

Skin cancer patients profile at faculty of medicine university of North Sumatera pathology anatomy laboratory and Haji Adam Malik general hospital in the year of 2012-2015

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Abstract. The most common types of skin cancer found worldwide are basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. In America, about 800,000 people suffer from skin cancer every year and 75% are basal cell carcinoma. According to WHO, around 160,000 people suffer from malignant melanoma every year and 48,000 deaths were reported every year. In Jakarta, in 2000-2009, dr. CiptoMangunkusumo Hospital (RSCM) reported 261 cases of basal cell carcinoma, followed by 69 cases of squamous cell carcinoma and 22 cases of malignant melanoma. This study was descriptive study with retrospective design and consecutive sampling method. Data consisted of age, gender, tumor location, occupation and histopathology subtype which were taken from skin cancer patients' medical record at Faculty of Medicine University of North Sumatera Pathology Anatomy Laboratory and Haji Adam Malik General Hospital Medan in 2012-2015. Data were analyzed using SPSS program and classified based on WHO. From 92 study subjects, squamous cell carcinoma is the most common form of skin cancer which is 59 cases (64.13%), found in 48 women (52.2%), and often found between 45-47 years old (30.4%).

1. Introduction

Nowadays, skin cancer is likely to increase in cases, especially in the America, Australia and UK. According to some studies, white people more likely to suffer skin cancer. It is predicted as a result of frequent exposure (much exposed) to sunlight. In Indonesia, skin cancer patients are less compare to those 3 countries, but skin cancer need to be understood because aside it can cause disability, it can also death.[1]

In America, 800,000 people suffer from skin cancer every year and basal cell carcinoma is mostly found. 200,000 Americans suffer from squamous cell carcinoma. Malignant melanoma is seldom found compared to the other type, but it is causing the most death. According to WHO, 160,000 people suffer from malignant melanoma every year and 48,000 deaths are reported every year.[2]

According to Cancer Registration Agency in 2005 in Indonesia, skin cancer is the 4th (6,21%) of all malignancies based on location in men and women. Based on 13 pathology center in Indonesia in 1989, 39.93% of all skin malignancies is basal cell carcinoma with the most frequent location is neck; 39.57% is squamous cell carcinoma with the most frequent location is head and neck, and 11.44% is malignant melanoma with the most frequent location is head.[2]

In Jakarta, in 2000-2009, Polyclinic of Dermatology and Venerology dr. CiptoMangunkusumo Hospital (RSCM) reported that 261 cases of basal cell carcinoma, followed by 69 cases of squamous



cell carcinoma and 22 cases of malignant melanoma. In contrast of previous data, Dhamais Cancer Hospital (RSKD) reported that nonmelanocytic skin cancer during 2005-2007 was basal cell carcinoma and malignant melanoma. It can be understood because RSKD is one of the referred cancer hospitals, so the cases were referred cases, which had a previous intervention, but failed or recurrent, such as squamous cell carcinoma, melanoma, etc. Basal cell carcinoma is a seldom metastasis skin cancer, so most of the cases can be treated by dermatologist or surgeon.[3]

From this background, the author wants to know how is the skin cancer patients profile at Faculty of Medicine University of North Sumatera Pathology Anatomy Laboratory and Haji Adam Malik General Hospital in the year of 2012-2015.

The purpose of this study is to determine the skin cancer patients profile at Faculty of Medicine University of North Sumatera Pathology Anatomy Laboratory and Haji Adam Malik General Hospital in the year of 2012-2015.

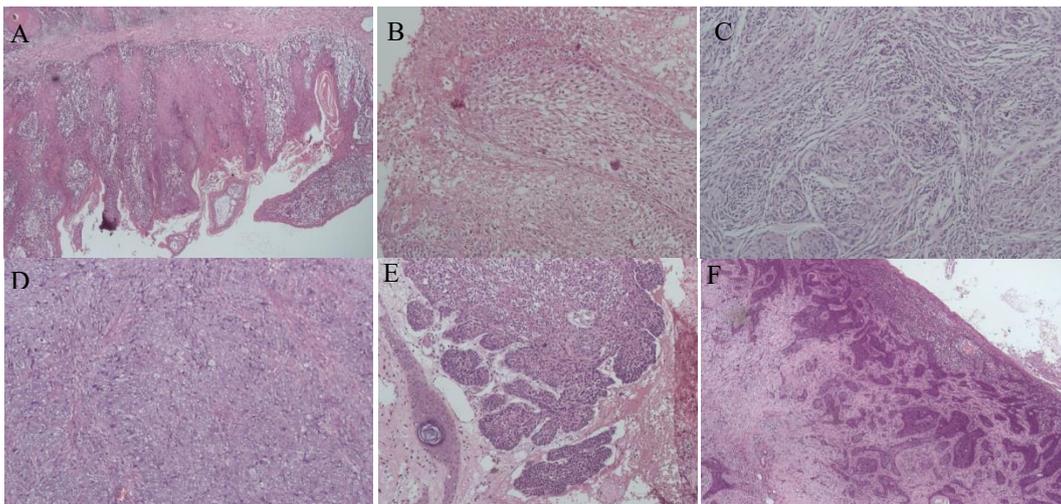
2. Methods

This study is a descriptive study. The population was patients' medical records who had been diagnosed basal cell carcinoma, squamous cell carcinoma and malignant melanoma based on histopathology at Faculty of Medicine University of North Sumatera Pathology Anatomy Laboratory and Haji Adam Malik General Hospital in the year of 2012-2015. Samples were all 92 patients who had been diagnosed with skin cancer based on histopathology.

