

INCIDENCE AND RISK FACTORS OF NONMELANOMA SKIN CANCERS IN INDIA: A COMPREHENSIVE STUDY**Dr Gulshant Panesar**

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ABSTRACT

Cutaneous malignancies account for 1%–2% of all the diagnosed cancers in India. Nonmelanoma skin cancers (NMSCs) include basal cell carcinomas (BCC) and squamous cell carcinomas (SCC). Others include melanoma, cutaneous lymphomas, and sarcomas. Exposure to ultraviolet (UV) rays is the most important risk factor associated with skin malignancies, although various other factors are also implicated.

Over last few decades, incidence of skin cancer is increasing. [1] NMSC is the commonest variety of cutaneous skin cancer. BCC accounting for 70% of all malignant cancers of skin, is seen with largest incidence in white population. In India, squamous cell carcinoma was reported to be more common in previous studies but recent studies have reported basal cell carcinoma to be more common. This inverse relationship with degree of pigmentation and incidence may be due to protective effect of eumelanin on ultraviolet light (UVL) – induced damage.

Keywords:

Nonmelanoma Skin Cancer, Ultraviolet Rays, Basal Cell Carcinoma, Squamous Cell Carcinomas

INTRODUCTION

Cutaneous malignancies constitute a significant proportion of all malignancies and there has been an increase in the prevalence of cutaneous malignancies in the past few years.[1] The malignant skin lesions are broadly classified into three groups: basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and malignant melanoma (MM), which account for more than 95% of total skin malignancies.[2] Worldwide BCC accounts for major burden, with occurrence up to 60%–70%; however, it carries a better prognosis as it has low propensity to spread. SCC occurs less frequently accounting for 15%–20% but has higher tendency of spreading.[3] Melanomas are seen in 5%–10% of the cases and carry poor prognosis.[4] Lymphomas, sarcomas, and metastasis from internal malignancies are very rare forms of cutaneous malignancies.[5] About 90% of these malignancies occur in the age group older than 40 years. Occurrence of NMSCs in children can be seen in the setting of genetic diseases such as Xeroderma pigmentosum (XP), etc. Sun exposure (UVB spectrum [290–320 nm]) is the most important causative factor implicated in NMSCs.[6] Other etiological agents include viral infections, radiation therapy, and chemical exposure.[5] Histopathology is extremely valuable in establishing the diagnosis and identification of the histologic subtypes of different cutaneous malignancies.[7] Recently, dermoscopy has emerged as a valuable non-invasive method of diagnosis of cutaneous malignancies. It is especially useful for the early stage of melanoma.[8]

Current scenario in India

Cutaneous malignancies account for 1–2% of all the diagnosed cancers in India. In India, SCC was reported to be the most common with prevalence of 30–60% followed by BCC with prevalence of 15–25% in past studies.[9] In more recent studies BCC (41%) was found to be more prevalent than SCC (30%). [10] This is similar to the study conducted by Lal *et al.* wherein BCC was reported in 54% cases as compared to SCC in 36% cases.[11] (fig 2)

Demography

Maximum number of patients belonged to the age of 60–70 years followed by age group 51–60 years. The youngest patient with malignancy seen was of 18 years, whereas the oldest patient was of 83 years with a mean age of 55.71 ± 3.87 years. Male-to-female ratio seen 1:1.53. Most of the patients were farmers and laborers by

occupation .[10] In another study from Malwa region of Punjab,the age of the patients was 62 ± 14.2 years and ranged from 27 to 92 years and male to female ratio was M: F=0.79:1. BCC showed higher prevalence among women while SCC and MM showed higher prevalence among males . There was significant association between type of skin cancer and gender affected, p-value was <0.05 . Majority of patients were from rural area. Most patients were directly into the profession of agriculture. These patients gave the history of prolonged exposure to outdoors in sunlight. Majority of cases had lesions confined to head and neck area. All cases of BCC and cases of SCC were found in head and neck area. There was statistically significant association between type of cancer and region involved (p-value <0.05).[11]

Risk factors

Prolonged sun exposure was found to be the major risk factor , followed by genetic disorders (Xeroderma Pigmentosum, albinism, multiple familial trichoepithelioma), pre-existing dermatosis (drawstring dermatitis)and systemic malignancies . Apart from these, other factors included post-burn scars or ulcers, i.e. Marjolin's ulcer , previous viral infections i.e HPV , and dysplastic nevi . No obvious predisposing factor could be found in some cases. (Fig 1)

