

The Non-Melanoma Skin Cancers, A hospital-based Study; The Irrua Specialist Teaching Hospital Experience.

*Owobu CI, *Azeke AT, *Ideiyenmin V, *Owolabi DO, **Eitokpah A, ***Imasogie DE.

*Department of Anatomic Pathology, Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria. **Department of Internal Medicine, University of Benin Teaching Hospital, Benin City, Edo State, Nigeria. ***Department of Anatomic and Forensic Pathology, University of Benin Teaching Hospital, Benin City, Nigeria

Abstract:

Introduction: Squamous cell carcinoma (SCC), and Basal cell carcinoma (BCC) are collectively referred to as Non-Melanoma Skin Cancers (NMSC). They have a high morbidity rate with a low mortality rate. These may impact negatively on the burden of the health sector, hence data on these tumors are invaluable in research and planning. The aim of this study therefore is to determine the prevalence, age, and sex distribution of NMSC at the Irrua Specialist Teaching Hospital, (ISTH), Irrua, Edo State.

Methods: This was a retrospective study of all cases of NMSCs histologically diagnosed over a 9-year period at the Department of Anatomic Pathology, ISTH. Data was obtained from surgical pathology register, histology request form and archived tissue blocks. Data analysis was done using IBM SPSS version 23.

Results: The NMSCs were the most common (77%) malignant skin tumors. Their ages ranged from 20 to 77 years. The SCC doubles as the most common skin tumor (70.37%) and NMSC (90.48%) in this study. The SCC showed a slight male predilection while the limited cases of BCCs were only seen in females.

Conclusion: The base line data for NMSC in this environment has been elucidated, and it is our expectation that it serves a basis for comparison to other studies in future, and also aid in planning in relation to its burden at ISTH. Key Words: estimated Glomerular Filtration Rate, Occult Renal Disease, Serum Creatinine

INTRODUCTION:

Corresponding Author: Azeke AT.
Department of Anatomic Pathology, Irrua
Specialist Teaching Hospital, Irrua, Edo
State, Nigeria. Email:
akhator2001@yahoo.com

Malignant melanoma, squamous cell carcinoma (SCC), and basal cell carcinoma (BCC) are common primary malignant skin tumours.^{1, 2} BCC and SCC together are referred to as non-melanoma skin cancers (NMSC).³ The frequency of NMSC, is significantly higher than that of other skin cancers.⁴

According to reports, the age-standardized incidence rate of non-melanoma skin cancer in Nigeria was 1.7/100,000.⁵ Brazil was found to have the highest age-standardized incidence rate in Central and South America, with 137 cases per 100,000 people.⁶ In Costa Rica, Ecuador, Peru, Chile, and Argentina, the corresponding age-standardized incidence rates per 100,000 people were 28.5/29.6, 22.7/23.4, 13.5/13.9, 11.7/0.8, and 9.5/12.9.⁶ Columbia had the lowest rate of 0/100,000. Turkey has Asia's highest age-standardized incidence rate, 13.7/11.9/100,000, according to data.⁶ In Thailand, the Philippines, Japan, Kuwait, and China, the age-standardized incidence

rates per 100,000 people are 2/2, 1.6/1.5, 1.0/0.9, 0.8/0.8, and 0.7/0.8 respectively.⁶ India was found to have the lowest incidence rate, with 0.2/0.3/100,000 people.⁶

On average, NMSC mortality rates are roughly 0.1% of their incidence rates, which is a low rate.^{7,8} Because of this, the NMSC (BCC and SCC) has a high morbidity rate, which adds significantly to the health sector's expenses.⁸ It is anticipated that the information gathered from this study will be useful for documentation, research, and eventually regional and national planning. Finding out the prevalence, age, and sex distribution of NMSC at the Irrua Specialist Teaching Hospital, Irrua (ISTH), Edo State is the goal of this study.

MATERIALS AND METHOD: A descriptive retrospective study whose subjects were all cases of NMSC (BCC and SCC) diagnosed histologically between January 1st 2011 and December 31st 2019 in the Department of Anatomic Pathology, ISTH.

The surgical pathology records, histology request cards, duplicate copies of histology reports, archived paraffin embedded tissue blocks in the departmental archives, and stained slides with haematoxylin and eosin were the sources of information used in this investigation. Information on each patient's age, sex, type of specimen, hospital number, histology laboratory number, clinical presentation, and clinical diagnosis could be found through the surgical pathology register, histology request form and duplicate copies of the histology report.

