

PROFILE AND CHARACTERISTICS OF NON-MELANOMA SKIN CANCER IN THE DERMATOLOGY AND VENEREOLOGY POLYCLINIC OF THE CENTRAL GENERAL HOSPITAL (RSUP) PROF. dr. I G.N.G. NGOERAH DENPASAR PERIOD JANUARY 2020 – DECEMBER 2023

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ABSTRACT

Introduction. Keratinocyte carcinoma (basal cell carcinoma [BCC] and squamous cell carcinoma [SCC]) is the most common skin cancer and its incidence keeps on increasing. Ultraviolet exposure is one of the main risk factors. Lesions are often located in sun-exposed areas and are associated with higher recurrence rates.

Objective. To know the profile and characteristics of non-melanoma skin cancer patient at the Dermatology and Venereology Polyclinic, Prof. dr. I G.N.G. Ngoerah General Hospital in 2020-2023, that may contribute on the epidemiology data of non-melanoma skin cancer in Indonesia. **Method.** The research used a retrospective descriptive method. The sampling technique used total sampling technique. **Results.** The number of subjects was 46 patients, with a male to female ratio of 1:1. The average of subject age was 63.8 ± 12.9 years. The incidence of BCC was more common than SCC, 33 subjects (71.7%) and 13 subjects (28.3%) respectively. The most common location of lesions was on the face (76.1%), followed by the scalp (8.7%). The highest incidence of non-melanoma skin cancer in both genders is BCC. The locations of BCC and SCC were often found in areas with a high risk of recurrence (66.7%, 46.2%). **Conclusion.** The average age of non-melanoma skin cancer patients is over 60 years. The most common non-melanoma skin cancer is BCC. The incidence of BCC is more common in female, while SCC is more common in male. The most common location of non-melanoma skin cancer is on the face and often found in areas with a high risk of recurrence.

Keywords : basal cell carcinoma., non melanoma skin cancer., squamous cell carcinoma

INTRODUCTION

Skin cancer is the most common type of malignancy found worldwide.¹ Non-melanoma skin cancer represents one third of all cancers, consisting of the most common keratinocyte carcinomas including basal cell carcinoma (BCC) and squamous cell carcinoma (SCC).² The incidence of non-melanoma skin cancer continues to increase, BCC increases by 3-10% annually and SCC increases by 50-200% in the last 3 decades.^{3,4} The increase of the incidence of non-melanoma skin cancer is related to increased ultraviolet exposure and individual factors such as increasing age.³⁻⁵ In Indonesia, based on an epidemiological study of the Hospital-Based Cancer Registry (HCBR) data from Cipto Mangunkusumo Hospital (RSCM) in 2008-2012, there were 592 cases of skin cancer (3.25%) of a total of 18,216 cancer cases.⁶ An epidemiological study by Wibawa et al at RSCM in 2014-2017 found 263 cases of skin cancer with a proportion of BCC of 66.9% and SCC as much as 27.4%.⁷ A study by Yogiswara et al in 2014-2018 found 100 cases of non-melanoma skin cancer at Sanglah General Hospital with a proportion of BCC as much as 39% and SCC as much as 61%.⁸

Basal cell carcinoma is the most common cancer in humans.⁹ Risk factors for BCC include old age, male gender, light skin phenotype, and ultraviolet exposure.^{3,9} In general, BCC has a male to female ratio of 1.5-2:1. BCC lesions are usually found in areas exposed to sunlight, with signs of sun-damaged skin around them.⁹ Squamous cell carcinoma is estimated to represent 20% of non-melanoma skin cancer cases.⁴ Risk factors for BCC include ultraviolet exposure according to geographic factors (altitude, location from the equator), old age, male gender, light skin phenotype, genetics, and immunosuppression.^{4,10} BCC has a male-female ratio of 2-5:1.9 BCC lesions generally occur on the face, neck, upper extremities, and shins.⁴ Indonesia is a country with a tropical climate located on the equator. The skin phenotype of Indonesians tends to have a dark skin phenotype, skin type III-V.¹¹ In general, the incidence of non-melanoma skin cancer in dark-skinned individuals is 3.4 per 100,000, with a BCC and SCC ratio of 1.1:1.9. The risk of recurrence of non-melanoma skin cancer increases in the face, genitalia, hands and feet, lesions with unclear boundaries, and larger sizes.^{9,12} Based on

this, the purpose of the study was to determine the profile and characteristics of non-melanoma skin cancer at the Dermatology and Venereology Polyclinic of the Prof. Dr. I G. N. G. Ngoerah Central General Hospital (RSUP), Denpasar in the period January 2020 to December 2023 which includes characteristics of gender, age, and lesion location. The benefits of this study are to give additional epidemiological data related to non-melanoma skin cancer in Indonesia.