Fig 1 Risk factors for cutaneous malignancy

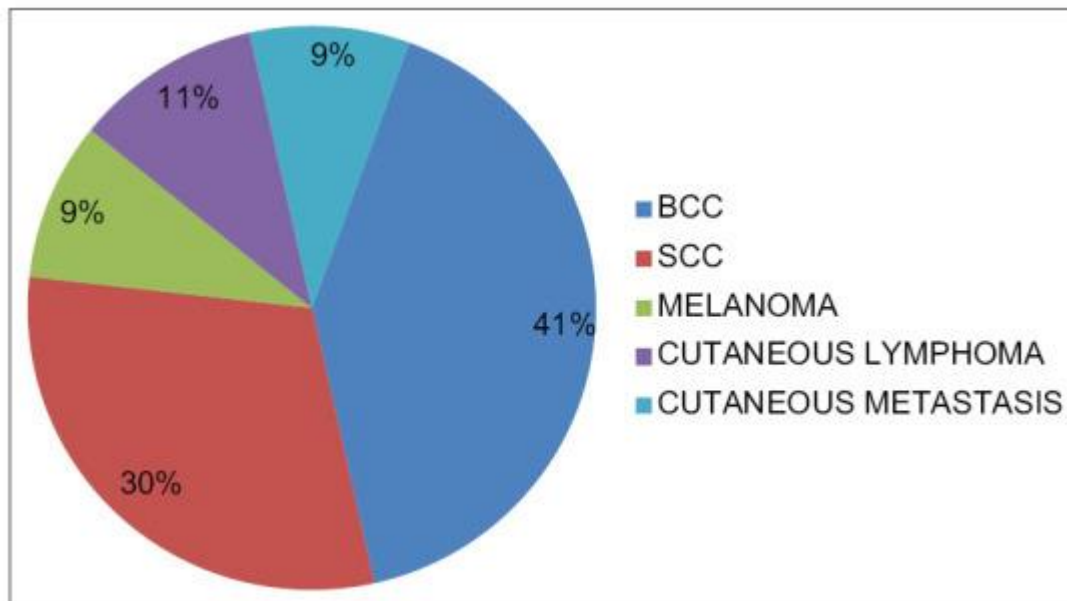
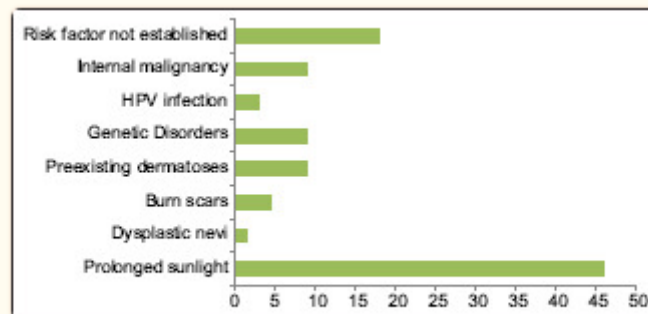


fig 2

Incidence of cutaneous malignancy in India

Histopathology

The most common histopathological variant of BCC observed was nodular type seen followed by ulcerative and pigmented type. Rare histopathological variants of BCC reported were adenoid, basosquamous and fibroepithelial type. Well-differentiated types were common in SCC which correlated with the study of Adinarayan *et al.*[12] The most common histopathological variant of SCC was nodular type . Other types of SCC observed were ulcerative and verrucous. HPV-associated malignancies (SCC) were diagnosed on the presence of koilocytes on histopathology. In melanoma, the most common type was acral lentiginous followed by superficial spreading . Study by Supekar et al reported two cases each of diffuse large B-cell lymphoma, peripheral T-cell lymphoma and anaplastic large cell lymphoma along with a single case of cutaneous T-cell lymphoma. Cutaneous metastasis was seen in three cases of breast carcinomas, single case of cervical, perianal and thyroid carcinoma (papillary type).[11] Cutaneous T-cell lymphomas are more common than B-cell lymphomas as reported in other studies [13] , [14]The most common cause of cutaneous metastasis was breast carcinoma. [13],[14].

Table : Comparison between studies

Characteristic	study 1 [10]	study 2 [11]	study3 [15]	study4 [16]	study5 [13]	study6
[14] s						
MEAN AGE (years)	55.71	62	55.8	54.5	55.2	52.6
MALE: FEMALE RATIO	1:1.51	1:1.27	1.1:1	1.9:1	1:2.27	2.5:1
COMMONEST MALIGNANCY	BCC	BCC	SCC	SCC	N/A	N/A
COMMONEST SITE	Head & Neck	Head & Neck	N/A	Head & Neck	Trunk (Chest)	Trunk (Back)
RISK FACTOR	Prolonged UV exposure	Prolonged UV exposure	Prolonged UV exposure	Prolonged UV exposure	N/A	N/A
COMMONEST HISTOPATHOLOGICAL TYPE/SUBTYPE:						
BCC	Nodular	N/A	N/A	N/A	N/A	N/A
SCC	Nodular	N/A	N/A	N/A	N/A	N/A
MELANOMA	AcralLentiginous	N/A	N/A	N/A	N/A	N/A
CUTANEOUS LYMPHOMA	T-Cell Lymphoma	N/A	N/A	N/A	N/A	T-Cell Lymphoma
CUTANEOUS METASTASIS	Ca Breast	N/A	N/A	N/A	Ca Breast	N/A

Conclusion

All recent studies emphasize NMSCs as the cutaneous malignancies with a female predominance. An increased risk of NMSCs is seen with increased sun exposure especially exposure to Ultra Violet B (UVB) radiation, thus seen more commonly in farmers and agriculturists . Higher levels of arsenic in drinking water has also been reported to be associated with skin cancers in another study . Head and neck are the most common sites . These neoplasms along with other rare malignancies like melanoma, cutaneous lymphomas and cutaneous metastases are often associated with increased morbidity. They require increased efforts to assess risk factors and their prevention in individuals and to encourage periodic self-examination of the skin.

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