


Clinical Characteristics Of Patients With Nasopharyngeal Carcinoma

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Article Info	ABSTRACT
<p>Keywords: Clinical, Patients, Nasopharyngeal Carcinoma</p>	<p>Nasopharyngeal carcinoma (NPC) is a malignant tumor that grows in the nasopharyngeal region with predictions of Rosenmuller's fossa and nasopharyngeal roof. The incidence of nasopharyngeal cancer in Indonesia is about 5.6 cases per 100,000 population where the discovery of new cases is 15,000 per year. The etiology of nasopharyngeal cancer is multifactorial including Epstein Barr virus (EBV) infection. Treatment of nasopharyngeal carcinoma is complex due to its proximity to critical structures. This research is a Literature Review research with Narrative Review design. This method is used to identify, review, evaluate, and interpret all available research. Characteristics of nasopharyngeal carcinoma patients are that men are the gender most commonly affected by NPC, with the age of 46-55 years being the most vulnerable age, the most common symptoms in patients with NPC are nasal congestion with lumps in the neck, the most The clinical stage of NPC patients is stage IVA, while the most histopathological picture of NPC is the type of Non-Keratinizing Squamous Cell Carcinoma undifferentiated. Based on several journals above regarding the clinical characteristics of patients with nasopharyngeal carcinoma, it can be concluded that men are the gender that most often experiences nasopharyngeal carcinoma in several studies that have been mentioned. While the age that is susceptible to nasopharyngeal carcinoma is 46-55 years. The most common symptoms in patients with nasopharyngeal carcinoma are nasal congestion with lumps in the neck. The most clinical stage of patients is stage IVA. While the histopathology of nasopharyngeal carcinoma is the type of Non-Keratinizing Squamous Cell Carcinoma undifferentiated.</p>
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INTRODUCTION

Nasopharyngeal carcinoma (NPC) is a malignant tumor that grows in the nasopharynx area with predictions in the Rosenmuller fossa and the roof of the nasopharynx . ¹ Nasopharyngeal cancer is one of the most common cancers in Indonesia and is ranked fourth after cervical cancer, breast cancer and skin cancer². The incidence of nasopharyngeal cancer in Indonesia is around 5.6 cases per 100,000 population where the discovery of new cases is 15,000 cases per year. New cases for the whole world are recorded at 129,079 cases or 0.7% of all cancer cases with a death rate reaching 72,987 deaths. ² According to the Ministry of Health of the Republic of Indonesia in 2017, nasopharyngeal cancer generally affects people of productive

age, so it has a major impact on the economic conditions of sufferers and the pattern of health financing by the state. ³

The etiology of nasopharyngeal cancer is multifactorial including Epstein Barr virus (EBV) infection, environment such as exposure to carcinogens (formaldehyde), wood dust and wood smoke, smoking, and food (consuming salted fish containing nitrosamines, salted meat, salted vegetables, and smoked meat). Other risk factors such as geography, age, gender, occupation, socioeconomic also greatly affect the possibility of nasopharyngeal cancer. ⁴

Symptoms and clinical signs that are often found in NPC include epistaxis, nasal obstruction, tinnitus and deafness, cephalgia, cranial nerve symptoms, diplopia, enlarged neck lymph nodes and symptoms of distant metastasis with the most common locations being the bones, lungs, liver and often metastases in many organs at once. ^{5,6} The classification currently used is the WHO in 1991 which divides this malignant tumor into squamous cell carcinoma (keratinizing SCC), nonkeratinizing carcinoma consisting of differentiated and undifferentiated, and basaloid SCC. The boundaries between these subtypes are sometimes unclear, even some researchers report that SCC and nonkeratinizing carcinoma are actually variants of one homogeneous tumor group. Based on reports from various countries, the NPC subtype undifferentiated carcinoma (including nonkeratinizing carcinoma) is the most commonly found subtype, namely, Hong Kong (99%), Singapore (83%), Tunisia (92%), Japan (87%) and the United States (75%). ⁵

The treatment of nasopharyngeal carcinoma is very complex due to its proximity to critical structures. Surgery is only performed for histologic biopsies and treatment of recurrent or persistent disease. Radiotherapy remains the mainstay of treatment for nasopharyngeal carcinoma due to its high radiosensitivity. Chemotherapy also plays a role in the management of nasopharyngeal carcinoma as induction, concurrent, or adjuvant therapy. The combination of radiation and chemotherapy in nasopharyngeal carcinoma can affect structures adjacent to the tumor, thus affecting their function. Early and long-term complications of nasopharyngeal carcinoma treatment are dysphagia or swallowing dysfunction⁷. The overall prognosis and 5-year survival rates have improved with improved radiotherapy techniques. This has resulted in reported 5-year survival rates increasing from 25% to 40% historically to approximately 70% in the modern era of treatment. ⁸

