THE EPIDEMIOLOGY OF SKIN CANCER AT THE NATIONAL HOSPITAL OF DERMATOLOGY AND VENEREOLOGY FROM 2017 - 2021

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SUMMARY

Objectives: To investigate the current situation of skin cancer in the National Hospital of Dermatology and Venereology (NHDV) with an emphasis on epidemiology and time trends over 5-year period from 2017 to 2021.

Subjects and methods: We analyzed medical data of all patients with definitive diagnosis of skin cancer who were hospitalized at the NHDV between January 2017 and December 2021.

Results: A total of 866 patients were identified. There were 579 (66.86%) cases of basal cell carcinoma (BCC), 238 (27.48%) cases of squamous cell carcinoma (SCC), 22 (2.54%) cases of melanoma, and other types of skin cancer occurred in 3.12% (27 cases) of patients. The age group over 60 years old accounted for 60.28% of patients. The mean age of patients with BCC gradually decreased from 65.01 in 2017 to 61.64 in 2021 and the proportion of patients under 60 years old increased statistically significantly over the years ($p < 0.01$). The male/female ratio was 0.97 ($p = 0.715$) and 71.02% of the patients lived in rural areas.

Conclusion: BCC is the most common type of skin cancer. About 60% of skin cancer patients were diagnosed at age ≥ 60 but tend to be younger. Men and women have similar incidence of skin cancer and the majority of patients live in rural areas.

Keywords: *Skin cancer, epidemiology, basal cell carcinoma, squamous cell carcinoma, melanoma.*

1. INTRODUCTION

Skin cancer is a group of heterogeneous malignancies that arise from the epithelial cells of the skin. There are three most common types of skin cancer: BCC, SCC and melanoma.

In the US, the prevalence of a skin cancer is about 5 times higher than that of breast or prostate cancer[1]. The prevalence of skin cancer was estimated to be 2% in Australia and is three times more common than other cancers combined[2]. In Vietnam, according to a research by Le Tran Ngoan in 2006, the mortality rate of skin cancer ranged from 0.2 - 0.4/100.000 people[3].

In recent years, the number of patients coming to NHDV for skin cancer examination and treatment has increased. However, to date, studies on epidemiology of skin cancer and related factors in Vietnam and NHDV are very limited. This study aimed to investigate some epidemiological characteristics of skin cancer patients at the NHDV over 5-year period from 2017 to 2021.

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2. MATERIALS AND METHODS

This was a descriptive cross-sectional study. We analyzed medical data of 866 patients with skin cancer diagnosis confirmed by histopathology who were hospitalized for inpatient treatment at the Department of Plastic and Aesthetic Surgery of NHDV from January 2017 to December 2021.

All statistical analyses were performed using SPSS 20.0

Data entry and analysis were conducted by using SPSS software version 20.0 (IBM, Armonk, NY, USA). The T-test was used to compare quatitative variables. Differences were considered to be statistically significant at $p < 0.05$. The study was approved by the Ethical Review Committee on Research Involving Human Subjects, the National Hospital of Dermatology and Venereology.

3. RESULTS

In total, there were 866 patients included in the study. BCC was the most common type of skin cancer (66.86% of total cases) followed by SCC (27.48%), melanoma (2.54%). Other types of skin cancer accounted for 3.12% (Figure 1). The distribution of different types of skin cancer by year over a 5-year study period was summarized in Table 1 showed an increase in the number of BCC patients during the period from 2017 to 2019 while the number of SCC increased gradually in 2 years 2020 and 2021.

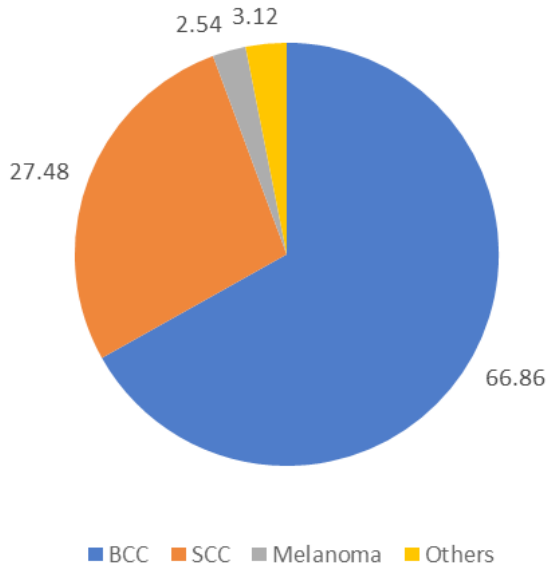

Figure 1. The occurrence of different types of skin cancers in 5 years 2017 - 2021

