



## **Cutaneous Cancers in Irrua, Edo State, Nigeria: A Six Year Review**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author AOO designed the study, performed the statistical analysis and wrote the first draft of the manuscript. Authors EE and IE managed the analyses of the study. Author OC managed the literature searches and retrieval of data. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Introduction:** Cutaneous cancer is one of the leading malignancies in humans [1,2]. It is usually accessible and amenable by surgery [3]. There are different types of skin cancers; these include squamous cell carcinoma, basal cell carcinoma, and malignant melanoma and Kaposi sarcoma [3]. The most common in the Caucasians is the basal cell carcinoma while the reports from the Africans have shown that the squamous cell as the most common among them [2]. Most of the skin cancers rarely metastasized except in few cases: those who presented as advance lesions and Marjolin's ulcers [4]. The skin malignancy can present in any age group but commoner from the sixth decade of life.

**Methodology:** This is a retrospective study of all the patients that presented with histological

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diagnoses of cutaneous cancers into the Irrua Specialist teaching Hospital, Irrua, Edo State Nigeria from September 2010 August 2016. The data were retrieved from the medical records which include the bio-data, the predisposing factor, site of the lesion, histological type. These data were collated and analyzed using the IBM SPSS version 22 (Chicago, Illinois).

**Results:** There were 46 patients with histological diagnoses of cutaneous cancers that presented during the period under review. The ages of the patients range from 19 years to 84 years. The mean age is 44.37 years SD 17.61 (with mean of 39.5 years). 65.22% (30) of the patients were in the third, fourth and fifth decades. There were 26 males and 20 females with male to female ratio of 1.3: 1. Squamous cell carcinoma was the most common histological type (60.9%) and albinism was the most common risk factor in the study (47.8%). The commonest site was head and neck 18 (39.1%) closely followed by lower limbs 16 (34.8%).

**Conclusion:** Squamous cell carcinoma is still the commonest type of skin cancers but albinism was the most common risk factor. This may be due to increase hospital presentation of the albinos. Prevention of skin cancers in albinos will most likely reduce the incidence of skin cancers by almost 50%.

*Keywords: Skin cancers; histological types; risk factors; Nigeria.*

## 1. INTRODUCTION

Skin cancers are one of the commonest cancers worldwide [1]. The incidence has been on the increase in past decades due to increase exposure to ultraviolet radiation. This is due to depletion of the ozone layer which serves as shield for the ultraviolet radiation from the sun [2-4]. Ultraviolet radiation is the single most important risk factor for the development of skin cancers [4]. This is commoner in countries that close to the equator due to above reasons of increase intensity of sunlight and its ultraviolet radiation in these areas. Nigeria is one of these countries, and expected to have its own share of these cancers [5]. The main primary skin cancers include the following squamous cell carcinoma, basal cell carcinoma, malignant melanoma and Kaposi sarcomas [6]. There are secondary skin cancers; which are myriads of them. These are usually secondaries from several cancers in the body that metastasize to the skin. We are focusing on the primary skin cancers in this article. In Caucasians, the basal cell carcinoma is the commonest accounting for about 80% while the squamous cell carcinoma account for about 20% [3]. In Africans, the squamous cell carcinoma is the commonest followed by the basal cell carcinoma in most records though there few where Kaposi sarcoma has been either the most common or the second commonest [3]. There have also been some with significant percentage being melanomas especially in Northern Nigeria [5-7]. Exposure to sunlight has been major risk factor in the whites while chronic ulceration and inflammation and albinism are significant risk factors in Africans. The incidence of the skin cancers increase with age, it is

common from the sixth decades except in albinos where the onset of the cancers is earlier (usually from the second decade). There is higher incidence in males and are more common in people with low socioeconomic status. We looked at our data to compare with previous literature with respect to predisposing factors, and types of cancer [8].

## 2. METHODOLOGY

This is a six year retrospective study of the patient with histological diagnosis of cutaneous cancers that presented to the Irrua Specialist Teaching Hospital, Irrua from September 2010 August 2016. The hospital is the tertiary hospital in a suburban community, serving both the central and the north Senatorial districts of the Edo State and some communities of the neighboring State. It is presently 350-bedded facility. It is strategically located along the Benin-Abuja Expressway, making access very easy. The details of the patients were obtained from the medical records and the histopathology cancer register of the Hospital. The data retrieved include the bio-data, the predisposing factor, site of the lesion, histological type. These data were collated and analyzed using the IBM SPSS version 22 (Chicago, Il.).

## 3. RESULTS

There were forty-six patients with histological diagnosis of skin cancers in the hospital within the period of the study. The histologically diagnosed cancer cases during the period were 1512 patients. Skin cancers actually account for about 3% of the cancer burden in the Hospital.