METHOD

This research is a *Literature Review research* with a *Narrative Review design*. This method is used to identify, review, evaluate, and interpret all available research. By using this method, a systematic review and identification of journals can be carried out, which in each process follows the steps or protocols that have been set using national and international journals obtained from *Google Scholar*, *Science Direct*, *Research Gate* & *National Center for Biotechnology Information* (NCBI). The keywords used for the literature search process are "clinical", "patients", and "nasopharyngeal carcinoma". The inclusion criteria are the types of quantitative research published in the last 5 years, namely 2020 - 2024, which are in accordance with the keywords. While the exclusion criteria are journals over the last 5 years.

In addition, in order to limit the scope of the study, the researcher used the PICO method (*Population / Problem, Intervention, Comparison, Outcomes*), as in the following table:

Table 1. PICO Summary

Component	Information
Population/problem	Nasopharyngeal Carcinoma
Intervention	-
Comparison	-
Outcomes	Epidemiology, risk factors, clinical, and stage

RESULTS

Based on the summary results after conducting the search, 11 journals were obtained that were related to the clinical characteristics of nasopharyngeal carcinoma patients as follows:

Table 2. Results of the literature review study

No.	Title	Writer	Method	Results
1.	<i>Characteristics of Nasopharyngeal Carcinoma Patients at Pelamonia Hospital Makassar 2020-2022⁹</i>	<i>Yusuf, M, et all. 2023</i>	<i>Observational</i>	This study involved 40 samples. The distribution of nasopharyngeal carcinoma patients in 2022, which was 25 (62.5%), showed a significantly higher number compared to 2020 and 2021. The distribution of nasopharyngeal carcinoma patients according to age was mostly in those over 51 years of age, which was 21 samples (52.5%). Nasopharyngeal carcinoma patients were predominantly female, with 23 samples (57.5%), nasopharyngeal carcinoma patients predominantly came with the main complaint of nasal obstruction, 15 (37.5%). Nasopharyngeal carcinoma patients according to disease stage were at stage IV A, 15 (37.5%). The most common histopathological picture was Undifferentiated Carcinoma who type 3, 24 (60%) of the total 40 samples.
2.	<i>Clinical Characteristics and Histopathology of Nasopharyngeal Carcinoma at RSPAL Dr. Ramelan, Surabaya</i>	<i>Shoffi, M. N et all. 2022.</i>	<i>Descriptive</i>	Patient characteristics including presenting symptoms, clinical stage and histopathological subtype were recorded and evaluated. Of the 22 NPC patients,

No.	Title	Writer	Method	Results
10				two-thirds were male, more than half presented with neck lumps, and almost all patients were in advanced stages. Histopathological findings showed that WHO subtype 3 was the most common NPC type.
3.	<i>Characteristics of Nasopharyngeal Carcinoma Patients in Mangusada General Hospital in January-December 2019</i> ¹¹	<i>Nurada, I. G., et al. 2020.</i>	<i>Descriptive and Retrospective study</i>	The number of cases obtained was 40 cases. Male nasopharyngeal carcinoma patients were more numerous than female patients with a sex ratio of 1.66, and were most commonly found in the 45-64 years age group (67.5%). Most patients came with advanced complaints such as nasal congestion (60%), nosebleeds (57.5%), and lumps in the neck (55%). The type of nasopharyngeal carcinoma most commonly found histopathologically was non-keratinizing squamous cell carcinoma of the undifferentiated subtype (100%).
4.	<i>Characteristics of Nasopharyngeal Carcinoma Patients at Al-Ihsan Regional General Hospital, Bandung, 2017-2019 Period.</i> ¹²	<i>Hibatullah, H., et al. 2021.</i>	<i>Retrospective descriptive</i>	The results of the study showed the highest frequency based on the stage of the disease, namely stage IVA (44.44%), histopathology, namely WHO Type III/undifferentiated cell carcinoma (61.11%), gender, namely male (57.78%), age group 46-55 years (28.89%), occupation for men, namely private/factory employees (42.31%), occupation for women, namely housewives (IRT) (34.44%), main complaint, namely mass in the neck (38.89%), additional complaints such as nausea, vomiting, and anxiety (53.33%), and those receiving chemotherapy (54.44%).
5.	<i>Characteristics of nasopharyngeal carcinoma patients in</i>	<i>Pratiwi, I. A., et al. 2022.</i>	<i>Descriptive cross-sectional study</i>	Distribution of NPC patients by gender, the most in the male group compared to female (68.44%:

