



(RESEARCH ARTICLE)



## Characteristic of nasopharyngeal carcinoma patients in Sanglah General Hospital Denpasar period 2016-2020

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### Abstract

**Introduction:** Nasopharyngeal carcinoma (NPC) is the most common head and neck malignancy in Indonesia and ranks it as the fourth most common among all malignancies in Indonesia. In Indonesia, it is estimated that the incidence of NPC is 6.2 per 100,000 population or 12,000 new cases per year. The initial stage of the NPC is difficult to establish because of location of the hidden nasopharynx. Misdiagnosis often results from a lack of knowledge about the early signs and symptoms of nasopharyngeal carcinoma.

**Objective:** To know the characteristic of NPC patients in Sanglah General Hospital Denpasar period 2016-2020.

**Methods:** This study used a descriptive research design with a cross sectional design with 602 sample, by taking secondary data from the medical records of patients with NPC who were treated at the ENT-KL polyclinic of Sanglah General Hospital Denpasar for the period 2016-2020.

**Results:** Distribution NPC patients based on gender, the most in male group compare to the female (68.44%: 31.56%). the largest age group was in the 41-50 years group as many as 204 people or 33.89%. The most clinical stage group of NPC patients is stage IVA as many as 301 people (50%) with the histopathological type group of undifferentiated carcinomas compare to the other type groups (89.87%).

**Conclusion:** This study found that NPC is more commonly found in males with the majority aged 41-50 years, most commonly found at an advanced stage, was stage IV A with the most histopathological type is undifferentiated carcinoma.

**Keywords:** Head and neck cancer; NPC; Characteristic; Undifferentiated carcinoma

### 1. Introduction

Nasopharyngeal carcinoma (NPC) is the most common head and neck malignancy in Indonesia and ranks it as the fourth most common among all malignancies in Indonesia. In Indonesia, it is estimated that the incidence of NPC is 6.2 per 100,000 population or 12,000 new cases per year. NPC patients can occur at any age, the average NPC patients is 45-55 years old with an incidence of 23.3 cases / 100,000 men and 8.9 cases / 100,000 women. The ratio of male to female is 2-3: 1[1]. In North America, Western Europe, and Japan, the prevalence of NPC is 1-1.5 of the 100,000 population. The prevalence of NPC in North China, East Mediterranean (southern Italy, Greece and Turkey), Southeast Asia (Thailand, Vietnam, Indonesia, Malaysia and Singapore) is 5-9 cases out of 100,000 population, and the highest incidence occurs

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in South China, especially Guangzhou, Hong Kong, and Taiwan as NPC endemic areas which reached 10-150 cases out of 100,000 population [1,2]. Research conducted by Saraswati et al in Sanglah Hospital for NPC patients in 2014-2016 was 171 cases with male sex more than 114 cases [3].

Similar to other chronic diseases, NPC presents many challenges that go beyond just treating the disease. Patients with NPC often experience one or more of 4 groups of symptoms, namely nasal, ear, cranial nerve involvement, enlarged neck lymph nodes and distant metastases [4]. The initial stage of the NPC is difficult to establish because of location of the hidden nasopharynx. Misdiagnosis often results from a lack of knowledge about the early signs and symptoms of nasopharyngeal carcinoma. This malignancy is manifested by various non-specific signs and symptoms even though the incidence is high, doctors awareness of NPC is inadequate, potentially causing many to be late or missed a diagnosis. Many cases are referred to the hospital at an advanced stage [1,5]. The clinical staging of NPC is based on the TNM classification which relates to the ability of cancer cells to invade normal cells. Invasion of carcinoma cells in a longer distance is called metastasis. Metastasis to carcinoma cells can be carried out in three ways, namely directly penetrating the surface of other surrounding organs, spreading through the lymphatic system (hypogenous), and spreading through the circulatory system (hematogenous) [6,7].

Knowing the description of patients with nasopharyngeal carcinoma at Sanglah General Hospital is important because it can be used as a reference in early diagnosis so that it can provide appropriate therapy for patients with nasopharyngeal carcinoma.

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## 2. Methods

This study used a descriptive research design with a cross sectional design by taking secondary data from the medical records of patients with nasopharyngeal carcinoma who were treated at the ENT-KL polyclinic of Sanglah General Hospital Denpasar for the period 2016-2020. The population was all patients with nasopharyngeal carcinoma who came to the ENT-KL Polyclinic at Sanglah General Hospital Denpasar for the period 2016-2020. Samples are patients who meet the inclusion criteria. The inclusion criteria for this study were patients with nasopharyngeal carcinoma who came to the ENT-KL Polyclinic of Sanglah Hospital, for the period 2016-2020. The exclusion criteria were patients with nasopharyngeal carcinoma who had an incomplete medical record which included information about all the variables. The research results are presented descriptively in tables and narrative. The data are grouped according to the variables studied, then the data will be compared with data from previous studies.

An assessment and statement of the ethical suitability of this study was provided by the Research Ethics Commission of the Faculty of Medicine, Udayana University, Sanglah Hospital Denpasar (783 / UN14.2.2VII.14 / LT / 2021).

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## 3. Results

This research is a descriptive study using cross sectional design. It was found 602 samples who met the requirements as research subjects what met the inclusion and exclusion criteria.

**Table 1** Characteristic of NPC patients based on Gender

Gender	N	%
Male	412	68.44
Female	190	31.56
Total	602	100

Based on gender, the distribution of NPC patients as seen in Table 1 shows that the largest gender group of NPC patients was male, as many as 412 people (68.44%). Meanwhile, the female was 190 people (31.56%).

