Research

Profile of head neck cancer patients from 2013-2018 at Dr.Hasan Sadikin General Hospital Bandung

Nur Nathania, Yussy Affriani Dewi, Agung Dinasti Permana
Department of Otorhinolaryngology-Head and Neck Surgery
Faculty of Medicine, Padjadjaran University/Hasan Sadikin General Hospital, Bandung

ABSTRACT

Background: Head and neck cancer (HNC) is the 6th highest cancer worldwide. Risk factors include history of smoking, exposure of carcinogen, diet, oral hygiene, HPV and EBV infections, genetic, and alcohol consumption. **Purpose:** To identify the profile of HNC patients in the Department of Otorhinolaryngology-Head and Neck Surgery (ORL-HNS) Hasan Sadikin General Hospital Bandung from 2013 to 2018. **Method:** A retrospective descriptive study was conducted in 2013-2018 in the Department of ORL-HNS Hasan Sadikin General Hospital, using total sampling method. Medical record of the patients were used as secondary data. **Result:** There were 2952 HNC patients consisted of 1689 males and 1263 females. Most of the subjects were graduated from elementary school (45.56%), with mean age 47.45 years old. The majority types of HNC were nasopharyngeal (31.20%), sinonasal (19.65%) and laryngeal (14.16%) carcinoma. The main histopathological types were undifferentiated carcinoma (47.15%) and squamous cell carcinoma (34.08%). The major risk factors were smoking and salted fish consumptions. **Discussion:** Unlike previous studies, our study found out that most HNC cases occurred in patients under the age of 30 years old. In this research, smoking was the highest risk factor of research subjects, followed by salted fish intake, mosquito burnt coils, and alcohol consumption. Nasopharyngeal carcinoma and stadium IV were the highest incidence of HNC, mostly found in male patients. Histopathologically, the dominant type was the undifferentiated carcinoma. **Conclusion:** Nasopharyngeal carcinoma was the main cancer type. The main histopathological type was undifferentiated carcinoma. The main risk factors were smoking and salted fish consumptions.

Keywords: head and neck cancer, profile

ABSTRAK

Latar belakang: *Karsinoma kepala leher (KKL) merupakan keganasan terbanyak ke enam di dunia. Faktor risiko KKL antara lain riwayat merokok, paparan karsinogen, diet, kebersihan mulut, infeksi Human Papilloma Virus, Virus Epstein Barr, genetika, konsumsi alkohol.* ***Tujuan:*** *Untuk mengetahui profil penderita KKL di Departemen T.H.T-K.L Rumah Sakit Hasan Sadikin Bandung, tahun 2013-2018.* ***Metode:*** *Penelitian deskriptif retrospektif dengan total sampling, pada periode 2013-2018 di Dept/KSM THT-KL RSUP Dr Hasan Sadikin. Rekam medis subjek penelitian digunakan sebagai data sekunder.* ***Hasil:*** *Terdapat 2.952 penderita KKL terdiri dari 1.689 laki-laki dan 1.263 perempuan. Mayoritas berpendidikan SD (45,56%), dengan rerata usia 47,45 tahun. Jenis KKL terbanyak karsinoma nasofaring (31,20%), sinonasal (19,65%), dan laring (14,16%). Karakteristik histopatologi terbanyak karsinoma tak berdiferensiasi (47,15%) dan karsinoma sel skuamosa (34,08%). Faktor risiko terbanyak merokok serta konsumsi ikan asin.* ***Diskusi:*** *Berbeda dengan penelitian sebelumnya, penelitian kami mendapatkan kasus KKL terbanyak didapati pada pasien di bawah usia 30 tahun. Didapatkan juga faktor risiko tertinggi adalah merokok, diikuti oleh mengonsumsi ikan asin, obat nyamuk bakar, dan minum alkohol. Angka kejadian KKL terbanyak adalah karsinoma nasofaring stadium IV, yang kebanyakan didapati pada pasien laki-laki. Secara histopatologi, tipe yang dominan adalah jenis karsinoma tak berdiferensiasi.* ***Kesimpulan:*** *Karsinoma nasofaring merupakan jenis KKL terbanyak. Jenis histopatologi terbanyak karsinoma tak berdiferensiasi. Faktor risiko KKL yang paling banyak ditemui yaitu merokok dan konsumsi ikan asin.*

Kata kunci: *karsinoma kepala leher, profil*

Correspondence address: Nur Nathania, Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, Padjadjaran University/Hasan Sadikin General Hospital, Bandung. Email: nurnathania@yahoo.com.

