

# Changing Epidemiology of Skin Cancers in Southwestern Nigeria

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## Summary

**Introduction:** The incidence of some skin cancers is on the rise in Caucasians<sup>1</sup>. There is also an observed increase in the diagnosis of Basal Cell Carcinoma in blacks. This study evaluated the Pattern of Skin Cancers in Southwestern Nigeria and compared the trends with what obtained three decades earlier.

**Methods:** A review of 494 cases of skin malignancies recorded at the National cancer registry, Ibadan, Nigeria between January 1981 and December 2000 was carried out. The proportion observed was compared with a similar study carried out thirty years earlier.

**Results:** The commonest lesion recorded was squamous cell carcinoma 40.5%. Malignant Melanoma was 25.1%, Dermatofibrosarcoma Protuberance 9.5%, Kaposi's Sarcoma 8.3% and Basal Cell Carcinoma 6.7%. There was an observed decline in the proportion of Squamous Cell Carcinoma and an increase in the proportion of Basal Cell Carcinoma.

**Conclusion:** There is a change in the incidence of skin cancers in Southwestern Nigeria.

## Introduction

A rising incidence for certain skin cancers like Basal cell carcinoma and Malignant melanoma, has been documented among Caucasians; partly due to increase exposure to solar radiation and increase detection from screening<sup>1</sup>.

The incidence of skin malignancies is higher among Caucasians than the Black race, partly because melanin confers some protection to the later<sup>1,2</sup> from the carcinogenic effect of solar radiation.

This study is a retrospective review of cancer registry data over a 20-year period. It aims to evaluate the current trend, against the background of a series from this center (University College Hospital), by Oluwasanmi et al over 3 decades ago, to identify changes in the trend and possibly adduce reasons for any differences observed.

## Materials and Methods

Data on reported skin malignancies, covering the period 1981 - 2000 was retrieved from the Ibadan Cancer Registry. The Ibadan cancer registry keeps records of malignancies presenting to the University College Hospital (U.C.H.), Ibadan and other major health facilities within and outside Ibadan.

Information retrieved includes the name, age, sex, year of presentation, diagnosis and site of lesion. Diagnoses which were not histologically confirmed were eliminated from the study. The remaining data was analyzed using SPSS version 10.0. A comparison was made between the proportions observed in this study with that of Oluwasanmi et al. Z - test was used to ascertain statistical significance.

## Results

Between January 1981 and December 2000, five hundred and seventy (570) cases of skin malignancies were recorded in the Ibadan Cancer Registry. Four hundred and ninety four (494) of these were histologically confirmed.

The commonest lesion recorded was squamous cell carcinoma, which accounted for 200 or 40.5% of the cases (Table 1). This was followed by malignant melanoma 124 (25.1%), dermatofibrosarcoma protuberans 47 (9.5%), Kaposi's sarcoma 41 (8.3%) and Basal Cell carcinoma, accounting for 33 (6.7%), of the cases. Other histological types included adenocarcinoma, undifferentiated carcinoma mucoepidermoid carcinoma, basosquamous carcinoma, ad-

Table 1. FREQUENCY OF SKIN MALIGNANCY

DIAGNOSIS	NO	%
Squamous Cell Carcinoma	200	40.5
Malignant Melanoma	124	25.1
Dermatofibrosarcoma	47	9.5
Kaposi sarcoma	41	8.3
Basal Cell Carcinoma	33	6.7
Adenocarcinoma	26	5.3
Carcinoma, undifferentiated	10	2
Mucoepidermoid Carcinoma	7	1.4
Basosquamous Carcinoma	3	0.6
Adenoid cystic carcinoma	1	0.2
Fibrosarcoma	1	0.2
Mycosis Fungoides	1	0.2
Total	494	100%

Table 2

Age (years)	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	UK	TOTAL	%
Squamous Cell carcinoma	2	5	26	30	43	33	22	11	4	22	2	200	40.6
Basal Cell Carcinoma	1	1	5	5	7	6	4	1	-	3		33	6.6
Adenocarcinoma	-	-	1	4	6	7	5	1	-	2		26	5.3
Undifferentiated Carcinoma	-	-	1	1	4	-	3	-	-	1		10	2.0
Mucoepidermoid CA	-	-	1	1	1	1	1	2	-	-		7	1.5
Basosquamous CA	-	-	-	1	1	-	-	-	1	-		3	0.6
Adenoid Cystic CA	-	-	-	-	1	-	-	-	-	-		1	0.2
Malignant Melanoma	2	3	4	11	33	30	17	11	3	10		124	25.1
Dermatofibrosarcoma	7	5	11	9	5	5	-	-	3	1	1	47	9.5
Kaposi sarcoma	1	8	8	12	3	3	1	-	5	-		41	8.3
Fibrosarcoma		1										1	0.2
Mycosis fungoides				1								1	0.2
Total	13	23	57	75	104	85	53	26	16	39	3	494	100.0

enoid cystic carcinoma, fibrosarcoma and mycosis fungoides. (Table 1).