Albinos account for 46.3% which is close to half of the skin cancer population. The age range from 19 years to 84 years with mean age is 44.37 years SD 17.61 (with median of 39.5 years). The majority (63.6%) were in the third, fourth and fifth decades life. This early onset of the cancers is due to significant number of our patients being albinos. In most of earlier studies the albinos only account for less than 20%. There were 26 (56.5%) males and 20 (43.5%) females with male to female ratio of 1.3: 1. This is similar to the gender distribution reported by Asuquo [3]. Table 1 shows the histological types. 28 (60.9%) of the patients presented with squamous cell carcinoma. This is followed by both basal cell carcinoma and malignant melanoma with seven (15.2%) patients each. There was only one case of Kaposi sarcoma in our series (2.2%).

The three remaining patients had rare skin cancers (one haemangioepithelioma, one eccrine porocarcinoma and one epithelioma). Table 2 shows the risk factors in skin cancers. Albinism was the most common of the risk factors with 47.8% (Figs. 1-3). This was followed by chronic ulceration and inflammation which account for 23.9% (11). 3 (6.9%) patients had previous burn scar that resulted in SCC (Marjolin's Ulcer) in Fig. 4. Table 3 shows the sites of the lesions. The commonest region involved is the head and neck (39.1%) closely followed by the lower limbs (34.8%). The commonest mode of management of these lesions was wide excision and skin grafting (Fig. 5).



Fig. 1. SCC in an albino



Fig. 2. SCC in another albino



Fig. 3. BCC in an albino

Table 1. Histological types of skin cancers

	Pathological diagnosis			
	Frequency	Percent	Valid percent	Cumulative percent
Squamous cell carcinoma	28	60.9	60.9	60.9
Basal cell carcinoma	7	15.2	15.2	76.1
Malignant melanoma	7	15.2	15.2	91.3
Kaposi sarcoma	1	2.2	2.2	93.5
Others	3	6.5	6.5	100.0
Total	46	100.0	100.0	

Table 2. Predisposing factors

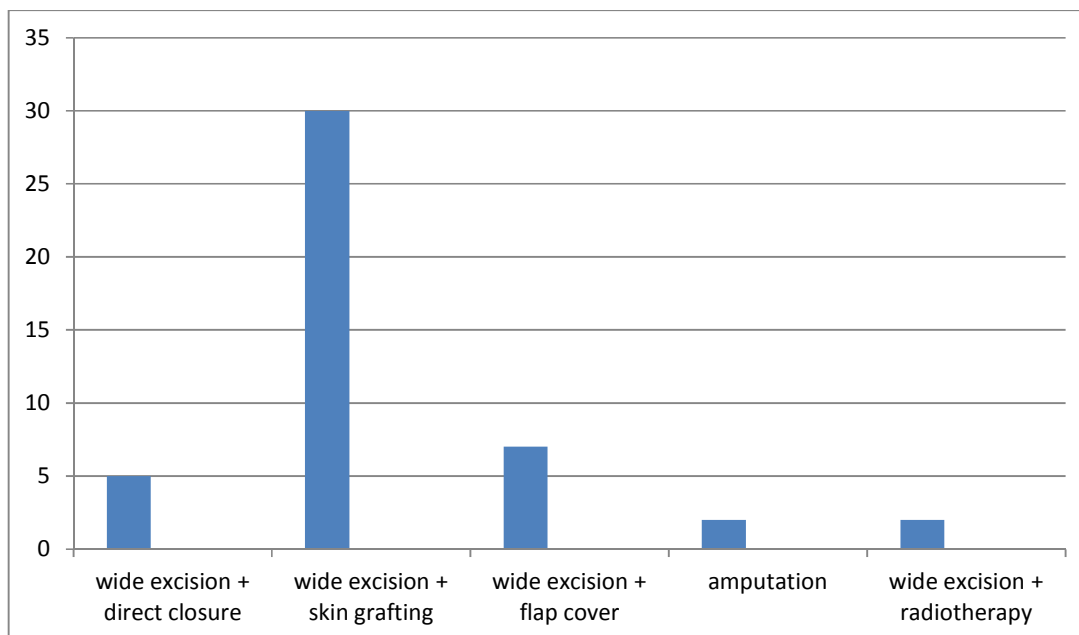
	Predisposing factor			
	Frequency	Percent	Valid percent	Cumulative percent
Burns	3	6.5	6.5	6.5
Albinism	22	47.8	47.8	54.3
Chronic leg ulcers	11	23.9	23.9	78.3
Others	10	21.7	21.7	100.0
Total	46	100.0	100.0	

**Table 3. Site of the lesion**

	Site of the lesion			
	Frequency	Percent	Valid percent	Cumulative percent
Not indicated	2	4.3	4.3	4.3
Head and neck	18	39.1	39.1	43.5
Anterior trunk	2	4.3	4.3	47.8
Posterior trunk	6	13.0	13.0	60.9
Upper limb	2	4.3	4.3	65.2
Lower limb	16	34.8	34.8	100.0
Total	46	100.0	100.0	



**Fig. 4. Marjolin ulcer in postburn scar**



**Fig. 5. The frequency of mode of treatment**

#### 4. DISCUSSION

Cutaneous cancers are one of the commonest malignancies worldwide and seem to be increasing in incidence may be due to depletion of the ozone layer in global warming. Ultraviolet

radiation is the single most important risk factors in the development of cutaneous cancers. Cutaneous cancers were reported to be highest among the Caucasians in the Queensland, Australia due to closeness to the equator [1-4]. The ozone layer is very significant in filtering the

harmful effects of the ultraviolet radiation (UV), mainly that of UVB and UVC. The development of skin cancer also depends on the type of skin, the UV index and the duration of exposure. The modal age group in most of the previous reports is in the fifth and the sixth decades of life [3-7]. Though studies based on albinos have modal age that is lower than this especially from the third and fourth decades. The age of onset among the albinos is usually about 20 years earlier than the rest of the population [8]. However, in this study the mean age is earlier than other reports from Nigeria. This is most likely due to higher percentage of the patients being albinos.