INTRODUCTION

Head and neck cancer (HNC) is the 6th highest cancer worldwide from the upper aerodigestive track.[1,2]

Risk factors were smoking, exposure of carcinogen, diet, oral hygiene, Human Papilloma Virus (HPV) and Epstein Barr Virus (EBV) infections, genetic, alcohol consumption, food preservative, and gastro-esophageal reflux disease (GERD).[3–6] EBV infection is a dominant etiology for HNC. Non viral factors such as environment and genetic could activate EBV to bring up clinical symptoms.[3-8]

The highest incidence of HNC diagnosed in decades 6 to 7 with male to female ratio around 2:1 to 4:1.[1,9] Histopathologically, more than 90% of head and neck malignancy was epithelial in origin, and squamous cell carcinoma (SCC) was the prominent highest type.[10]

This research aims to find out the profile of HNC patients in the Department of Otorhinolaryngology-Head and Neck Surgery, Hasan Sadikin General Hospital, Bandung from the year 2013 to 2018.

METHOD

This study was a retrospective descriptive design conducted from 2013 until 2018 in the Department of Otorhinolaryngology-Head and Neck Surgery, Hasan Sadikin General Hospital, Bandung, using total sampling taken from hospital's medical record. The inclusion criteria were HNC patients from the intended year with complete medical reports.

RESULT

The general characteristic of research subjects was presented in Table 1. HNC data was presented in Figure 1 and Table 2 based on World Health Organization (WHO) 2005 Tumor Classification and American Joint Committee on Cancer (AJCC) year 2017.

Based on Table 1, the mean age of research subject was 47.45 years old with age range of 25-82 years. The research subjects were dominated by male (57.22%), education level elementary school (45.56%) followed by junior high school (14.70%), high school (26.46%), university level (4.67%), and no formal education (8.60%).

Occupation was 18.16% not working, housewives 29.74%, laborers 14.84%, private employees 8.4%, farmers 10.09%, civil servants 4.34%, retirees 3.69%, students 4.61%, others 1.05%.

Based on Table 2, the highest HNC location was nasopharynx carcinoma (NPC) 31.20%, followed by sinonasal carcinoma (SNC) 19.65%, laryngeal carcinoma 14.16%, oral cavity carcinoma 8.50%, and thyroid carcinoma 7.86%, and shown at Table 3 with the highest number was stadium IV 48.64%. Based on histopathology result at Figure 1, the majority was undifferentiated carcinoma 47.15%, followed by squamous cell carcinoma (SCC) 34.08%, and non Hodgkin malignant lymphoma 8.23%.

The highest risk factor of research subjects were smoking 41.70%, followed by salted fish consumption 23.31%, mosquito burnt coils 10.23%, and alcohol consumption 6.00%.

Table 1. General characteristics of research subjects

Variable	N=2952	%
Age (years)		
<30	594	20.12
30-34	169	5.72
35-39	223	7.55
40-44	281	9.52
45-49	312	10.57
50-54	371	12.57
55-59	329	11.14
60-64	262	8.88
65-69	176	5.96
70-74	142	4.81
75-79	57	1.93
>80	36	1.22
Median	63.29	
Mean±SD	47.45	
Range (min-max)	27-82	
Gender		
Male	1689	57.22
Female	1263	42.78
Education		
Elementary	1345	45.56
Junior High	434	14.70
High School/Vocational	781	26.46
University	138	4.67
Non educated	254	8.60
Occupation		
Housewives	878	29.74
Laborers	438	14.84
Private employees	248	8.40
Entrepreneurs	150	5.08
Farmers	298	10.09
Civil servants	128	4.34
Students	136	4.61
Retirees	109	3.69
Others	31	1.05
Not working	536	18.16

Note: Categorical data is presented in number/frequency and percentage, while numeric data is presented with average/mean, median, standard deviation, and range.

