



ORIGINAL RESEARCH ARTICLE

## Characterization of the elderly with a possible diagnosis of skin cancer

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**Abstract:** **Introduction:** In Cuba, the study of skin cancer in the elderly is one of the social demands. **Objective:** To describe the clinical epidemiological characteristics of patients with a possible diagnosis of SC in the nursing homes “Caridad Jaca” and “San José” in Guantánamo City in 2017. **Method:** An observational, prospective, and cross-sectional study was conducted in all the elders (n = 256), and to those elders with possible skin cancer (n = 15); the age, sex, place of birth, address, personal medical history, photos of skin types, lesion characteristics, clinical and dermoscopic diagnosis were specified. **Results:** 5.9% of the elders were diagnosed with skin cancer. It was more common in men (53.4%), people aged from 70 to 79 (53.4%), and people born or lived in urban areas with skin phototype III (40.0%), 100.0% of which are exposed to sunlight, and 86.7% without sun block. Cancers were more frequently found in the face (66.7%) less than 1 cm in size (46.6%), which have progressed 3 to 4 years (60.0%), and were single lesions (86, 7%) and basal cell carcinomas (46.6%). 80.0% of all the cases showed a clinical-dermoscopic diagnosis correlation. **Conclusions:** The incidence of skin cancer in the elderly was low. However, more attention is needed to ensure the diagnosis of this disease at its early stage.

**Keywords:** skin cancer; basal cell carcinoma, squamous cell carcinoma

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### Introduction

Aging causes progressive and irreversible morphological and physiological changes in the body and increases the risk of various skin diseases, including skin cancer (SC)<sup>[1-3]</sup>, which according to the World Health Organization<sup>[4]</sup>, represents one in every three cases of cancer in the world and the treatment costs more than three billion dollars. Therefore, it is recognized as a health problem, especially in the elderly, people with fair skin and those with a tanning culture<sup>[5,6]</sup>.

In Cuba, SC is the biggest cause of death from cancer in 2017<sup>[7]</sup>. The mortality rate was  $111.2 \times 100,000$  in women and  $133.1 \times 100,000$  in men. The most susceptible people were elderly women and elderly men with rates of  $418.4 \times 100,000$  and  $294.7 \times 100,000$  respectively<sup>[7]</sup>. In Guantánamo, no document is found that reveals the morbidity and mortality of SC, which offers social relevance to the study of patients at a risk of SC.

Several Cuban authors have studied SC<sup>[8,9]</sup>, but there is no study in Guantánamo describing elderly patients with skin cancer. Consistent with this

uncertainty, this study aims to describe the characteristics of patients with a probable diagnosis of SC in the “Caridad Jaca” and “San José” nursing homes in Guantánamo during 2017 from the aspects of clinical epidemiology.

## Method

An observational, prospective, cross-sectional study was performed, and it was approved by the Ethics Committee of the aforementioned nursing homes. Informed consent for inclusion in the study was required from each patient or their representatives. The study includes the total number of the elderly admitted to the aforementioned nursing homes during 2017 ( $n = 256$ ).

The clinical diagnosis of SC was based on the criteria established in the scientific literature<sup>[10,11]</sup> and the results of skin examination using the clinical method and dermatoscopy.

Each patient’s age, sex, birthplace, address,

pathological history of precancerous lesion and skin neoplasia, skin phototype, history of sun exposure and use of sun protection means were specified. Throughout the research, we analyzed the anatomical location, area and time of evolution of the tumor, number and character of the tumor lesion, clinical and dermatoscopic diagnosis.

Theoretical methods (analysis and synthesis, induction and deduction, systematization), empirical methods (documentary study, observation) and mathematical-statistical methods (absolute frequency, percentage calculation) were applied.

## Results

**Table 1** shows that the age of the patients was  $86.0 \pm 8.0$ , and men were older. The largest proportion of them were born (66.7%) and lived in urban areas (80.0%). Only 40.0% were reported with precancerous or neoplastic lesion of the skin and the most common one was carcinoma (20.0%).