Table 1. The distribution of different types of skin cancer by year over a 5-year period

Skin cancer types	2017		2018		2019		2020		2021		Total
	n	%	n	%	n	%	n	%	n	%	
BCC	91	52.6	118	65.2	169	75.45	120	73.62	81	64.8	579
SCC	64	36	54	29.83	46	20.54	35	21.47	39	31.2	238
Melanoma	11	6.36	4	2.21	3	1.34	3	1.84	1	0.8	22
Others	7	4.04	5	2.76	6	2.67	5	3.07	4	3.2	27
Total	173	-	181	-	224	-	163	-	125	-	866

The mean age of patients was 62.57 (Figure 2). Skin cancer incidence increased with age. The group of patients aged 60-79 had the highest occurrence, accounting for 49.19% of the total number of skin cancer patients (Table 2). However, figure 3 showed a statistically significant decrease from 65.01 years old in 2017 to 61.64 years old in 2021 with $p < 0.05$ in the mean age of BCC patients. The proportion of age groups under 40 and 40 - 59 years old increased gradually over the years, statistically significant with $p < 0.01$.

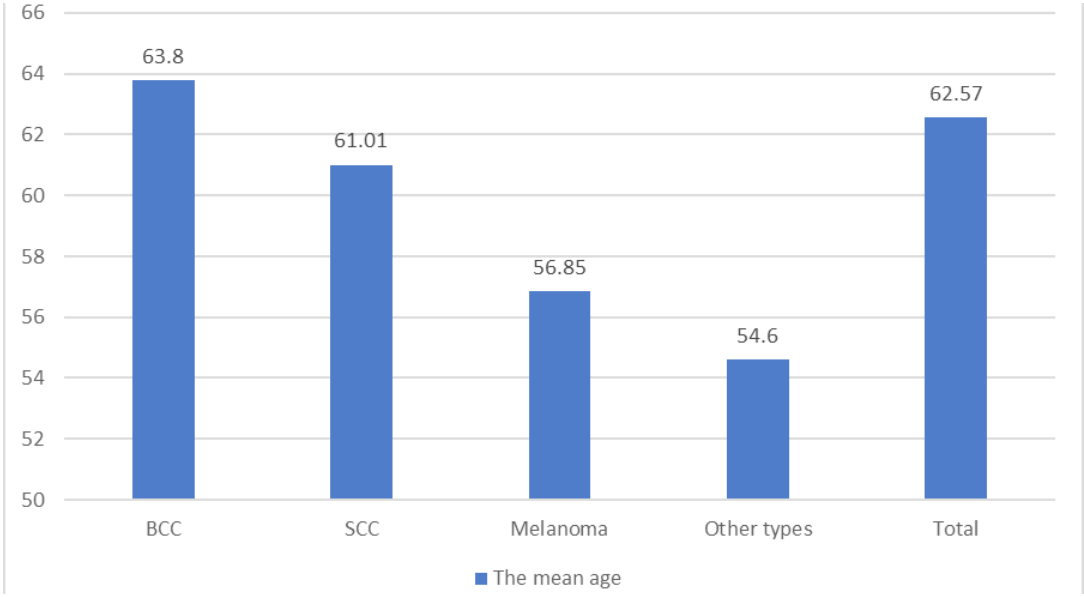

Figure 2. The mean age of skin cancer patients according to their subtypes

Table 2. Occurrence by age of different types of skin cancer in 5 years 2017 - 2021

Skin cancer types	Age groups (%)							
	< 40		40 - 59		60 - 79		≥ 80	
	n	%	n	%	n	%	n	%
BCC	35	6.04	179	30.92	300	51.81	65	11.23
SCC	20	8.4	84	35.29	104	43.7	30	12.61
Melanoma	2	9.09	7	31.82	13	59.09	0	0
Others	8	29.63	9	33.33	9	33.33	1	3.71
Total	65	7.51	279	32.21	426	49.19	96	11.09