There is still more males than female in hospital presentation. In our study the male to female ratio is 1.3 to 1. This is similar to the sex distribution other studies [3-9]. The structure of the community in the part of the world is in such that decisions are made by the males. They are usually the breadwinners of the family and the treatment of their sickness may take priority over that of the female counterparts. This may be the reason for hospital presentation of the males.

Basal cell carcinoma is the most common of the skin cancers in the North America and Europe. It usually present in the sun-exposed areas of the body [1-3]. In African, especially in the blacks, squamous cell carcinoma is the commonest type of the skin cancers. This has been explained to be due to the type of skin, the higher UV index and higher incidence of chronic ulceration and inflammation resulting in cancers [7-9]. This study also has squamous cell carcinoma (SCC) as the most common type, 28 (60.9%) of the patients had SCC. 48.7% of the patients were albinos, 68.2% of these albinos had SCC. A study from the Indian Subcontinent has a similar finding, in which squamous cell carcinoma is the commonest tumour [10].

Kaposi sarcoma is a vascular lesion of low grade malignant potential that present most of the time as a skin lesion. There are 2 (two) main types – a) the low grade indolent type and b) the aggressive high grade type which usually seen in HIV/AIDS patients. There has been steady increase in Kaposi sarcoma since HIV pandemic. There was only one case of Kaposi sarcoma in this study which is at variance to those from other centres in Nigeria [3-6]. Almost all other studies are actually from the major hospitals in urban centres but our study from the rural and

sub-urban Nigeria. The incidence of HIV induce Kaposi sarcoma may not be as common because the incidence of HIV/AIDS may not be as high in this areas compared to the urban centres. In fact the study from Calabar, Nigeria has Kaposi sarcoma as the most common type of skin cancers [3]. Amazingly the study from Osogbo, Nigeria has malignant melanoma as the most common skin cancer [9].

Albinism is the single most important risk factor identified in our study which is in contrast to most of the other studies from other places in Nigeria and Africa as a whole [3-9]. This finding is similar to the study from India subcontinent [10]. About half of the patients' populations were albinos, which indicate that there is higher hospital presentation among them in this environment. The incidence of skin cancers in albinos is very high, and almost all albinos will present to the hospital with skin lesions during their lifetime in this part of the world because of high UV index compared to the temperate regions. These skin cancers are preventable to reasonable extent in these subjects, so increase awareness among the community will reduce significantly the cancers and almost eliminate them.

The site of these cancers were usually more on the head and neck, which the sun-exposed areas like the forehead, ears, cheek, lips and the scalp [3-5]. These form the commonest sites among the Caucasians but in Africans, there have been some studies where the lower limbs have been the most common site of skin cancers [7-9]. This is based on the higher incidence of chronic ulceration and inflammation as the main risk factor to the development of the skin cancers. This study has head and neck as the most common site, in 18 (39.1%) patients closely followed by the lower limbs in 16 (34.8%) patients. The head and neck has the highest percentage in this study because greater proportions of the patients were albinos. Most of the lesions on the albinos were on the head and neck. The lower limb skin cancers were secondary to chronic leg ulcers and burns.

Most of the patients had wide excision of the lesions except those who had involvement of the underlying bone necessitating amputation of the limbs. Those on the scalp with the involvement of the underlying skull had excision and radiotherapy. The patients, who had wide excision, had soft tissue cover either as direct closure, skin grafting or flap cover.

Most of the lesions were very florid and locally advanced, because of late presentation of these patients. Many of the patients were not aware of the treatment for their problem until very late. Ignorance is a significant factor in late presentation. Poverty and non-availability of health insurance for these patients also contribute to late presentation [3-6].

## 5. CONCLUSION

A significant portion of cutaneous cancers have been known to be preventable worldwide and early skin cancers are amenable to cure in most cases. Squamous cell carcinoma is the most common type of cutaneous in this study, with albinism and chronic leg ulcers the main predisposing factors. Therefore, there is need for increase in mass mobilization and information for the community especially with regards to albinism. Government has to incorporate the rural dwellers in the new health insurance scheme, so that access to medical care will significantly improve. The present out-of-pocket payment for medical care has been identified worldwide, to be an inefficient way to provide health care for the populace.

## CONSENT

All authors declare that informed consents were obtained from the patients for publication of accompanying images in this paper.

## ETHICAL APPROVAL

As per international standard or university standard, ethical approval has been collected and preserved by the authors.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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