



Libyan International Medical University
Faculty of Basic Medical Science



Skin Cancer in Albinos' Patients

Khadeejah Abdalsalam Ahmad

Supervised by: Dr.Ibtisam Gziri

Assisted by: Lujien Shakmak

Report Submitted To Fulfill the Scientific Research Activity

Date of Submission 27\2\2020

Abstract

Skin cancer among Africans is rare, and albinism in this population is a known risk of skin cancer. There are two main types of albinism which are ocular albinism and oculocutaneous albinism. Ultraviolet radiation at the equator is highest, and African albinos living near the equator are at greatest risk of developing skin cancer.

In this report, the data are collected from the 2 published articles.

The first study recorded of albinos administered into Imo State University Hospital from June 2007 to May 2009 were reviewed. The data obtained were analyzed using descriptive statistics.

Second research is a retrospective review of all albinos with histological diagnosis of skin malignancies reported to Irrua Specialist Teaching Hospital, Irrua Edo State, Nigeria between September 2010 and August 2016. The following details were extracted from the patient case-notes.

The result of most of the patients was under 55 years of age, the average duration of symptoms at diagnosis was approximately 26 months and squamous cell carcinoma was the most common histological type.

Introduction

Albinism is an inheritable disorder that affects the melanin production due to the absence or defect in tyrosinase enzyme which converts tyrosine to dioxyphenylalanine (the precursor of melanin).¹ Mutations in tyrosinase (TYR) gene (11q14-q21), resulting in impaired tyrosinase activity, are by far the most common and affect up to 50% of cases worldwide.³ This leads to the absence or reduction in melanin produced in the melanocytes which affect the skin, eyes, and hair.

There are two main types of albinism, i.e., oculocutaneous (OCA) type and ocular albinism (OA). The OCA is an inherited melanin biosynthesis autosomal recessive disorder that results in total or partial loss of melanin in the body, hair follicles, and ears and it has seven subtypes (OCA 1–7) while the OA without skin involvement shows X-linked inheritance, is much rarer and is characterized by reduced pigmentation of the retina and iris.⁴

Melanin is a photo protective pigment, which protects the skin from the harmful effects of ultraviolet radiation.

The deficiency in people with albinism predisposes them to the harmful effects of exposure to ultraviolet radiation, leading to problems such as photophobia, decreased visual acuity, severe sun resistance and skin cancers. High levels of exposure to ultraviolet radiation increase the risk of all the three major forms of skin cancer and they are responsible for the anatomical site distribution. Lack of using protection to the skin increases risk of skin cancer in these patients.²

Actinic keratosis progressing to squamous cell carcinoma (SCC) is the most frequently reported skin cancer in albinos. The risk for basal cell carcinomas (BCC) is also higher in these individuals as compared to the general population. Among all the skin cancers reported in the albino population, malignant melanomas (MM) are extremely rare.³ OCA predisposes to SCCS of the skin, particularly of the sun-exposed head and neck. SCCS is more frequent, runs a more aggressive course, and tends to have a higher rate of recurrence in black albinos than in normally pigmented people. Moreover, in Black albinos, SCCS of the head and neck is more prevalent than basal cell carcinoma, and cutaneous melanoma of the head and neck is rare.⁵

The study aimed to determine the pattern of skin cancers seen in Albinos.

Material and methods

First study Records of patients with Albinism at the Imo State University Teaching Hospital for skin cancers from June 2007 to May 2009 were reviewed.

The data were extracted on age, sex, occupation, symptom duration, lesion distribution, treatment offered, and treatment completion rate.⁶

Second study: it's a retrospective study of all the albinos with histological diagnoses of cutaneous malignancies which presented to the Irrua Specialist Teaching Hospital, Irrua Edo State, Nigeria, from September 2010 to August 2016. The details of the 22 patients were obtained from the Medical Records Department of the Hospital were extracted from the patients' case-notes, operation register, and the histopathology register. These data include age, gender, occupation, site, and duration of the lesion.¹

Results

They constitute 47.8% of all the cutaneous malignancies diagnosed during the same period in the hospital. The ages ranged from 25 to 55 years (mean 34 years). The majority of the patients are in the third and fourth decade of life. The male to female ratio is equal. There were 11 (50%) males and 11 (50%) females. {Table 1} shows the type distribution of the cutaneous malignancies, the most common of these malignancies were squamous cell carcinoma (68.2%) followed by basal cell carcinoma (22.7%). In {Table 2} the head and neck was the most common site for malignancies in albinos accounting for 63.6%.¹