3. Results

During 1 January 2012-31 December 2015, 92 patients' medical records were chosen as study subjects who had been diagnosed with basal cell carcinoma, squamous cell carcinoma and malignant melanoma based on histopathology.

The total data of melanocytic and non-melanocytic tumor as study samples were 92 cases. Distribution of melanocytic and non-melanocytic tumor patients based on the location where the tissue examination takes place were 83 cases (90.22%) from Haji Adam Malik General Hospital Pathology Anatomy Laboratory.



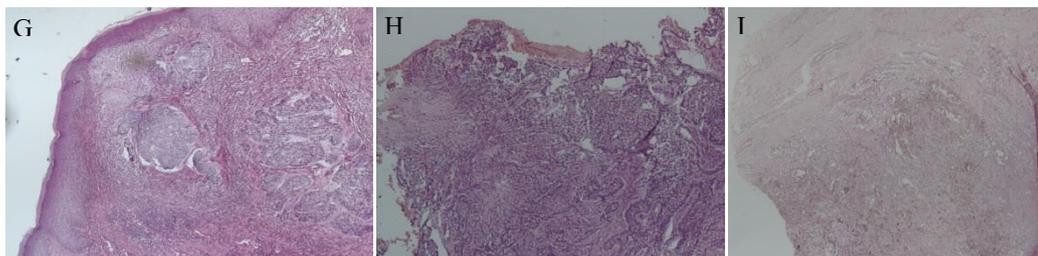


Figure 1. Histopathological subtype. A. Verrucous squamous cell carcinoma (H&E, 40x); B. Acantholytic squamous cell carcinoma (H&E, 40x); C. Spindle cell squamous cell carcinoma (H&E, 100x); D. Adenosquamous carcinoma (H&E, 40x); E. Nodular basal cell carcinoma (H&E, 100x); F. Superficial basal cell carcinoma (H&E, 40x); G. Basosquamous (H&E, 40x); H. Infiltrating basal cell carcinoma (H&E, 40x); I. Nodular Melanoma (H&E, 40x).

Distribution of melanocytic and non-melanocytic tumor patient based on the diagnosed year were 46 cases (50%) in 2014. Squamous cell carcinoma was the most common type of histopathology and often occurs in the age group of 45-57 years old as many as 18 cases. The most common type of histopathology found based on gender was squamous cell carcinoma and mostly found in men compared to women.

Verrucous squamous cell carcinoma as the most common type of squamous cell carcinoma subtype, 12 cases found in the age group of 45-57 years old. Verrucous squamous cell carcinoma was the most common type found in men compared to women. The location where verrucous squamous cell carcinoma mostly found was a lower limb. Verrucous squamous cell carcinoma was mostly found on the farmer.

Nodular basal cell carcinoma was the most commonly basal cell carcinoma subtype found, based on age, nodular basal carcinoma was mostly found in the age group of 45-70 years old (6 cases). Nodular basal cell carcinoma was mostly found on the entrepreneur.

Nodular melanoma (NM) was the most common malignant melanoma subtype found, based on age nodular melanoma was mostly found in the age group of 71-83 (40%). Nodular melanoma (NM) was more common in men than in woman. Nodular Melanoma was mostly found on a lower limb as many as 3 cases (60%). Malignant melanoma was mostly found in entrepreneur compared to other occupation.

Table 1. Distribution of skin cancer.

| Histopathological Subtype | Most Variables | | | | Total Cases |
|-------------------------------|-----------------|-------------------|-------------|------------------------|-------------|
| | Age | Sex (Male:Female) | Job | Location of Tumor Mass | |
| Squamous Cell Carcinoma (SCC) | | | | | |
| Acantholytic SCC | 58-70 years old | 11:11 | Housewife | Upper Extremity | 22 |
| Spindle-Cell SCC | 32-57 years old | 2:0 | Farmer | Head and Neck | 2 |
| Verrucous SCC | 45-57 years old | 19:14 | Farmer | Lower Extremity | 33 |
| Pseudovascular SCC | 19-31 years old | 0:1 | Housewife | Face | 1 |
| Adenosquamous SCC | 32-44 years old | 0:1 | Housewife | Face | 1 |
| Basal Cell Carcinoma (BCC) | | | | | |
| Nodular BCC | 45-57 years old | 6:8 | Enterpriser | Face | 14 |
| Superficial BCC | 45-70 years old | 2:5 | Farmer | Face | 7 |
| Infiltrating BCC | 31-44 years old | 1:1 | Farmer | Face | 2 |
| Microno-dular BCC | - | - | - | - | - |
| Fibroepithelial BCC | - | - | - | - | - |
| Basosquamous BCC | 31-57 years old | 1:2 | Housewife | Face | 3 |