No.	Title	Writer	Method	Results
	<i>Sanglah General Hospital Denpasar period 2016-2020.</i> ¹³			31.56%). The largest age group in the 41-50 year group as many as 204 people or 33.89%. The largest clinical stage group of NPC patients is stage IVA as many as 301 people (50%) with the histopathology type of undifferentiated carcinoma compared to other types (89.87%).
6.	<i>The Association Between Clinical Characteristics and Histopathology of Nasopharyngeal Carcinoma at Dr. Mohammad Hoesin General Hospital, In 2019-2020.</i> ¹⁴	<i>Fauzan, A, et al. 2022</i>	<i>analytical observational with cross sectional study</i>	The largest age group was 35-55 years, which was 44 people (68.8%). Based on gender, the most were men with 53 people (82.8%). Based on clinical symptoms, the most were non-epistaxis with 33 people (51.6%). Based on risk factors, the most were smokers with 36 people (56.3%). Based on histopathological features, the most common picture was differentiated non-keratinizing squamous cell carcinoma with 40 people (62.5%). From the statistical test, the results obtained $p > 0.05$ for all variables (age, gender, clinical symptoms, and risk factors) related to the histopathological picture of nasopharyngeal carcinoma.
7.	<i>Histopathological Characteristics and Clinical Stage of Nasopharyngeal Cancer.</i> ¹⁵	<i>Kuswandi, A, et al. 2020</i>	<i>retrospective descriptive study</i>	Based on the data obtained, the number of nasopharyngeal cancer cases at Dr. H. Abdul Moeloek Hospital for the period 2016 - 2019 has increased every year. The total sample used in this study was 63 samples. The highest distribution of nasopharyngeal cancer sorted by age was the 46 - 55 year age group at 28.6%. The highest distribution of nasopharyngeal cancer sorted by gender was male with 65%. The highest distribution of nasopharyngeal cancer sorted by

No.	Title	Writer	Method	Results
				Histopathology classification was the Nonkeratinizing Cell Carcinoma-Underdifferentiated subtype with 71.4%. The highest distribution of nasopharyngeal cancer sorted by clinical stage was Stage III with 63.3%.
8.	<i>Characteristics of Head and Neck Malignancy Patients at Waled Regional Hospital in the Period 2014-2018.</i> ¹⁶	<i>Supriyanto, N. et al. 2020</i>	<i>Descriptive</i>	There were 690 patients with head and neck malignancies. A total of 159 patients were included; 75 men and 84 women. Most were aged 26-45 years (39.0%) and 46-65 years (39.0%) and most had elementary school education (65.4%), worked as housewives (39.0%). The most common types of cancer were nasopharynx (57.9%), thyroid (27.7%), oral cavity (5.0%), larynx (5.0%), sinonasal (3.1%), oropharynx (1.3%) and hypopharynx none. The most common histopathology was undifferentiated carcinoma (56.6%) and papillary carcinoma (15.1%).
9.	<i>Overview of Nasopharyngeal Carcinoma Patients at Abdul Wahad Sjahranie Regional Hospital Samarinda for the Period 2016-2020.</i> ¹⁷	<i>Aslam, et al. 2022</i>	<i>Retrospective descriptive</i>	The number of research samples was 104 nasopharyngeal carcinoma patients who met the inclusion criteria, obtained by purposive sampling. Nasopharyngeal carcinoma is most common in the 46-55 year age group (36%), 71% of patients are predominantly male, 79% of patients experience clinical symptoms of enlarged lymph nodes, 59% experience mild anemia, 97% of patients with histopathological type of undifferentiated carcinoma (WHO type III).
10.	<i>Characteristics of patients with nasopharyngeal carcinoma in</i>	<i>Utomo, A. W, et al. 2023</i>	<i>Retrospective descriptive</i>	Data from 262 patients showed that the five-year survival rate for NPC patients in women was 84%, while in men it was 78%. The main

No.	Title	Writer	Method	Results
	<i>Dr. Soetomo General Academic Hospital Surabaya</i> ¹⁸			complaint of patients in this study was a lump in the neck in 130 patients (49.61%), with the largest distribution of patients based on stage IV a with 78 patients (29.77%), and the majority were non-keratinizing carcinoma undifferentiated types, with a total of 245 patients (93.51%).
11.	<i>Comparison of Characteristics of Smoking and Non-Smoking Nasopharyngeal Carcinoma Patients at Pelamonia Hospital Makassar in 2020 - 2022.</i> ¹⁹	<i>Alimin, A. et al. 2024</i>	<i>Retrospective descriptive</i>	The results of this study obtained the number of samples obtained, namely 45 samples, obtained the most nasopharyngeal carcinoma patients in smoking patients, namely 25 patients (55.56%), patients with histopathology in nasopharyngeal carcinoma patients who smoked the most were non-creatinizing carcinoma (WHO2) and Undifferentiated carcinoma (WHO3) with 10 patients (22.22%), and the stage in smoking patients was the most stage IV (T4 or N3) with 15 patients (33.33%).