RESEARCH METHOD

The study was conducted using a retrospective descriptive method using secondary data from medical records of patients with non-melanoma skin cancer (BCC and SCC) at the Dermatology and Venereology Polyclinic of Prof. Dr. I G. N. G. Ngoerah General Hospital, Denpasar from January 2020 to December 2023. The study was conducted at the Medical Records Installation and Dermatology and Venereology Polyclinic of Prof. Dr. I G. N. G. Ngoerah General Hospital. The sampling technique

used total sampling, which including all new case patients diagnosed with non-melanoma carcinoma at the Dermatology and Venereology Polyclinic of Prof. dr. I G. N. G. Ngoerah Central General Hospital, Denpasar.

RESULTS

There were 46 subjects in this study. The gender of male subjects (23 subjects) was equal to female subjects (23 subjects) with a ratio of 1:1. The average age of subjects was 63.8 ± 12.9 years with the youngest age being 29 years and the oldest age being 89 years. The largest number of patients was in 2022 (18 subjects) and 2023 (16 subjects), namely 34 patients (73.9%). Overall, the number of subjects diagnosed with BCC was greater than SCC, namely 33 subjects (71.7%) and 13 subjects (28.3%) respectively. The location of the most common lesions found was on the face (76.1%), followed by the scalp (8.7%). In detail, the characteristics of the study subjects are described in Table 1.

Table 1. Characteristics of Research Subjects

Variable	Number (n)	Percentage (%)	Mean \pm SD	Min	Max
Gender					
Male	23	50			
Female	23	50			
Age (years)			63,8 \pm 12,9	29	89
Year of visit					
2020	4	8,7			
2021	8	17,4			
2022	18	39,1			
2023	16	34,8			
Non melanoma skin cancer type					
BCC	33	71,7			
SCC	13	28,3			
Location					
Face	35	76,1			
Trunk	3	6,5			
Upper extremities	2	4,35			
Lower extremities	0	0			
Scalp	4	8,7			
Neck	0	0			
Genital	2	4,35			

In 2020, the number of BCC patients was the same as SCC patients. In 2021 and 2022, the number of BCC patients was greater than SCC patients. In 2021, the number of BCC patients was 75% and the percentage increased in 2022 to 94.4%. In 2023, the number of BCC patients returned to being the same as SCC patients, but with a greater number. Based on gender, the highest incidence of non-melanoma skin cancer in male and female subjects was BCC. In male subjects, there were 14 subjects (60.9%) with

BCC and 9 subjects (39.1%) with SCC. In female subjects, there were 20 subjects (87.5%) with BCC and 3 subjects (12.5%) with SCC. A full description of the research results based on the year of visit and gender can be seen in Table 2.

Based on location, non-melanoma skin cancer can occur in areas with high recurrence risk ('mask area' on the face [midface, eyelids, eyebrows, periorbital, nose, lips, chin, mandible, preauricular, postauricular sulcus, ears, and temporalis], genitals,

hands, and feet), intermediate recurrence risk (cheeks, forehead, neck, and scalp), and low recurrence risk (trunk and extremities). The results showed that BCC and SCC were most commonly found in areas with high recurrence risk (66.7%,

46.2%), followed by intermediate recurrence risk (24.2%, 38.2%), and low recurrence risk (9.1%, 15.4%). The complete distribution of non-melanoma skin cancer locations is described in Figure 1.