Table 2. Stadium of head and neck carcinoma

Stadium	N=2952	%
I	226	7.66
II	496	16.80
III	794	26.90
IV	1436	48.64

Table 3. Risk factor of HNC

Risk Factor	N= 2952	%
Genetic	160	5.42
Salted fish	688	23.31
Smoking	1231	41.70
Alcohol	177	6.00
Preservative food	192	6.50
Mosquito burnt coils	302	10.23
Laryngo-pharyngeal reflux	96	3.25
Wood/furniture dust	106	3.59

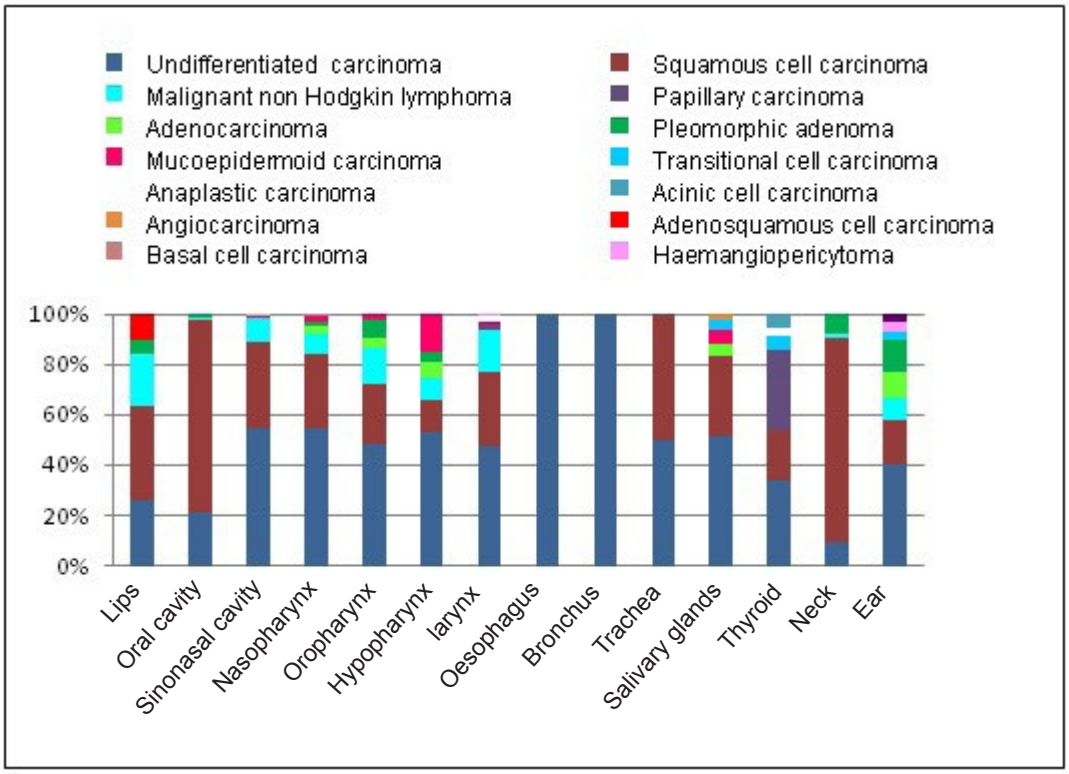

Figure 1. Histopathologycal type and location

DISCUSSION

This study analyzed 2,952 HNC medical records of the Department of ORL-HNS Hasan Sadikin General Hospital, Bandung, from the period of 2013 to 2018 complying with the study's requisite. Research subjects were in 25-82 years age range. Majority of subject's education was elementary school and profession as housewives.

This study found out that most HNC cases occurred in patients under 30 years of age. This was dissimilar from several prior researches results in 2015 and 2016 where the age range of HNC patients were 46-55 years and the mean age was 43.34 years.[4-6] Tatiana et al.[11] explained that smoking and alcohol consumption were HNC risk factors related with young adults (age ≤ 45) and older adults (more than 45 years old), although the risk was weaker in young adults due to shorter exposure. Further result of prior studies stated that in young adults the more dominant risk was genetic characteristic due to Human Papilloma Virus (HPV) in particular of oral HPV.[11] From the aspects of gender, occupation, education, HNC location, and stadium, this research's data was in line with prior studies in 2015 and 2016 resulting in male dominant, elementary school, nasopharyngeal type, and stadium IV as the highest positions of HNC incidence.[4,6] Male were more prone to oral HPV, and more exposed to cigarette smoke either as passive or active smokers.[12-13] In lower educated subjects, HNC were connected with increasing life style with smoking and alcohol consumption. Furthermore, in lower educated group, lack of etiological comprehension and low prevention had resulted in higher risk, and made them came for therapy in advanced stages.[14] HPV was known as one of risk factors of nasopharyngeal carcinoma, and HPV was also the most often etiology of HNC. This risk factor was specifically affecting the nasopharynx, so that it made cancer of the nasopharynx had the highest