Discussion

Nasopharyngeal cancer is a malignant tumor located in the head and neck area where the symptoms of this cancer can be divided into four, namely eye and nerve symptoms, ear symptoms, metastasis or symptoms in the neck and the last is the symptoms of the nasopharynx itself.²

Nasopharyngeal carcinoma is a type of squamous epithelial cancer originating from the surface of the lateral nasopharyngeal wall. Nasopharyngeal carcinoma is the most common malignant head and neck tumor found in South China, Taiwan, and Southeast Asia, especially Indonesia. The prevalence in Indonesia based on histopathology is reported to be around 6.2 cases for every 100,000 population each year. Nasopharyngeal cancer in Indonesia is ranked 5th with 19,943 new cases (5%) and 13,399 deaths (5.7%). Nasopharyngeal carcinoma is the most common malignant tumor among malignant ENT-KL tumors in Indonesia, where nasopharyngeal carcinoma is included in the top five malignant tumors with the highest frequency (along with malignant uterine cervix tumors, breast tumors, lymph tumors and skin tumors), while in the head and neck area it occupies the first place (nasopharyngeal carcinoma gets a percentage of almost 60% of tumors in the head and neck area, followed by malignant tumors of the nose and paranasal sinuses 18%, larynx 16%, and malignant tumors of the oral cavity, tonsils, hypopharynx in a low percentage.⁷

According to Kuswandi, A. (2020) obtained the histopathological characteristics and clinical stages of nasopharyngeal cancer and obtained the frequency distribution of nasopharyngeal cancer based on gender and age at Dr. H. Abdul Moeloek Regional Hospital in 2016 - 2019. Nasopharyngeal cancer is often found in men because of the high levels of androgen sex hormones compared to levels found in women. Androgen hormones can affect the regulation of cancer cell growth. In addition, risk factors such as smoking, work related to carcinogenic pollutants and alcohol consumption are also more common in men than in women.¹⁵

Various studies have shown that smoking has a harmful effect on all body tissues, especially the respiratory system. Smoking is directly linked to chronic bronchitis and cancer. In addition, smoking can increase the risk of death by 70% compared to non-smokers and increase the risk of death for smokers up to five to eight years earlier than non-smokers. Smoking can increase the risk of nasopharyngeal cancer¹⁹. In the early stages, this tumor is difficult to recognize. Patients usually only come in the advanced stages when a lump has appeared in the neck, nerve disorders have occurred, or distant metastases have occurred. Symptoms that appear can include nasal congestion, mild epistaxis, tinnitus, otalgia, diplopia and trigeminal neuralgia (nerves III, IV, V, VI), and a lump appears in the neck.¹⁷

The definitive diagnosis of nasopharyngeal carcinoma is established by anatomical pathology examination with specimens derived from nasopharyngeal biopsies. Biopsy results indicate the type of malignancy and degree of differentiation. Histopathological types of nasopharyngeal carcinoma based on WHO criteria are: keratinizing squamous cell carcinoma (WHO type I), non-keratinizing carcinoma (WHO type II) and undifferentiated carcinoma (WHO type III)¹⁷. Research by Hibatullah H, et al (2021) found that the highest frequency of nasopharyngeal carcinoma was in stage IVA, WHO Type III/undifferentiated cell carcinoma, male, aged 46-55, male occupation: private or factory employee, female occupation: housewife (IRT), the main complaint was a mass in the neck, additional symptoms included nausea, vomiting and anxiety, and chemotherapy.¹²

CONCLUSION

Based on several journals above regarding the clinical characteristics of patients with nasopharyngeal carcinoma, it can be concluded that men are the gender that most often experiences nasopharyngeal carcinoma in several studies that have been mentioned. While the age that is susceptible to nasopharyngeal carcinoma is 46-55 years. The most common symptoms in patients with nasopharyngeal carcinoma are nasal congestion with lumps in the neck. The most clinical stage of patients is stage IVA. While the histopathology of nasopharyngeal carcinoma is the type of Non-Keratinizing Squamous Cell Carcinoma undifferentiated.

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