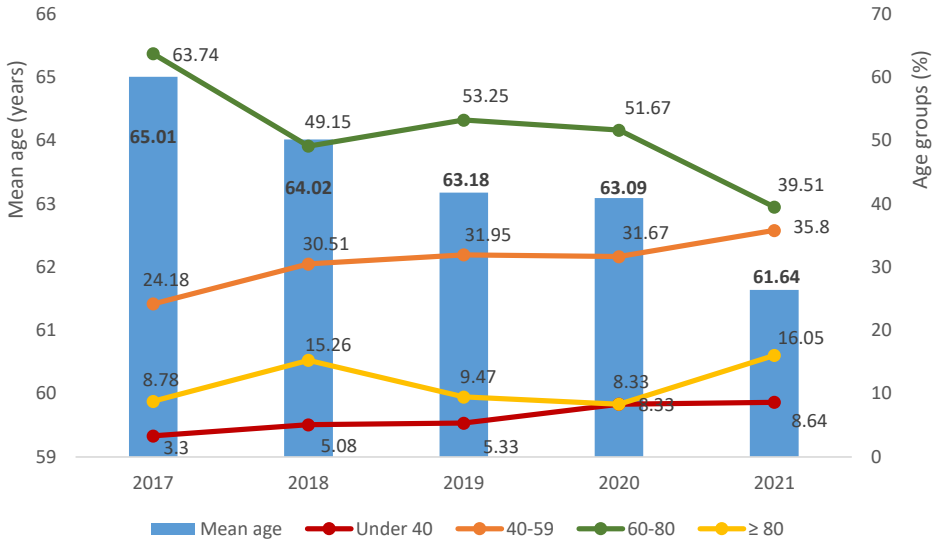

Figure 3. The mean age and the occurrence by age groups of basal cell carcinoma patients over the years

Skin cancer occurrence were similar between men and women (p = 0.715). In which squamous cell cancer was more common in men than in women (66.96% versus 33.61%) while basal cell and melanoma was more common in women than men (p < 0.05) (Figure 4). The majority of skin cancer patients lived in rural areas, accounting for 71% of patients, which was significantly higher than the number of patients living in urban areas (29.98%) with p < 0.001 (Figure 5).

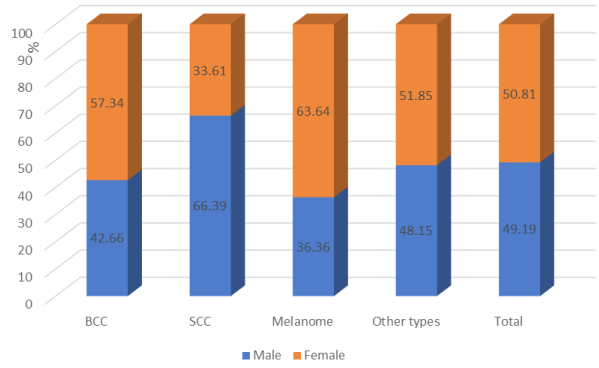

Figure 4. The distribution of different types of skin cancer by sex

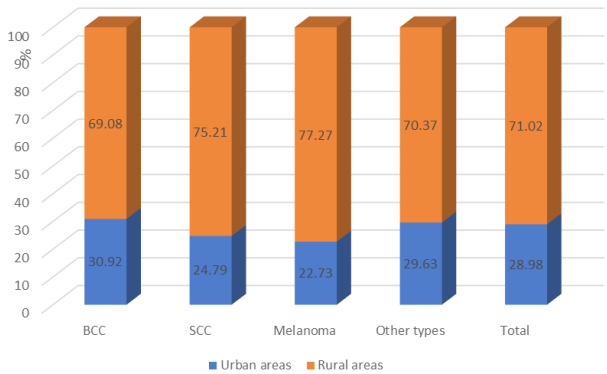

Figure 5. The distribution of different types of skin cancer by geography

4. DISCUSSION

During the 5-year period from 2017 to 2021, 866 patients were diagnosed with skin cancer and hospitalized at NHDV. During the period 2017 - 2019, the number of patients increased year by year, from 173 patients in 2017 to 224 patients in 2019. Strengthening propaganda has raised people's awareness about skin cancer. Patients visit their doctors sooner when detecting suspicious signs. In addition, the National Hospital of Dermatology and Venereology has implemented many methods of treating skin cancer including the Mohs technique, which allows to completely remove the cancer tissue, saves the maximum amount of healthy normal skin and reduces the risk of recurrence. Therefore, many skin cancer patients were referred to our hospital for treatment. However, the number of patients gradually decreased over the next two years, to only 125 patients in 2021. This was due to the emergence and spread of the SARS-CoV-2 epidemic in 2020-2021. Social distancing and travel restriction made it difficult for patients to go to the hospital for examination.