Table 2. Profile of Non-melanoma Skin Cancer Patients Based on Year of Visit and Gender at the Dermatology and Venereology Polyclinic of Prof. dr. I G. N. G. Ngoerah Central General Hospital, Denpasar

	BCC (N=33)		SCC (N=13)	
	N	%	N	%
Year of visit				
2020	2	50	2	50
2021	6	75	2	25
2022	17	94,4	1	5,6
2023	8	50	8	50
Gender				
Male	13	59,1	10	40,9
Female	20	87	3	13

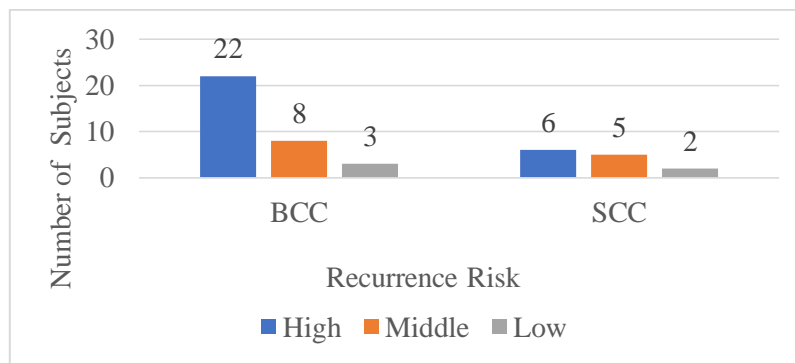


Figure 1. Distribution of Non-melanoma Skin Cancer Locations Based on Recurrence Risk

DISCUSSION

Based on patient data at the Dermatology and Venereology Polyclinic of Prof. Dr. I G. N. G. Ngoerah Central General Hospital in 2020-2023, the number of non-melanoma skin cancer patients was the least in 2020 (4 subjects [8.7%]). The number of non-melanoma skin cancer patients was the most in 2022 (18 subjects [39.1%]). The average age of the subjects was 63.8 ± 12.9 years. Based on gender, the ratio of non-melanoma skin cancer in men and women was 1:1. The BCC ratio in female and male subjects was 1.4:1, while the SCC ratio in male and female subjects was 3:1. The decrease in the number of patients in 2020 could be due to the Coronavirus Disease 2019 (COVID-19) pandemic situation which affected the health system globally, including a decrease in the number of patient visits to dermatology. A global survey study by Bhargava et al found a decrease in the number of face-to-face consultations by 53% during the COVID-19 pandemic.¹³ The average age in this study is in accordance with the results of other studies. A study by Wibawa et al at RSCM found that most BCC and

SCC patients were in the age group over 60 years. Another study in the United States by Lukowiak et al also found that the average age of non-melanoma skin cancer patients was 69.82 ± 12.58 years.¹⁴ In this study, BCC was found more in women. This is different from the general theory, usually a larger ratio of men compared to women is found. Similar results were obtained in a study by Tiyawatanaroj et al in Thailand, found in BCC patients, the ratio of men and women was 0.73: 1 with 71.6% over 60 years of age. The predilection for female gender in BCC can be found in the Asian race.¹⁵ In contrast to BCC, in this study SCC was found more in men. This is in accordance with the general theory and a study by Oh et al in Singapore also found that SCC sufferers were more in men. Men usually have more outdoors activities and usually use less sun protection.¹⁶

Based on data from 2020-2023, BCC cases (71.7%) were found more often than SCC (28.3%). The prevalence of BCC is higher than SCC in all races, including in Asians.¹⁴ In both types of non-melanoma skin cancer, the most common area found

was the face (76.1%) and also the largest proportion was found in areas with a high risk of recurrence (BCC 66.7%, SCC 46.2%). Non-melanoma skin cancer is related to ultraviolet exposure, so lesions are usually found in areas with more sun exposure, such as the face.¹⁷ The high risk of recurrence may also be related to incomplete excision. A study by Chouhan et al found that 7.8% of BCC cases and 6% of SCC cases experienced incomplete excision, as many as 13.3% in the nose area, 15% in the temporalis, and 12.8% in the ear.¹⁸ Incomplete excision can occur due to difficulties due to anatomical contours and efforts to maintain vital anatomical structures.^{18,19} To reduce the risk of recurrence, the management of non-melanoma skin cancer can use the Mohs surgical technique, the use of imaging modalities for preoperative planning, and the use of adjuvant therapy such as radiotherapy.²⁰

CONCLUSIONS

The average age of non-melanoma skin cancer patients is over 60 years old. The most common non-melanoma skin cancer is BCC. BCC is more common in women, while SCC is more common in men. The most common location of non-melanoma skin cancer is on the face and in areas with a high risk of recurrence.

Disclosures

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Conflict of Interest

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

Ethics Approval

Ethical approval for this study was obtained from Komisi Etik Penelitian Fakultas Kedokteran Universitas Udayana (0185/UN14.2.2.VII.14/LT/2024).

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