ROLE OF DIETARY INTAKE AS RISK FACTOR FOR NASOPHARYNGEAL CARCINOMA IN MUHAMMADIYAH HOSPITAL PALEMBANG JUNE 2017-SEPTEMBER 2018

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Abstract

Introduction: Nasopharyngeal Carcinoma (NPC) is the most common malignancy in head and Neck in Indonesia. Until now Epstein Barr virus as factor causing NPC, but no viral cause like dietary intake and food can also become the risk the prevalence of NPC.

Objective: To evaluate the role of dietary intake as a risk factor in NPC patients in the department ORLHNS Muhammadiyah Hospital Palembang.

Method: Using medical record data in Muhammadiyah Hospital Palembang from June 2017 until September 2018, this is a descriptive crosssectional study. The primary outcomes were patient medical history about their dietary intake, as well as examination for NPC like physical examination, CT Scan, and biopsy result.

Result: A total of 17 cases of NPC, 64.70% (11 patients) were man and 35.3% (6 patients) were women. From medical history we get dietary factor that as risk factor to cause NPC were salted fish 11 patient (64.7%), 4 salted meat (23.5%) and 2 alcohol consumption (5.9%).

Conclusion: Dietary intake or food are a non-viral factors that correlate in increasing the risk of NPC. The highest dietary factors are salted fish (64.7%).

Article Info

Keywords:

Nasopharyngeal Carcinoma, risk factor, dietary intake

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1. INTRODUCTION

Nasopharyngeal carcinoma (NPC) is the most common malignancy in head and neck in Indonesia, where NPC is among the top five carcinoma with the highest frequency, whereas in the Head and Neck Oncology occupies the first place (NPC percentages almost 60% of Head and Neck Carcinoma, followed by sinonasal carcinoma 18%, 16% laryngeal carcinoma, and oral carcinoma, tonsils, hypopharynx in low percentages). NPC is a carcinoma that is unique and different from other head and neck carcinoma in epidemiological, histopathological features, clinical characteristics and biological characteristics, this can be seen from the incidence of NPC that are endemic in Asia such as South China, Southeast Asia, Japan and the Middle East [1-3].

From the literature stated that there are two factors that cause NPC, viral factors and nonviral factors. Viral factor (Epstein Barr virus) is the dominant factor in the emergence of NPC, but non-viral factors are considered one of the risk factors that increasing the incidence of NPC nowadays. Nonviral factors such as the environment and genetics can activate the inactive Epstein Barr virus to become active so that it will cause clinical symptoms of NPC. There are various studies reporting that the causes of nonviral nasopharyngeal carcinomas include salted fish, preserved foods, alcohol and other environmental factors. Salted fish, and salted meat are the causes of nasopharyngeal carcinoma because they are associated with carcinogens which include nitrosamines. While alcohol is also the cause of nasopharyngeal carcinoma due to the use of high alcohol levels [4-6].

2. MATERIAL AND METHODS

This is a retrospective descriptive cross sectional study, with secondary data collected from the medical record in the Muhammadiyah Hospital Palembang from June 2017 until September 2018. Inclusion criteria is patient with Nasopharyngeal Carcinoma and consumed each food (salted fish, salted meat or alcohol) at least three times per week and more than three years. Alcohol relative risk for individuals with alcohol intake between 1-7 drinks/week. The primary outcomes were patient medical

history about their dietary intake, as well as examination for NPC like physical examination, CT Scan, and biopsy result.

3. RESULT

The number of all patients that has NPC that was collected from the medical record of the ENT Clinic of Muhammadiyah Hospital Palembang in June 2017-September 2018, was 17 patients.

The highest NPC patients were in age group of 41 to 60 years old is 15 patients (88.23%), followed by the age group from 0-40 years old is 1 patients (5.88%), and from 61-80 years old: 1 patients (5.88%). From these numbers, 64.70% (11 patients) were man and 35.3% (6 patients) were women. (table 1)

Table 1. Demography

Characteristic	Number of patients	Percentage (%)
Age (year)		
0-40	1	5.88
41-60	15	88.23
61-80	1	5.88
Gender		
male	11	64.70
female	6	35.30
Total	17	100

In this study dietary factor as risk factor causing NPC were salted fish 11 patient (64.7%), 4 salted meat (23.5%) and 2 alcohol consumption (5.9%). The patient we put to consider to have risk factor from dietary intake of the food when they consumed each food at least three times per week and more than three years. (table 2).

Table 2. Dietary Intake

Food	Number of patients	Percentage (%)
Salted Fish	11	64.70
Salted Meat	4	23.50
Alcohol	2	5.90
Total		100

4. DISCUSSION

In this study, it was found that nasopharyngeal carcinoma was more common in men than women. According to a study conducted by Adham M in 2012, it was mentioned that the incidence of nasopharyngeal carcinoma was more prevalent among men than women with a ratio of 2-3:1. This explains that nasopharyngeal carcinoma is influenced by gender. In this study it was found that the majority of nasopharyngeal carcinoma patients in the 41-60 year age group with 15 patient. According to Study by Yurnadi et al., It was mentioned that nasopharyngeal carcinoma is more prevalent between the ages of 40-50 years the main cause of nasopharyngeal carcinoma is the consumption of preservative foods containing nitrosamines such as salted fish, and fish that are preserved by fumigation. In addition, environmental factors such as dirty and stuffy air and slum environments are also thought to play a role in the incidence of nasopharyngeal carcinoma [7-10].

In this study. There were 11 patient (64.7%) consumed salted fish, followed by consumed salted meat 4 patient (23.5%) and the least is alcoholic 2 patient (5.9%). Chen in 2009, an increased NPC risk with high alcohol intake is biologically plausible and consistent with well-established positive associations of alcohol intake with increased risk for other upper aerodigestive carcinomas. Ethanol has been thought to be the key compound responsible for the effect of alcoholic beverages consumption on carcinoma. Munir in 2006 found that 41 patients consumed salted fish every day and significant relationship between consumed salted fish with the type of histopathology of NPC patients. Excessive consumption of salted fish before the age of 10 was associated with an increased risk of developing nasopharyngeal carcinoma. Salted fish containing nitrosamines, also contains bacterial mutagens and components that can activate Epstein Barr virus. Consumption of salted fish that continues long periods of time can increase the incidence of nasopharyngeal carcinoma. In southern China salted fish is an early food often given by parents to infants and children due to low socioeconomic status [2, 11-15].

5. CONCLUSION

Based on the results of this study it can be concluded that nasopharyngeal carcinoma patients who come to the ORLHNS department Muhammadiyah hospital Palembang June 2017 until September 2018 as many as 17 patients with a ratio of male to female 2: 1. With the most cases occurring in the category of age 41 to 60 years as many as 15 patients. Consumption of salted fish is higher than salted meat and alcohol. Dietary intake or food are a non-viral factors that correlate in increasing the risk of NPC. Until now the highest dietary factors are salted fish (64.7%), further research is still needed as a risk factor for NPC.

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