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Profile of Nasopharyngeal Carcinoma in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021

Perfil del carcinoma nasofaríngeo en el Hospital Dr. Wahidin Sudirohusodo Makassar 2011 - 2021

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SUMMARY

Background: *Nasopharyngeal carcinoma (NPC) is Indonesia's most common head and neck malignancy. NPC presents non-specific signs and symptoms, which lead to a late or missed diagnosis. Early detection and prevention are essential based on the NPC profile.*
Objective: *This study aimed to assess NPC's sociodemographic and clinical characteristics in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021.*
Method: *Observational descriptive study with a cross-sectional design was conducted by using secondary data collecting medical records of all NPC patients in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021.*
Results: *Out of 1 096 patients, 70.3 % of the patients were male, and most of them were from Makassar and Bugis. A palpable lump in the neck is the most common complaint in presentation (28.8 %), followed by nasal congestion (18.6 %). Salted fish consumption was the most prevalent risk factor (28.1 %).* **Conclusion:** *Studying the sociodemographic and clinical characteristics of NPC patients is the most critical factor that causes NPC problems.*
Keywords: *Nasopharyngeal carcinoma, characteristic.*

RESUMEN

Antecedentes: *El carcinoma nasofaríngeo (NPC, por sus siglas en inglés) es la neoplasia maligna de cabeza y cuello más común en Indonesia. NPC presenta signos y síntomas inespecíficos, que conducen a un diagnóstico tardío o erróneo. La detección temprana y la prevención son importantes según el perfil de NPC.*
Objetivo: *Este estudio tuvo como objetivo evaluar las características sociodemográficas y clínicas de NPC en el Hospital Dr. Wahidin Sudirohusodo Makassar 2011 - 2021.*
Método: *Se realizó un estudio descriptivo observacional con un diseño transversal utilizando datos secundarios que recopilan registros médicos de todos los pacientes de NPC en Dr. Wahidin Sudirohusodo Hospital Makassar 2011 - 2021.*
Resultados: *de 1 096 pacientes, el 70,3 % de los pacientes son hombres y la mayoría de ellos son de Makassar y Bugis. Un bulto palpable en el cuello es la queja más común en la presentación (28,8 %), seguido de la congestión nasal (18,6 %). El consumo de pescado salado fue el factor de riesgo más prevalente (28,1 %).* **Conclusión:** *Estudiar las características sociodemográficas y clínicas de los pacientes de NPC es el factor más importante que causa problemas de NPC.*
Palabras clave: *Carcinoma nasofaríngeo característico.*

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INTRODUCTION

Nasopharyngeal carcinoma (NPC) is a tumor arising from the epithelial cells that cover the surface and line the nasopharynx and is the most common head and neck malignancy in Indonesia (1,2). NPC is generally more common in Southeast Asia (1). It remains a health burden in Indonesia, with an overall incidence estimated at 6.2/100 000 or 12 000 new cases yearly. Unfortunately, many of these cases are unregistered in Indonesia due to several factors (1,3).

Based on GLOBOCAN (2020), it was reported that the incidence of new cases of nasopharyngeal carcinoma in Indonesia was 19 943 cases. Deaths from the nasopharynx in Indonesia reached 13 399 cases (4).

The detection of nuclear antigen associated with Epstein-Barr virus (EBV) and viral DNA in NPC type 2 and 3, has revealed that EBV can infect epithelial cells and is associated with their transformation. The etiology of NPC, particularly the endemic form, seems to follow a multi-step process, in which EBV, ethnic background, and environmental carcinogens all seem to play an important role. However, only a small proportion of individuals infected with EBV develop nasopharyngeal carcinoma. This indicates that EBV alone is not a sufficient cause for this malignancy. In adults, other likely etiological factors include genetic susceptibility, consumption of food, in particular salted fish, containing carcinogenic volatile nitrosamines, and as in children, EBV. Environmental exposures and or genetic risk factors likely also play a role in the pathogenesis of NPC (5,6). Therefore, the family of NPC patients is a high-risk group for the occurrence of NPC. This finding supports the genetic factor hypothesis, so it is important to do early screening and detection for family members of NPC patients (6).