Among included 866 skin cancer patients, basal cell carcinoma was the most common, accounting for 66.86%, followed by squamous cell carcinoma (27.48%) and melanoma (2.54%). Other skin cancer accounted for 3.12% of total included patients. From 2018 to 2019, A.Vila-Payeras et al analyzed 433 cases of skin cancers on Spanish population[4]. In which, BCC was 68.4% that was similar to our study. However, this study has a lower rate of SCC (19.6%) and a higher rate of melanoma (7.4%) when compared to our study. Squamous cell carcinoma and melanoma are types of skin cancers with a higher risk of metastasis than basal cell carcinoma. It should be taken into account that in Vietnam, melanoma patients often go to the doctor when the lesions are severe with metastases. So they are often transferred to other specialized oncology hospitals for further examination and treatment in the late stages.

The mean age of patients with skin cancers in our study was 62.57, most patients were over 60 years of age (60.28%). The age group 60 - 79 years old is the most common, accounting for 49.19% (Table 2). These finding were similar to those of previous studies. Vu Thai Ha at al conducted a study on 856 skin cancer patients in the period 2007 - 2010, among those 44.8% of patients in the age group 60 - 79[5]. Tran Van Tang's study showed this age group accounted for 54.84%[6]. During life, the body is always under the influence of carcinogenesis, causing changes at the molecular level of DNA. These changes are always corrected by the body to ensure the normal development of cells. In older people, the body's ability to repair decreases, mutated cells can grow abnormally and become malignant. This can be explained as the proportion of skin cancer patients is more common in the retirement age.

The group of BCC patients had the mean age gradually decreasing over time from 65.01 in 2017 to 61.64 in 2021, this difference was statistically significant with $p < 0.05$. At the same time, the proportion of age groups under 40 and 40 - 59 years old increased significantly from 3.3% in 2017 to 8.64% in 2021 and 24.18% in 2017 to 35.8% in 2021, respectively ($p < 0.01$). The trend of increasing the incidence of BCC in young patients was also mentioned in a study by Christenson et al analyzing 417 patients younger than 40 years[7]. The incidence of BCC in the young population generally increased from 35 patients in the period 1976 - 1979 to 86 patients in the period 2000 - 2003 ($p < 0.001$). This can be related to the increased awareness of people about skin cancer. Therefore, they visit their doctors sooner when detecting suspicious signs.

The gender distribution in our study showed that skin cancer was equally common in both men and women ($p = 0.715$). In which BCC, melanoma and other skin cancers were more common in women than in men, while SCC was more common in men than women (66.39% versus 33.61%). This result were similar to many previous studies[5,8]. As in Vu Thai Ha's study, the rates of SCC and BCC in men were 70.3% and 44.9%, respectively. Although men tend to be exposed to the sun more often, women are more interested in appearance and skincare, so they often detect unusual signs and symptoms and visit the doctor earlier than men, which may be why basal cell, melanoma, and other skin cancers are higher in women than men.

Regarding the geographical distribution of skin cancer, patients living in rural areas have a higher rate of skin cancer than patients living in urban areas (71.02% and 29.98%, $p < 0.001$). This result was consistent with others studies[5,9]. Vu Thai Ha et al showed 29.9% and 61% patients lived in urban areas and rural areas, respectively. This might be related to occupation as well as education level and economic conditions. Farmers have to be more exposed to sunlight and do not have the habit of using sunscreen or do not know how to use it properly. Therefore the rate of skin cancer is higher.

5. CONCLUSION

Among 866 skin cancer patients in NHDV in 5 years from 2017 - 2021, BCC is the most common, followed by SCC, melanoma and other skin cancers. Most patients were over 60 years of age. The group of patients with BCC tend to be younger with the mean age gradually decreased while the proportion of patients under 40 years old and 40 - 59 years old increased over the years. Skin cancer is generally equally common in men and women, but there were differences in each specific type of skin cancer. Patients living in rural areas had significantly higher rates of skin cancers than patients living in urban areas.

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