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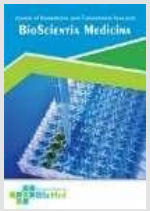

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Trends in Tongue Cancer in Tertiary Hospital in West Java for 5 Years: A Retrospective Study

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A B S T R A C T

Background: Oral cavity malignancy is the most common carcinoma of the head and neck. In the Western world, the tongue and floor of the mouth are the most common sites of origin for primary squamous cell carcinoma in the oral cavity. However, data and reports about tongue cancer is still limited, especially in Indonesia. The aim of this study is to get the epidemiological profile of tongue cancer in tertiary hospital in West Java from 2017 – 2021. **Methods:** This study was a retrospective review of all patients with tongue cancer. The study used data from hospital information system from 2017 to 2021. Data collected were gender, age, histology, lymph node metastases. All data were analyze using statistical analysis program. **Results:** Of the 120 cases analyzed. Sixty-eight of the 120 cases (56.67%) were found on female. The age group with the most cases was found in group of 51-60 years (35%). Histological examination showed 59 cases (49.17%) were squamous cell carcinoma well-differentiated, 28 cases (23.33%) showed lymph node regional metastases, and one case showed distant metastases to lung. **Conclusion:** Tongue cancer profile in tertiary hospital in West Java mostly found in female with squamous cell carcinoma well-differentiated showed the most common. Of all cases, the spread to regional lymph nodes is only a few, not reaching thirty percent.

1. Introduction

Head and neck cancer consists of a variety of tumors originating from different anatomical locations. Worldwide, oral cavity cancer has the highest incidence of head and neck cancer. The oral cavity is continuously inhaled and exposed to carcinogens. This causes the oral cavity to be the most frequent location of malignancies originating from the epithelial tissue in the head and neck. More than 90% of oral cavity malignancies are squamous cell carcinoma, and the most frequent anatomical locations are the tongue and floor of the mouth. Data from Global Cancer Observatory 2020 (Globocan) shows that oral cavity cancer is in the 17th most common position worldwide with an incidence of 4.1. In Indonesia, Globocan 2020 data shows the same results, where oral cavity cancer ranks 17th with a total of 5780 new cases.[1-4]

Classically, tongue cancer is most often experienced by men with a history of smoking and/or alcohol consumption. Tongue cancer cases are predominantly male, and estimates of the number of cases in the world vary greatly depending on geographic location. Rao et al. compared reports from several studies in several Asian countries between 2000 – 2012 and found that the ratio of men to women varied between 6:1 to 1.45. The incidence of oral cavity cancer increases with age, most commonly found in the third to sixth decades of age.[1,5,6] However, some studies show an increased incidence of cases of squamous cell carcinoma on the tongue in recent decades, especially in women and young patients

without the risk factors of smoking or alcohol consumption. This is thought to be related to the high number of cases of squamous cell carcinoma in the oropharynx associated with HPV.[1] It is hoped that the results of this research will provide insight into the epidemiology of tongue cancer in West Java tertiary referral hospitals so that it will provide an overview of the development of more effective public health strategies.

2. Methods

This research is an observational study by collecting data retrospectively on all tongue cancer patients. Data was taken from the hospital information system (SIRS) from January 2017 to December 2021. Data collected included gender, age, histology, and spread to lymph nodes. Cancer cases are searched by code. International Classification of Disease, ninth edition (ICD-9). The parts of tongue cancer (141 ICD-9) consist of (1) the base of the tongue (141.0 ICD-9); (2) the dorsal surface (141.1 ICD-9); (3) tip and lateral edge (141.2 ICD-9); (4) ventral surface/or anterior 2/3 (141.3 ICD-9); (5) tongue unspecified' (141.9 ICD-9). All data was compiled in Excel tabulation and analyzed using SPSS (statistical package for social sciences). Data are presented in the form of number (n) and percentage (%).

3. Results and Discussion

From this research, it was found that over 5 years, the number of cases of tongue malignancies in West Java tertiary hospitals was 120 cases. The comparison between male and female patients is not too far, with female patients being more numerous with a ratio of 4 : 5. The age range for most cases of tongue malignancy is 51 - 60 years, with a total of 42 cases, and most of them are women.