NPC presents numerous challenges that go beyond simply treating the disease. The malignancy is manifested with various non-specific signs and symptoms, and despite its high incidence, general practitioners' awareness of NPC is inadequate, potentially leading to many late or missed diagnoses, so they come to health services at an advanced stage (7,8). Saraswati et al (2019) reported that the incidence of NPC in Sanglah Hospital Denpasar increased every year and is more often known in the advanced stage (9). Hibatullah et al. (2021) reported that the characteristics found in NPC patients are caused by non-specific symptoms so they come to health services at an advanced stage (8).

Given that NPC has a considerable impact on health, early detection, and prevention are proposed as the best way to overcome this problem. To do that, we must have data on the population's risk factors and intervention targets. Based on this, was conducted this study to obtain statistical data from the Department of Otorhinolaryngology-Head and Neck Surgery, continuing the previous data in the range of 10 years.

METHOD

This research is a descriptive observational study with a cross-sectional design in a retrospective manner. It analyzes the sociodemographic and clinical characteristics of NPC patients. The sampling technique was total sampling by using secondary data collecting medical records. The research subjects were all NPC patients in Dr. Wahidin Sudirohusodo Hospital Makassar in 2011 – 2021 who fulfilled the inclusion criteria and exclusion criteria incomplete medical record data. The confidentiality of the subject identity was guaranteed. The ethical clearance number is 505/UN4.6.4.5.31/ PP36/ 2022.

RESULTS

Data extraction showed that from 2011 – 2021 there were 1.096 medical records of NPC patients in Dr. Wahidin Sudirohusodo Hospital Makassar.

Table 1 indicates that 771 cases (70.3 %) of NPC patients are male, and most of them (88.8 %) are older than 30 years. In the 1-15-year age group, the highest number of 15 years old was found in 5 cases (0.5 %). The youngest age is found at 9 years. The patients come from various ethnicities in Indonesia, and the most common are Makassar

(42.2 %) and Bugis (27.1 %). Among the known environmental risk factors, the most prevalent is salted fish consumption, identified in 28.1 % of patients. Betel consumption and passive smokers are identified as the two lowest risk factors (8.7 % and 4.8 %, respectively) (Table 1).

Table 1. Sociodemographic Characteristics and Risk Factors of NPC in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021

Characteristics and risk factors	n	%
Characteristics		
Sex		
Male	771	70.3
Female	325	29.7
Age		
1-15	13	1.2
16-30	110	10.0
31-45	372	34.0
46-60	452	41.2
>60	149	13.6
Ethnicity		
Makassar	463	42.2
Bugis	297	27.1
Toraja	184	16.8
Mandar	110	10.1
Others	42	3.8
Risk factors		
Family		
Yes	242	22.1
No	173	15.8
Active smokers		
Yes	273	24.9
No	197	17.9
Passive smokers		
Yes	53	4.8
No	48	4.4
Betel consumption		
Yes	96	8.7
No	87	7.9
Alcohol consumption		
Yes	107	9.8
No	98	8.9
Salt fish consumption		
Yes	308	28.1
No	206	18.8
Sunlight exposure		
Yes	121	11.0
No	114	10.4

As shown in Table 2, a palpable lump in the neck is the most common complaint at presentation, found in (28.8 %) of patients, followed by nasal congestion (18.6 %) and unilateral hearing defect unilateral (18.1 %). Most patients have felt these complaints for 6 months or less. However, some patients tolerated the complaints for more than a year before going to a doctor.