**Table 1.** Elderly patients with probable diagnosis of skin cancer according to age, sex, place of birth, where they lived, history of precancerous lesions or skin neoplasm

Variable	Results	
	No.	%
Female sex	7	46.6
Male sex	8	53.4
Female sex (age years, $X \pm SD$ )	$84.7 \pm 10.6$	-
Male sex (age years, $X \pm SD$ )	$87.1 \pm 4.5$	-
Group of patients (age years, $X \pm SD$ )	$86.0 \pm 8.0$	-
From rural area	5	33.3
From urban area	10	66.7
Women from rural area	2	13.3
Women from urban area	5	33.3
Men from rural area	3	20.0
Men from urban area	5	33.3
Life performance in rural area	3	20.0
Life performance in urban area	12	80.0
Women/life performance in rural area	1	14.3
Women/life performance in urban area	6	85.7
Men/life performance in rural area	2	25.0
Men/life performance in urban area	6	75.0
With medical history	6	40.0
Without medical history	9	60.0

**Table 1.** (continued)

Variable	Results	
	No.	%
Medical history: carcinoma	3	20.0
Medical history: actinic keratosis	2	13.3
Medical history: other not specified	1	6.7

The highest percentage of patients had skin phototype III (40.0%) (Table 2). Phototype II was more common in women (71.4%) and phototype III in men (62.5%). A total of 100.0% were reported to

have been exposed to sunlight at some time in their lives, and 46.6% occasionally and 53.4% for work-related reasons. The majority (86.7%) were reported not having used any type of sun protection means.

**Table 2.** Elderly patients with probable diagnosis of skin cancer according to sex, skin phototype, personal history of sun exposure and use of sun protection means

Indicator	Sex				Total	
	Female		Male		No.	%
	No.	%	No.	%		
Skin phototype I	1	6.7	2	13.3	3	20.0
Skin phototype II	5	33.3	-	-	5	33.3
Skin phototype III	-	-	6	40.0	6	40.0
Skin phototype IV	1	6.7	-	-	1	6.7
Skin phototype V	-	-	-	-	-	-
Occasional sun exposure	4	26.7	3	20.0	7	46.6
Occupational sun exposure	3	20.0	5	33.3	8	53.4
Use of photoprotection	1	6.7	1	6.7	2	13.3
No Use of photo protection	6	40	7	46.6	13	86.7

Skin lesions in the face were more common (66.7%), and were not larger than one centimeter (46.6%) with three to four years of evolution (60.0%) (Table 3). The largest proportion of the elderly had

single or isolated skin tumors (86.7%), and basal cell carcinoma was the most common clinical form of skin cancer according to dermoscopic diagnosis (46.6%).

**Table 3.** Elderly patients with probable diagnosis of skin cancer according to the position, demension, time of evolution, number and type of skin lesions

Indicators of skin lesion		Sex				Total	
		Female		Male		No.	%
		No.	%	No.	%		
Localization	Scalp	1	6.7	-	-	1	6.7
	Face	3	20.0	7	46.6	10	66.7
	Chest	2	13.3	1	6.7	3	20.0
	Extremities	1	6.7	-	-	1	6.7
Dimension	Less than 1 cm	3	20.0	4	26.7	7	46.6
	Less than 2 cm	2	13.3	4	26.7	6	40
	From 2 to 5 cm	2	13.3	-	-	2	13.3
Time evolution	1–2 years	1	6.7	1	6.7	2	13.3
	3–4 years	5	33.3	4	26.7	9	60
	5–10 years	1	6.7	3	20.0	4	26.7
Number	More than one injury	1	6.7	1	6.7	2	13.3
	Single injury	6	13.4	7	46.7	13	86.7

**Table 3.** (continued)

Indicators of skin lesion		Sex				Total	
		Female		Male			
		No.	%	No.	%	No.	%
Clinical diagnosis (carcinoma)	Basal cell carcinoma	3	20.0	4	26.8	7	46.6
	Pigmented basal cell carcinoma	2	13.4	1	6.6	3	20.0
	Nodular basal cell carcinoma	1	6.6	1	6.6	2	13.4
	Basal cellular ulcerated nodule	1	6.6	-	-	1	6.6
	Epidermoid	-	-	2	13.4	2	13.4