Skin malignancies were commonest in the 5<sup>th</sup> decade, with 118(24%) occurring in this age range (Table 2). Only 5(1.1%) occurred in the first decade, indicating rarity in the first decade. The age range was 3-99 years, while mean age was 51 years. The overall male to female ratio was 1:5:1, showing male preponderance (Table 3).

Three sarcomas were recorded in this series (Table 2), dermatofibrosarcoma being the commonest, followed closely by kaposi's sarcoma. Only one case of fibrosarcoma was recorded.

Squamous cell carcinoma (SCC) occurred most commonly in the 5<sup>th</sup> decade (Table 2).

Malignant melanoma had its peak age incidence in the 5<sup>th</sup> decade. Majority of the tumours were on the lower limbs, which accounts for 62 or 50% of the cases.

Basal cell carcinoma was also commonest in the 5<sup>th</sup> decade. Majority of the

Table 3. SEX DISTRIBUTION

Diagnosis	Male	Female
Squamous Cell Carcinoma	118	82
Malignant Melanoma	72	52
Dermatofibrosarcoma	25	22
Kaposi's sarcoma	31	10
Basal Cell Carcinoma	21	12
Adenocarcinoma	15	11
Carcinoma undifferentiated	4	6
Mucoepidermoid Carcinoma	6	1
Basosquamous carcinoma	1	2
Adenoid cystic carcinoma	1	
Fibrosarcoma		1
Mycosis fungoides	1	
Total	295	199

Table 4 COMPARISON OF THE PROPORTION OF FOUR OF THE FIVE LEADING SKIN MALIGNANCIES, BETWEEN TWO SERIES FROM U.C.H., IBADAN

	Oluwasanmi et al		Present series	
	No	%	No	%
Squamous cell carcinoma	292	67.2	200	50.2
Malignant Melanoma	106	24.3	124	31.2
Basal cell carcinoma	21	4.8	33	8.3
Kaposi sarcoma	15	3.4	41	10.3
Total	434	100	398	100

Data from Oluwasanmi et al, Reproduced by kind permission of NATURE PUBLISHING GROUP, from Superficial Cancer in Nigeria.

Brit. J. Cancer xxiii: 714-728, 1969

lesions were located on the head and neck, representing 15 or 45.5% of the cases.

Dermatofibrosarcoma was commonest in the 4<sup>th</sup> decade, with most of the lesions (42 or 89.4%) occurring in the 2<sup>nd</sup> to 7<sup>th</sup> decades. The age range was 9-99 years, with mean age 41 years. The lesion occurred most commonly on the trunk.

Kaposi's sarcoma occurred most commonly in the 5<sup>th</sup> decade, Majority of the lesions were on the lower limbs which represented 18 or 44%.

## Discussion

This review showed that squamous cell carcinoma is the commonest skin malignancy in Ibadan and it agrees with the findings of Oluwasanmi et al (1969)<sup>3</sup>, Adeyi et al (1998)<sup>4</sup> AND Mandong et al (2001)<sup>5</sup>. A review of Tanzanian (East Africa) cancer registry data by Amir H et al (1992)<sup>6</sup> also reported squamous cell carcinoma as the commonest superficial malignancy accounting for 59.35% of superficial reviewed. This is however different from the findings in Caucasians Lear et al (1997)<sup>7</sup>.

Analysis of above subset for this series (Table 4) showed a proportion of 50.2% for SCC which is lower than the 67.2% documented by Oluwasanmi et al. This decline is statistically significant ( $z = 5.044$ ;  $p > 0.05$ ). The subset proportion of 8.3% for BCC in this series is higher than the 4.8% documented by Oluwasanmi et al<sup>5</sup> (1968). This increase in the observed proportion of BCC over the past three decades is statistically significant ( $z = 2.035$ ;  $p > 0.05$ ). Basal cell carcinoma is apparently not as rare in black Africans as was previously thought. The finding of this series and clinical experience supports this.

The reason for the above noted changes in proportions for SCC and BCC over the past three decades is not readily apparent. Exposure to solar ultraviolet (UV) radiation is a recognized major aetiological factor for developing skin malignancies. Franceschi et al (1996)<sup>8</sup> noted that site distribution can be an important source of aetiological clue in skin cancer It will therefore seem

that solar UV radiation plays a more prominent role in the aetiology of BCC than SCC in Nigeria, a black African population. The depletion of the protective atmospheric ozone layer and increasing outdoor activities in our society may partly explain the increase in the proportion of BCC seen in the study.

The higher proportion of Kaposi's sarcoma (8.3%) in this series, when compared with the Oluwasanmi's series may be due to the higher incidence of HIV infection at this time.

## Conclusion

Though squamous cell carcinoma is still the leading cause of skin malignancy in Ibadan, there is a statistically significant decline in its proportion and a statistically significant increase in the proportion of basal cell carcinoma, compared to proportions documented three decades earlier. This change is likely due to subtle differences in aetiology, which requires further investigation, as this information will impact preventive measures.

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