Based on table 2, the largest age group was in the 41-50 years group as many as 204 people or 33.89%, followed by the 51-60 years with 174 patients or 28.90%, then the 61-70 years as many as 86 patients 14.29%. Meanwhile, 13 patients (2.16%) were under 20 years old.

**Table 2** Characteristic of NPC Patients based on Age

Age	N	%
<20	13	2.16
20-30	22	3.65
31-40	76	12.62
41-50	204	33.89
51-60	174	28.90
61-70	86	14.29
>70	27	4.49
Total	602	100

**Table 3** Characteristic of NPC patients based on Clinical Staging

Clinical Staging	N	%
I	1	0.17
II	60	9.97
III	177	29.40
IVA	301	50.00
IVB	63	10.47
Total	602	100

Based on the clinical stage, the distribution of NPC patients as seen in Table 3 shows that the most clinical stage group of NPC patients is stage IVA as many as 301 people (50%), followed by the Stage III group with 177 people (29.40%), and the stage IVB group as many as 63 (10.47%) and the smallest number that stage I by 1 person (12:17%).

**Table 4** Characteristic of NPC patients based on Histopathological Type

Histopathological type	N	%
Keratinizing Squamous Cell Ca	1	0.17
Non-Keratinizing Squamous Cell	60	9.97
CA Undifferentiated Ca	541	89.87
Total	602	100

Based on histopathology type, distribution of nasopharyngeal carcinoma patients as shown in table 4 that the largest group of patients with NPC is undifferentiated carcinoma as much as 541 people or 89.87%, followed by *non*-keratinizing SCC as many as 60 people (9.97%) and the smallest number is keratinizing SCC was found to be 1 person or 0.17%.

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#### 4. Discussion

In this study, it was found that there were 412 male patients with nasopharyngeal carcinoma and 190 women with ratio of 2.2: 1. According with the research conducted at RSUPN Dr. Cipto Mangunkusumo in 2010 found that there were more men than women, men as many as 114 people and women as many as 53 people with a ratio of 2.1: 1. The same

thing was conveyed in a study conducted by Sharma et al, that the incidence of NPC in Manipur was found to be a 2.2: 1 ratio with 139 men and 61 women [5,8]. The percentage of men is greater than women, this is said to be due to the protective role of estrogen in women [9].

Characteristics of patients with nasopharyngeal carcinoma based on age group, most patients belong to the age group 41-50 years with 204 people (33.89%). The next age group is 51-60 years as many as 174 people (28.90%), and the lowest age group is in the age group less than 20 years (2.16%). Nasopharyngeal carcinoma in some countries have a peak incidence at the age of 50-60 years in the population in China. At the National University Hospital in Singapore, 36% to 40% are diagnosed at the age of 41-50 years. It said the peak overall incidence was found at age 50-60 years. According to Salehiniya, patients with nasopharyngeal carcinoma often occur at the age of 50-60 years [10,11]. Research at Adam Malik Hospital Medan also showed similar results, the highest NPC patients were in the productive age (41-50 years) as many as 50 people (33.1%) [12]. The age pattern of NPC describes a different etiology, namely in adolescence and early adulthood (15-34 years) possibly due to changes in genes that increase the risk of NPC, while in older ages (50 years and over) it is likely due to alcohol and tobacco use [13].

In this study it was found that the distribution of clinical stage of NPC patients with the highest frequency was stage IVA as many as 301 people (50%), while the lowest frequency was found in the stage I group of 1 person (0.17%). This is similar with previous research conducted at RSUPN Dr. Cipto Mangunkusumo in 2010 as much as 51% of patients were diagnosed at stage IV [5]. According to Adham et al., The majority of patients with nasopharyngeal carcinoma have an advanced stage. The initial stage of nasopharyngeal carcinoma is difficult to establish because of the hidden location of the nasopharynx. Misdiagnosis often results from a lack of knowledge about the early signs and symptoms of nasopharyngeal carcinoma [1]. Therefore, early symptoms of NPC are often overlooked and patients are diagnosed after the size of the tumor and enlarged lymph nodes are large at an advanced stage so that patients often come for treatment when they are at an advanced stage [14].

Based on the histopathology type, undifferentiated carcinoma type was the most common histopathological type in 541 people (89.87%) followed by non-keratinizing squamous cell carcinoma in 60 people (9.97%) and keratinizing squamous cell carcinoma by 1 person or 0.17%. This finding is similar to a study conducted by Sharma et al. In 75.0% of cases with undifferentiated carcinoma, followed by non-keratinizing squamous cell carcinoma (15.0%) and keratinizing squamous cell carcinoma in 10.0%. This is similar to a study conducted by Jayalie et al. 75.4% of cases were classified as WHO type III or undifferentiated carcinoma [5,8]. According to Adham et al, that WHO type III is the type of histopathology that is most often found and, in his study, found that 85% of cases proved to be undifferentiated carcinoma. WHO type III, is the most common form of NPC in Southeast Asia and other high incidence areas, and is most closely associated with EBV infection. As is known, the keratinizing type is an invasive type that has the worst prognosis because it is not radio responsive and according to research, tobacco and alcohol play a role in its relationship to the histopathological type of keratinizing [1,14,15]

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## 5. Conclusion

This study found that NPC is more commonly found in males with the majority aged 41-50 years, most commonly found at an advanced stage, was stage IV A with the most histopathological type is undifferentiated carcinoma.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The author reports no conflicts of interest in this work.

### *Statement of informed consent*

Informed consent is not required because taking secondary data.

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