The histology slides were obtained, examined under a light microscope, and the diagnosis was entered on a data spread sheet next to the name of the patient. In situations where slides were lacking or of significantly reduced quality, freshly prepared sections were created from

paraffin-embedded tissue blocks that were taken from the Department of Anatomic Pathology, ISTH archives. The sections were then stained with haematoxylin and eosin.

The IBM Statistical Package for Social Sciences, version 23, was utilised to examine the data acquired from this investigation. The analysis of the frequency and corresponding rates in percentages for categorical factors (sex and histologic diagnosis of BCC and SCC) and the age range, mean age, standard deviation, interquartile range and peak ages for continuous variables (age) was done. All instances of incomplete demographic information, missing slides and blocks from the departmental archives met the exclusion criteria. The authors for this study were from Irrua Specialist Teaching Hospital, and the University of Benin Teaching Hospital.

RESULTS:

Twenty-seven (27) malignant skin lesions were observed during the study's review period, 77% (21 cases) of the total, were NMSC. Their ages ranged from 20 to 77 years, with an interquartile range of 40 years. The median age was 40 years while the modal age was 38 years.

The male to female ratio was 1.1:1. The fourth decade represented the study population's peak age and it accounted for 38% of cases as seen in Table 1. The peak ages in males and females of the study population is as shown in table 1.

In this study, SCC's were 19 cases and this represented 70.37% and 90.48% of malignant skin tumours and NMSC respectively. Of these, 52.4% (11 cases) occurred in males while 47.6% (8 cases) occurred in females as shown in table 2. This gave a male to female ratio of 1.38:1. With an age range of 20 to 77 years and a peak in the fourth decade, the mean age

for SCC was 42.00 years (SD = 13.12). Table 2 illustrates the observation of a peak age in the 4th decade in males and 5th decades in females. Figure 1 displays a photomicrograph of squamous cell carcinoma.

Two NMSC cases were due to basal cell carcinoma (BCC), which made up 7.41 percent of malignant skin tumours and 9.52 percent of NMSC, respectively. Table 2 shows that these 2 cases involved women. The median age was 41 years. Figure 2 displays a basal cell carcinoma photomicrograph.

Table 1 showing the Age group and sex distribution of the study population

Age Group	Sex		Total
	Male	Female	
20-29	2	0	2
30-39	5	3	8
40-49	1	4	5
50-59	2	1	3
60-69	0	1	1
70-79	1	1	2
Total	11	10	21

Table 2 showing the Age group and sex distribution of the study population

Age Group	Squamous cell carcinoma		Basal cell carcinoma		Total
	Male	Female	Male	Female	
20-29	2	0	0	0	2
30-39	5	2	0	1	8
40-49	1	4	0	0	5
50-59	2	1	0	0	3
60-69	0	1	0	0	1
70-79	1	0	0	1	2
Total	11	8	0	2	21

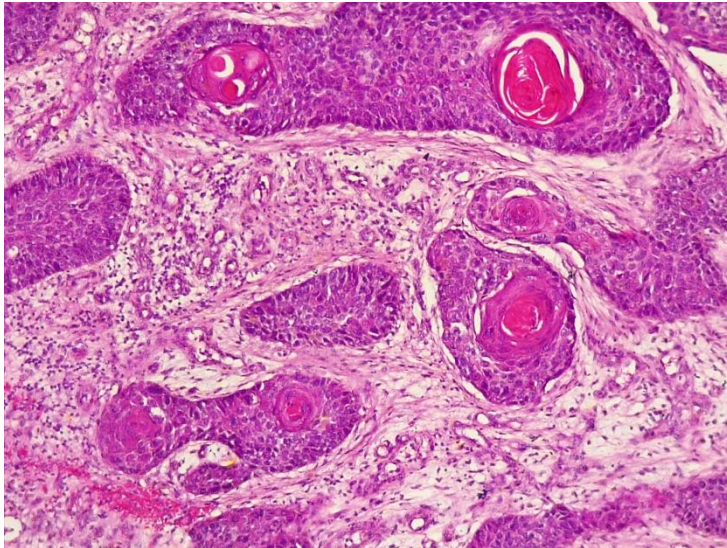


Figure 1: Squamous cell carcinoma, showing clusters of atypical epithelial cells forming keratin pearls. H and E stain. X 100 magnification.