Table 1. Description of tongue cancer characteristics.

Characteristics	Total (n = 120)	
	Frequency	Percentage (%)
Year		
2017	40	
2018	19	
2019	29	
2020	17	
2021	15	
Gender		
Male	52	43.33
Female	68	56.67
Age		
20 – 30	10	8.33
31 – 40	16	13.33
41 – 50	23	19.17
51 – 60	42	35.00
61 – 70	19	15.83
71 - 80	10	8.33

Based on Table 1, It can be seen that the incidence of tongue carcinoma tends to decrease. Classically, the incidence of tongue carcinoma is higher in men than women, which is the same as most other oral cavity cancers. The age-specific incidence varies depending on anatomical location and is starting to change due to the increasing number of women who smoke.[7] In the United States, the incidence of tongue carcinoma in women began to increase, showing an increase from 15% in 1927 – 1934 to 47% in 1988 – 1997.[3] This is as reported in this study, where there was no significant difference between the number of male and female sufferers, but women showed a slightly higher number, namely 68 people (56.67%).

The risk of oral cavity cancer increases with age and is most commonly found in the third to sixth decades of age. Albuquerque et al. reported in their research in Portugal that the average tongue

carcinoma sufferer was in the fifth decade of life for men and the sixth decade of life for women. Research conducted by Isadora et al. in Yogyakarta showed that the largest distribution of tongue carcinoma cases occurred between the ages of 41 and 60. In accordance with previous research, the incidence of tongue carcinoma at Dr. Hasan Sadikin General Hospital is highest at the age of 51 – 60 years. The variation in gender and age distribution of tongue carcinoma can be caused by several factors, such as lifestyle and culture.[6-9]

Primary oral cancer tumors can originate from the surface epithelium, minor salivary glands, or submucosal soft tissue. More than 90% of oral cavity cancers are squamous cell carcinomas, and the remainder are minor salivary gland carcinomas and other rare tumors. Most patients with tongue malignancies in tertiary level hospitals in West Java had squamous cell carcinoma well-differentiated/SCC well-differentiated histology (49.17%). Apart from well-differentiated SCC, there are also several other types of histopathology found in patients at tertiary-level hospitals in West Java, as described in Table 2. Research conducted in Yogyakarta by Isadora et al. showed that well-differentiated squamous cell carcinoma was the most common, with an incidence of 74.7%.[3,9]

A total of 28 cases (23.33%) experienced regional spread to the lymph nodes, as evidenced by the presence of malignant cells on histopathological and cytopathological examination. There was also 1 patient who had distant metastases to the lungs, with a histopathological picture of poorly differentiated adenocarcinoma. Of the 28 cases that experienced spread to regional lymph nodes, the type that experienced the most spread was SCC well differentiated, namely 15 cases (Table 3).

Table 2. Histopathological features.

Histopathological features	Total (n)
SCC well differentiated	59
SCC moderate differentiated	35
SCC poorly differentiated	11
Basaloid squamous cell carcinoma	1
Keratinizing squamous cell carcinoma	1
B cell lymphoma	6
Polymorphous low-grade adenocarcinoma	1
Adenoid cystic carcinoma	1
Adenocarcinoma not otherwise specified	2
Microinvasive squamous cell carcinoma	1
Mucoepidermoid carcinoma	1
Non keratinizing squamous cell carcinoma	1

Table 3. Lymph node distribution pattern.

Histopathological features	Lymph node metastasis (n)
SCC well differentiated	15
SCC moderate differentiated	9
SCC poorly differentiated	2
Adenocarcinoma not otherwise specified	1
Non keratinizing squamous cell carcinoma	1

4. Conclusion

The description of tongue carcinoma at Dr. Hasan Sadikin General Hospital over a 5-year period shows that there are more cases in women, and the highest incidence is in the age group 51 - 60 years. The histopathological features found are varied, but the most common is well-differentiated squamous cell carcinoma. In that 5-year period, most tongue

carcinoma patients did not experience spread to regional lymph nodes; only around 23.33% experienced spread to regional lymph nodes.

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