**Table 4.** Patients according to the accuracy of clinical diagnosis-dermatoscopic diagnosis correlation

Variable	Result			
Clinical diagnosis-dermatoscopic diagnosis correlation	Yes: n = 12, 80.0%. No: n = 3, 20.0%.			
Clinical diagnosis (carcinoma)	Dermatoscopic diagnosis			
	Yes		No	
	No.	%	No.	%
Basal cell	10	66.6	3	20.0
Epidermoid	2	13.4	-	-
Total	12	80.0	3	20.0

**Table 4** shows that 80.0% of the patients achieved the clinical diagnosis-dermatoscopic diagnosis correlation.

## Discussion

At present, interest in the study of SC is growing due to the increase of its incidence, the underdiagnosis and the deficient education of the population for its timely recognition around the world. This cancer is the most diagnosed cancer in Cuba<sup>[7]</sup> and its incidence will probably increase due to the extension of life expectancy and the influence of climate changes.

In this research, 5.9% of the elderly people may be diagnosed with SC. The rate is low, but this does not detract from the social significance of the efforts been made, since the study of skin cancer in the population is a social requirement, and it is declared as a work objective of the Ministry of Public Health of Cuba<sup>[12]</sup>.

Similar studies are rarely seen in scientific literature, although in general it is stated that the

incidence of SC oscillate between 5% and 10% of the population<sup>[13,14]</sup>.

It was pointed out that SC is more common in those over 60 years old<sup>[15,16]</sup>, perhaps due to the cumulative effect of exposure to ultraviolet radiation. It was also stated that it is more common in men<sup>[16,17]</sup>, possibly because they were more exposed to these radiations. These arguments supported the results of this study. However, the distribution pattern showed a tendency to equalize due to recreational photoexposure and the use of ultraviolet light booths, which were currently more frequented by women<sup>[16,18]</sup>.

In this study, SC was more frequent in those who were born and lived in urban areas, and a history of SC was not common, which is contrary to the majority of studies<sup>[16-18]</sup>. These results are considered casual; the second data could show an insufficient control of the patient's comorbidity and a lack of realization of the risk of this type of cancer. The fact that the highest percentage the skin lesions were evolutionized between three to four years and

have an demension between 1 to 2 cm supports the idea that the patients did not have an obvious SC risk.

It was more common for patients with SC to have Fitzpatrick skin phototypes II and III, a result similar to those of other researchers<sup>[11]</sup> who state that people with Fitzpatrick skin phototypes I, II and III show a higher risk because they are less protected against ultraviolet radiation.

SC was more common on the face in the patients studied, and the results of studies by the investigators vary widely.

In this study, basal cell carcinoma was the most common SC according to dermoscopic diagnosis, which coincides with the opinions of other researchers<sup>[16,17]</sup>. This is the most common cancer, accounting for 25% of all tumors and 75% of all non-melanoma SCs<sup>[17,18]</sup>.

Regarding the clinical diagnosis-dermoscopic diagnosis correlation, it is noricable that the result is comparable to the reports of other researchers<sup>[17,18]</sup>, although it is required to continue the work to achieve this correlation in the cases of 100.0%.

The following limitations are recognized in implementing the study: patients in the two nursing homes were studied; it is possible to transfer the data to the incidence rate of SC in the Guantánamo population; the correlation between clinical diagnosis and anatomopathological diagnosis is not considered; dermoscopic diagnosis-anatomopathological diagnosis; nor the triangulation between clinical diagnosis, dermoscopic diagnosis and anatomopathological diagnosis was taken into account.

The results of this study lead to the revelation of the need for SC screening in elder people, as it was noted that the skin lesions were not just appear recently, which may be indicative of inadequacies in the process of early diagnosis, and that patients are not prepared to perceive the risk of this type of cancer and seek medical help, which limits early diagnosis.

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