Table 1

Histological diagnosis of the lesions

	FREQUENCY	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
SQUAMOUS CELL CARCINOMA	15(68.2)	68.2	68.2
BASAL CELL CARCINOMA	5(22.7)	22.7	90.9
MALIGNANT MELANOMA	2 (9.1)	9.1	100.0
TOTAL	22(100.0)	100.0	

Table 2

Sites of the lesions

VALID	FREQUENCY	VALID PERCENTAGE	CUMULATIVE PERCENTAGE
HEAD AND NECK	14 (63.6)	63.6	63.6
UPPER TRUNK	5 (22.7)	22.7	86.4
UPPER LIMB	2 (9.1)	9.1	95.5
LOWER TRUNK	1 (4.5)	4.5	100.0
TOTAL	22 (100.0)	100.0	

Discussion

There was a high incidence of cutaneous cancers in albinos which account for about 50% of the whole cutaneous cancers burden in hospitals within the period of review this is very high, compared to about 2.5% reported by Yakubu and Mabogunje⁷. While 18.4% reported in Calabar, Southern Nigeria, and 16.7% was reported in Port Harcourt, Nigeria. The high incidence may probably be due to small sample size or due to increase awareness of treatment among the albinos and their caregivers.¹

In albinos, the non-melanotic skin cancers are generally commoner in the middle-aged and elderly. The review of 1000 Nigerian albinos, Okoro AN found less than the age of 20 to be free of solar-induced premalignant or malignant skin lesions.⁶ A similar finding was also reported by OluwafemiOlasupo Awe and TerenceAkhaton Azeke in their review of 22 albinos in sub-urban Nigeria.¹ In this study, the peak age of patients with advanced skin cancers (greater than 4 cm in diameter) was the 4th decade of life and 61% of our patients were in the 3rd to 4th decades of life.⁶

Previous studies documented a male preponderance with male to female ratio almost approaching two, but we found equal incidence just as the study by OluwafemiOlasupo Awe and TerenceAkhaton Azeke.¹

The most frequent cancer in these patients was squamous cell carcinoma which accounts for 68.3%, it is consistent with previous report⁶, and this is followed by basal cell carcinoma and then the rare MM. In this series, there were 5 cases (22.7%) of basal cell carcinomas and 2 cases (9.1%) of MM¹. The cutaneous cancers in albinos were usually found in the head and neck of the body because they are usually exposed to sunlight and hence, ultraviolet radiation^{1, 6}. About 63.6% (14) of the patient in this study had their lesions on the head and neck region only¹.

Conclusion

Squamous cell carcinoma of the head and neck region are the most frequently diagnosed cancers among albinos in our environment. When albinism exposure to ultraviolet light appears to be the most important risk factor in the development of skin cancers.

References

1. Awe O, Azeke T. Cutaneous Cancers in Nigerian Albinos: A Review of 22 Cases. *Nigerian Journal of Surgery*. 2018;24(1):34. doi:10.4103/njs.njs_23_17.
2. Darlington, D., Puthanmadhom Narayanan, S., & Anitha, F. (2018). Synchronous Triple Malignancies in an Indian Albino: A Case Report. *Cureus*. doi: 10.7759/cureus.3190
3. Kubasch, A., & Meurer, M. (2017). Okulokutaner und okulärer Albinismus. *Der Hautarzt*, 68(11), 867-875. doi: 10.1007/s00105-017-4061-x
4. Mabula, J., Chalya, P., Mchembe, M., Jaka, H., Giiti, G., & Rambau, P. et al. (2012). Skin cancers among Albinos at a University teaching hospital in Northwestern Tanzania: a retrospective review of 64 cases. *BMC Dermatology*, 12(1). doi: 10.1186/1471-5945-12-5
5. Lekalakala, P., Khammissa, R., Kramer, B., Ayo-Yusuf, O., Lemmer, J., & Feller, L. (2015). Oculocutaneous Albinism and Squamous Cell Carcinoma of the Skin of the Head and Neck in Sub-Saharan Africa. *Journal Of Skin Cancer*, 2015, 1-6. doi: 10.1155/2015/167847
6. Opara, K., & Jiburum, B. (2010). Skin cancers in albinos in a teaching Hospital in eastern Nigeria - presentation and challenges of care. *World Journal Of Surgical Oncology*, 8(1). doi: 10.1186/1477-7819-8-73
7. Yakubu, A., & Mabogunje, O. (1995). Skin Cancer in Zaria, Nigeria. *Tropical Doctor*, 25(1_suppl), 63-67. doi: 10.1177/00494755950250s120