Table 2. Symptoms and Duration of NPC in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021

Symptoms and Durations	n	%
Neck lump		
Yes	316	28.8
≤ 6 months	173	15.8
7-12 months	89	8.1
> 1 year	54	4.9
No	115	10.5
Nasal congestion		
Yes	204	18.6
≤ 6 months	132	12.0
7-12 months	47	4.3
> 1 year	25	2.3
No	106	9.7
Bloody discharge		
Yes	74	6.7
≤ 6 months	49	4.5
7-12 months	15	1.4
> 1 year	10	0.9
No	59	5.4
Epistaxis		
Yes	87	7.9
≤ 6 months	53	4.8
7-12 months	21	1.9
> 1 year	13	1.2
No	65	5.9
Postnasal drip		
Yes	49	4.5
≤ 6 months	23	2.1
7-12 months	15	1.4
> 1 year	11	1.0
No	36	3.3
Diplopia		
Yes	67	6.1
≤ 6 months	32	2.9
7-12 months	21	1.9
> 1 year	14	1.3
No	55	5.0

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Symptoms and Durations	n	%
Hearing defect (unilateral)		
Yes	198	18.1
≤ 6 months	87	7.9
7-12 months	70	6.4
> 1 year	41	3.7
No	76	6.9
Hearing defect (bilateral)		
Yes	173	15.8
≤ 6 months	71	6.5
7-12 months	63	5.7
> 1 year	39	3.5
No	70	6.4
Tinnitus		
Yes	95	8.7
≤ 6 months	41	3.7
7-12 months	34	3.1
> 1 year	20	1.8
No	68	6.2

DISCUSSION

This study provides benefits in adding scientific references to the profile of NPC patients and in clinical applications can be used as input for NPC profile data in Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021 obtained for further research on nasopharyngeal carcinoma.

Characteristics of the Patients

This research was held at the medical record installation of Dr. Wahidin Sudirohusodo Hospital Makassar 2011 – 2021 with a total sample of 1.096 cases. The characteristics studied were sex, age, and ethnicity. The characteristic of the gender in this study is 70.3 % were male, similar to Asnir et al. (2020) studies which reported that most sufferers of NPC are men (69.3 %). Saraswati et al. (2019) also reported that the highest gender was found in the male gender as many as 75 people (65.79 %) (1,9). Besides that, based on GLOBOCAN (2020), it was reported that in Indonesia, NPC occurs 5.6 times greater in men than women and is the 5th highest cancer in men with a total case of 10.7/100 000 population and women 3.00/100 000 population (4).

In this study, the incidence of NPC based on age was most commonly found in the age group 46-60 years (41.2 %). This finding follows the general age trend of NPC that starts to rise after age 30 years old. The characteristic age of the patient in this study is similar to the reported by Dawolo et al. (2017) who indicated that most NPC patients are from the age group between 46-55 years (30.91 %). In addition, Bachri et al. (2020) reported that the highest number of cases was over 50 years, namely 116 cases (42 %), followed by 68 cases (24 %) aged 41-50 years, 62 cases (22 %) aged 31-40 years, 21-30 years old were 25 cases (25 %), and less than 20 years old were 7 cases (3 %). Saraswati et al. (2019) research showed that the highest periods were in the age group of productive age (36-55 years). According to Asnir et al. (2020), the peak incidence is from the age group 38-47 years (31.6 %) (9-11).

The majority of patients' ethnicity in this study are Makassar (42.2 %), Bugis (27.1 %), Toraja (16.8 %), and Mandar (10.1 %). Compared to other ethnicities, these ethnicities have the largest population in South Sulawesi hence, this distribution may simply reflect the general population and not the genetic risk factor. People of Makassar descent are most prevalent in NPC cases. Nevertheless, other ethnicities are also affected by NPC and thus, there might be no strong relation between the risk factors of NPC and ethnicities. Bachri et al. (2020) also reported that the most original nasopharyngeal carcinoma patients were from the Bugis-Makassar tribe 178 cases (63.57 %) (11).

Risk Factors

Increased risk of NPC has been associated with numerous factors. Having a multifactorial etiology, there are several factors related to NPC, such as salted fish consumption and smoking (7).