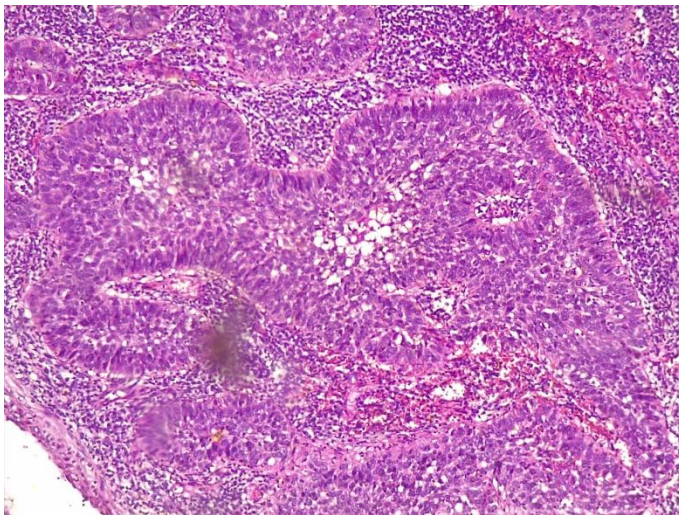


Figure 2: Basal cell carcinoma, showing nest of malignant basaloid epithelial cells with peripheral palisading. H and E stain. X 100 magnification.

DISCUSSION:

The NMSC (SCC and BCC) in this study accounted for approximately 4/5th (77.0%) of malignant skin tumours in this study. This is way higher than the findings of a previous study from Benin by Imasogie and Olu Eddo.³ They reported that NMSC accounted for approximately 2/5th (36.90%) of malignant skin tumours in their study. Despite this, Squamous cell carcinoma accounted for a disproportionately high percentage of NMSC in comparison with BCC i.e. 90.48 % of SCC against 9.52% of BCC. This finding is comparatively similar to the findings of Imasogie and Olu-Eddo in Benin who also reported that SCC far outnumber BCC in frequency and corresponding percentages i.e. 82.6% of SCC as against 17.4% of SCC.³ This study noted a slight male predilection of NMSC, a wide age range and a median age in the 5th decade, these are findings that are in agreement with a previous study from Benin.³

In this study, squamous cell carcinoma (SCC) accounted for 70.37% of malignant skin tumours. This is above the value of the upper limit of the reference range (13.6 to 51.3 percent) of malignant skin tumours reported from previous studies in Nigeria.^{3, 9-14} The reason for this wide disparity is not readily discernable. This study noted a slight male preponderance in agreement with reports of previous studies in Caucasians and Nigerians.^{9, 10, 15-17}

This study noted a peak in the incidence of SCC in the 4 decade which is consistent with the findings of previous studies that were carried out in Nigeria.^{9, 10, 18-20} These studies have shown that SCC was most common in the 4 -6 decades.^{9, 10, 18-20} These findings are contrary to what obtains in Caucasians where it has been documented that SCC is most common from the 7 decade.^{8, 21}

In this study, basal cell carcinoma (BCC) accounted for 7.41 % of malignant skin tumours. This is consistent with the tumour being more common in the Southern part of Nigeria and comparatively similar to the findings of studies done in Ibadan (6.7%), Benin City (9.1%, 9.6% and 10%) and Lagos (10 %).^{9-11, 13, 14} This is in contrary to the 22% reported by Datubo-Brown in Port Harcourt.¹⁶ This may be attributed to a much relatively shorter study duration of 3 years when compared to a relatively longer duration in this study and also in studies with comparative values.^{9-11, 13, 14} Contrary to our findings in this study, previous reports from studies done in Northern Nigeria had documented a lower frequency (2-4%) of BCC.^{14, 18, 19} Australia has been reported to have the highest incidence of BCC worldwide with age the tumour in Caucasians with an outdoor occupation that exposes their skin to UV radiation from the sun is higher than those in Blacks, hence the reason for this disparity.^{15, 22} The skin of Blacks is protected from UV radiation by the presence of melanin pigments in the epidermal layer of the skin.⁸ A multicentre population based study in determining the age standardized incidence rates of BCC in Nigeria had been advocated in a previous study from Benin.³ This we believe we add to the existing knowledge of this lesion on a national scale and allow for planning, research and ultimately planned patients care. The sex predilection in this study was in favour of the females, contrary to previous studies in the Saudis, Indians, Caucasians, and Nigerians which showed a male predilection.^{1, 13, 15, 17, 23}

Conclusion

From the foregoing, the NMSC constitute a significant portion (77%) of malignant skin cancers in our own environment. The magnitude of SCC (90.48%) was by far higher than that of BCC (9.52%). These tumours collectively had a wide age range (20–77 years) and a mean age in the 5th decade (40-49 years). There was no significant sexual predilection in the study population, and those with SCC on the one hand while on the other hand a female predilection was noted for BCC).

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