-40	Nil	Nil	Nil	1	1	Nil	2	3.8%
41-50	1	3	2	1	Nil	Nil	7	13.5%
51-60	3	9	4	Nil	1	Nil	17	32.7%
61-70	4	5	6	Nil	Nil	1	16	30.8%
>71	1	4	4	Nil	Nil	1	10	19.2%
Total	9	21	16	2	2	2	52	100%

BCC = Basal cell carcinoma, SCC = Squamous cell carcinoma

Table 2: Median age of presentation and M: F ratio of various cancers.

Diagnosis	Median age (Yrs)	M:F ratio	Total	%
Malignant Melanoma	60	2:1	9	17.4
BCC	60	1:2.5	21	40.4
SCC	62	3:1	16	30.8
Dermato fibrosarcoma protuberans	39	2:1	2	3.8
Mycosis Fungoides	44	2:1	2	3.8
Cutaneous B-cell Lymphoma	68	1:1	2	3.8
Total			52	100

BCC = Basal cell carcinoma, SCC = Squamous cell carcinoma

Table 3: Distribution of primary sites involved

Diagnosis	Head & Neck	Upper Limb	Lower Limb	Trunk	Anogenital	Total
Malignant Melanoma	1	4	3	1	0	9
BCC	17	0	1	2	1	21
SCC	7	2	4	0	3	16
Dermato fibrosarcoma protuberans	0	0	1	1	0	2
Mycosis Fungoides	0	0	0	2	0	2
Cutaneous B-cell Lymphoma	0	0	2	0	0	2
Total/ %	25 (48.1)	6 (11.5)	11 (21.2)	6 (11.5)	4 (7.7)	52

BCC = Basal cell carcinoma, SCC = Squamous cell carcinoma

DISCUSSION

Skin cancers have rising incidence worldwide since the last few decades. Overall incidence of cutaneous malignancies is lower in Indian population due to increased melanin content of Indian skin and latter provides protection against ultraviolet radiation, which is the single most important risk factor for melanoma as well as NMSCs. Though exact incidence of skin cancers in India is not known, their overall incidence has increased and NMSCs are encountered more frequently as compared to melanoma. In dark skin, SCC has been reported to be most common skin cancer and various studies from India have reported SCC to be most prevalent skin cancer [1, 2, 3, 4]. However, in this study BCC was seen to be the most common cutaneous malignancy in Malwa belt of Punjab, accounting for 40.4% cases while SCC was second most common, incidence being 30.8%. Up to 80% of all lesions of BCC are found on the head and neck, whereas approximately 15% develop on the shoulders, back or chest [5]. This is in concordance with our study in which about 81% lesions of BCC occurred over head and neck region. Atypical presentation of BCC was also observed involving anogenital region and rare case of metastatic BCC was also reported. There are isolated reports documenting involvement of the lower extremities [6]. The clitoris and the vulva [7], perianal region [8]. Metastatic BCC has a reported incidence of only 0.0028-0.5% [9]. Our study showed higher incidence of BCC in females than males, male to female ratio being 1:2.5. However, BCC is reported to have male preponderance due to greater cumulative exposure to UV light. Another case series reported from India showed unusual female preponderance [10]. Risk of both SCC and BCC increases with increase in age and with cumulative sun exposure, being more so in former [11]. 82.7% cases of SCC in our study developed in more than 50 years old age group. Head and neck was the most affected site accounting for 44% cases of SCC. Direct sun exposure is a major risk factor for SCC [12]. In contrast to White population, non-exposed sites are more frequently affected by SCC in dark skinned population [13]. Other risk factors for development of SCC are chronic scarring, pre-existing dermatological conditions like hypertrophic lichen planus, [14] lichen sclerosus atrophicus [15], disseminated porokeratosis [16]. Malignant melanoma was the third most common skin cancer observed and acral lentiginous type accounted for most cases (5 out of 9 cases). Other types observed were lentigomaligna (1 case) and nodular melanoma (3 cases). Melanoma, though uncommon, accounts for about 75% of skin related mortality [17]. Males were more frequently affected than females in our study. The study by Wanebo *et al.*; showed female preponderance [18] while another study by Sharma *et al.*; reported a higher male preponderance in India [19] Other cases observed were DFSP, mycosis fungoides and cutaneous B-cell

lymphoma. DFSP has high rate of local recurrence [20] and younger age of onset. We observed one case of solitary DFSP over lower limb in 35 yrs old male and another case of multiple DFSP tumors all over the body with distant as well as systemic metastasis in 46 yrs old male. Mycosis fungoides is a rare non-Hodgkin's lymphoma of cutaneous T-lymphocytes, affecting mid to late adulthood. Exact incidence of MF in India is not known but about 1000 new cases of CTCL are definitively diagnosed each year [21]. We observed a case of hypo pigmented MF in 32 yrs male, with primary lesions on trunk and another case of advanced stage MF with tumor-like lesions as well as ulcerated plaques all over body with lymphatic and systemic metastasis in 45 yrs male. Median age at diagnosis is 55-60 years, but MF may occur in children and adolescents as well [22].

CONCLUSION

Skin malignancies have been rising in incidence with several atypical presentations being reported in Indian literature. The epidemiological characteristics of common skin cancers in India are distinct from global trends and need to be reviewed in detail. In Malwa belt of Punjab, BCC was found to be the most common skin cancer followed by SCC. The age of distribution, site affected and stage of disease helps in determining the prognostic outlook for patients and planning an effective management.

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