In this study, the most prevalent risk was salted fish consumption identified in 28.1 % of patients. In line with our results are the Jayalie et al. (2016) data who stated that salted fish consumption was the most prevalent risk factor (29.9 %). Furthermore, Kasim, et al. (2020) found that there is a significant correlation between the consumption of salted fish and the occurrence of NPC. Kurniasari (2020) also showed that

there is an association between salted fish consumption and nasopharyngeal incidence at the otolaryngeal-head and neck department in RSUP Dr. Mohammad Hoesin Palembang (7,12). The involvement of salted fish and the development of NPC is believed to be related to its component that is nitrosamine (13). In this study, active smokers were identified in 27.3 %. Aini et al. (2022) found that there is a content in cigarettes (nicotine) that can affect several mechanisms of cancer cell formation (14).

In this study, we found that betel consumption was one of the lowest risk factors. Therefore, even though betel consumption might be strongly associated with NPC in some countries, its clear involvement in Indonesia especially in South Sulawesi is still yet to be studied.

Sign and Symptoms

NPC usually originates in the lateral wall of the nasopharynx, which includes the fossa of Rosenmuller. It can then extend within or out of the nasopharynx to the other lateral wall and/or posterosuperiorly to the base of the skull or the palate, nasal cavity, or oropharynx. It then typically metastases to cervical lymph nodes. Distant metastases may occur in bone, lung, mediastinum, and, more rarely, the liver (15).

Cervical lymphadenopathy is the initial presentation in many patients, and the diagnosis of NPC is often made by lymph node biopsy. Symptoms related to the primary tumor include trismus, pain, otitis media, nasal regurgitation due to paresis of the soft palate, hearing loss, and cranial nerve palsies. Larger growths may produce nasal obstruction or bleeding and a "nasal twang". Metastatic spread may result in bone pain or organ dysfunction. Rarely, a paraneoplastic syndrome of osteoarthropathy may occur with widespread disease (15).

In the present study, the most developed symptom was a palpable lump in the neck (28.8 %). Nafisa et al. (2022) reported that the main common complaint was an enlargement of neck lymph nodes (55.1 %). Similarly, Hibatullah et al. (2021) stated that the main complaint is the masses in the neck (38.89 %). Moreover, the second most complaint was nasal congestion (23.5 %) (2,8). Jayalie et al. (2016) stated that a palpable lump in the neck is the most common complaint in presentation (58.1 %), followed by nasal congestion (49.1 %). Faiza et al. (2016) indicated that clinical symptoms were neck mass (93,17 %), followed by nasal obstruction (79,55 %) (7,16).

Most patients come to seek a medical advisor when the duration of the symptoms is 6 months or less, but unfortunately, there were still a lot of patients who came to seek medical advice after more than 6 months, even years. A combination of lack of awareness, knowledge about NPC, and unspecific early signs and symptoms often lead to worsened prognosis. Therefore, the role of a health professional is to be an educator about an early detection system and ensure that patients perform healthy behavior in their daily lives (7).

In conclusion, the characteristic of 1.096 patients who came to Dr. Wahidin Sudirohusodo Hospital Makassar in 2011 – 2021 showed the same sex and age distribution compared with other studies. In this study, most of the NPC patients complained of neck lumps and nasal congestion. We also found that the medical-seeking behavior of NPC patients in Indonesia especially in South Sulawesi is still low as many patients were diagnosed after 6 months of symptoms. In addition, the most prominent risk factor is salted fish consumption. In addition, it was found that the most ethnic groups were Makassar and Bugis.

The limitation of this study is the lack of data with adequate quality. We found that several medical records data were filled incompletely thus creating a problem in data extraction, so some data must be excluded. Therefore, medical records should be filled as completely as possible and should be computerized for the next researcher it is expected to complete the limitation of this study by adding more variable variations.

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The author realized that in writing this research article, there are limitations and shortcomings. Hopefully, this research article is useful.

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