| | | | | | |
|-----------------------|-----------------|-----|------------|-----------------|---|
| Keratotic BCC | - | - | - | - | - |
| Adnexal diff. BCC | 71-83 years old | 0:2 | - | - | - |
| Malignant Melanoma | | | | | |
| Superficial Spreading | 58-70 years old | 1:0 | Enterprise | Lower Extremity | 1 |
| Nodular | 71-83 years old | 1:3 | Enterprise | Lower Extremity | 4 |
| Lentigo | - | - | - | - | - |
| Acral Lentiginous | - | - | - | - | - |

4. Discussion

The total of melanocytic and non-melanocytic tumor patients who fulfilled the inclusion criteria was 92 cases, 83 cases from Haji Adam Malik Pathology Anatomy Laboratory and 9 cases from Faculty of Medicine, University of North Sumatera Pathology Anatomy Laboratory. In this study, melanocytic and non melanocytic tumor cases increase since 2012-2015, but the most cases found was in 2014. This increase is in line with the study of skin malignancy conducted by the Department of Pathology Anatomy RSCM in 1996-1998 and 2005-2009 that the incidence of skin malignancy increases every year.[3]

There were 92 cases of melanocytic and non-melanocytic tumor, 59 cases (64.13%) were squamous cell carcinoma, 28 cases (30.43%) were basal cell carcinoma, 5 cases (5.44%) were malignant melanoma. This result was different compared to other literature and study, which stated that basal cell carcinoma was the most common type found.[2,3]

Based on gender, 48 cases (52.2%) were women and 44 cases were men. Squamous cell carcinoma cases were mostly found on men, but basal cell carcinoma and malignant melanoma were mostly found on women. The majority skin cancer patient age was 45-57 years old (30.4%).[2,3]

The risk factor of non melanocytic skin cancer was the exposure of ultraviolet, white skin and immunosuppression, but in this study cutaneous squamous cell carcinoma was mostly found on lower limb which is the least area of ultraviolet exposure. Some studies see the relationship between cutaneous squamous cell carcinoma and genus-beta human papillomavirus virus (HPV) infection. The exposure of ultraviolet was believed can cause HPV infection. Some in vivo and in vitro studies showed that E6 and E7 protein from HPV can inhibit the repair of DNA and inactivation of p53 which lead to skin cancer.[4-8]

In this study, basal cell carcinoma was found on face which is the most exposed area to ultraviolet. Ultraviolet is electromagnetic spectrum with 100-400 nm in wavelength and is divided into 3 category: UVC (100-280 nm); UVB (280-315 nm) and UVA (315-400 nm). The component of ultraviolet which can reach earth is 95% UVA and 5% UVB, but UVC can be absorbed by stratosphere layer, so it can't reach earth. UVA can increase reactive nitrogen species (ROS) production causing the destruction of DNA from keratinocyte and skin fibroblast. UVA can also produce CPD (cyclobutane-pyrimidine dimers), non oxidative lesion which can increase the mutated DNA replication which can cause carcinogenesis. UVB is 1000 times effective compared to UVA in producing CPD (cyclobutane-pyrimidine dimers). Mutation which caused by UVA can also be found on tumor suppressor gene and oncogene such as p53, PTCH, p16 and RAS which play important role in skin cancer etiology. UVB can also suppress immune system in sensitizing the mediator which can inhibit the activation of T cell and effector cell, so some researchers connect the exposure of ultraviolet with the HPV infection on cutaneous squamous cell carcinoma and basal cell carcinoma. Therefore, some researchers have tried the effect of vitamin C, D, E and antioxidant glutathione administration which can inhibit the UVB effect on skin with quite satisfactory result.[4-8]

In malignant melanoma group, there are 2 subtypes can be found such as superficial spreading melanoma and nodular melanoma subtype, which nodular melanoma subtype was the most common subtype found. The majority age was 58-83 years old. According to gender, malignant melanoma and nodular melanoma was mostly found in women. Malignant melanoma and nodular melanoma subtype was mostly found on lower limb. While for patient occupation does not show significant difference between retired civil servants, housewife and entrepreneur.

5. Conclusion

This study showed that the majority of skin cancer histopathology was squamous cell carcinoma (59 cases, 64.13%), followed by basal cell carcinoma (28 cases, 30.43%) and malignant melanoma (5 cases, 5.44%). Squamous cell carcinoma was mostly found in men, 45-57 years old, lower limb and farmers. The most common subtype found was verrucous squamous cell carcinoma.

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