incidence rate of HNC.[13] In this research, smoking was the highest risk factor of research subjects (41.70%), followed by salted fish intake (23.31%).[6] These findings were in line with a prior study at the same place in 2015 where smoking was the highest risk factor (50.7%), followed by mosquito burnt coils (43.2%), and salted fish consumption (39.7%). Smoking could increase anti-EBV serum. The escalation of anti-EBV serum happened to people who smoked more than 20 years.[7] Salted fish consumption was assumed to relate with HNC incidence because of nitrosamine embodied in it.[5,7] Mosquito burnt coils contained carcinogenic agent as formaldehyde and acetaldehyde which could irritate the upper respiratory track and bind with intracellular protein to disturb DNA and causing oncogenic mutation.[5,7]

Nasopharyngeal carcinoma and stadium IV were the highest incidence of HNC mostly found in male patients. Histopathologically, the dominant type was the undifferentiated type. The highest risk factors were smoking and salted fish consumption.

REFERENCE

1. European Society for Medical Oncology (ESMO). Clinical Practice Guidelines on Head and Neck Cancers. 2017.
2. Naomi SM, Dewi YA, Agustina H. Association between histopathological grading and clinical staging in nasopharyngeal carcinoma. J Med Health. 2018; 2(2): 730–7.
3. Union for International Cancer Control. Review of Cancer Medicines on the WHO List of Essential Medicines in Head and Neck Cancer. 2014.
4. Mirza SMS, Afriani Y, Dinasti PA, Bogi S. Epidemiology of Head and Neck Cancer Patient at Department of Otorhinolaryngology-Head and Neck Surgery DR. Hasan Sadikin General Hospital Bandung Indonesia in 2010-2014 Period. Dept. Otorhinolaryngology-Head and Neck Surgery. 2015.
5. Hardianti RA, Dewi YA, Permana AD. Faktor Risiko Karsinoma Nasofaring di RS. Hasan Sadikin Bandung. Departemen Ilmu Kesehatan Teling Hidung Tenggorok Bedah Kepala Leher. 2016.
6. Rakhmawulan IA, Dewi YA, Nasution N. Profile of Head and Neck Cancer Patient at Departement of Otorhinolaryngology-Head and Neck Surgery Dr. Hasan Sadikin General Hospital Bandung. AMJ. 2015; 2(4): 474-9.
7. Rahman S, Budiman BJ, Subroto H. Faktor Risiko Non Viral Pada Karsinoma Nasofaring. Jurnal Kesehatan Andalas. 2015; 4(3).
8. Adham M, Kurniawan AN, Muhtadi AI, Roezin A, Hermani B, Gondhowiardjo S, et al. Nasopharyngeal Carcinoma in Indonesia: Epidemiology, incidence, sign and symptom at presentation. Chin J Cancer. 2012; 31(4): 185-96.
9. Sharma TD, Singh TT, Laishram RS, Sharma L, Sunita A, Imchen LT. Nasopharyngeal carcinoma-a clinicopathological study in a regional cancer centre of northeastern India. Asian Pac J Cancer Prev. 2011; 12(6): 1583-7.
10. Koch WM, Nance M. Classification, Clinical Features, and Molecular Genetic Models. In: Olshan AF, editor. Epidemiology, Pathogenesis, and Prevention of Head and Neck Cancer. Springer; 2010.
11. Toporcov TN, Znaor A, , Zhang ZF, Yu GP, Winn DM , Wei Q, et al. Risk factors for head and neck cancer in young adults: a pooled analysis in the INHANCE consortium. Int J Epidemiol. 2015: 169–85.
12. Shaw R, Beasley N. Aetiology and risk factors for head and neck cancer: United Kingdom National Multidisciplinary Guidelines. J Laryngol Otol. 2016;130(S2):9–12.
13. Gupta B, Johnson NW, Kumar N. Global epidemiology of head and neck cancers: a continuing challenge. Oncology. 2016; 91(1): 13-23.
14. Conway DI, Brenner DR, McMahon AD, Macpherson LMD, Agudo A, Ahrens W, et al. Estimating and explaining the effect of education and income on head and neck cancer risk: INHANCE consortium pooled analysis of 31 case-control studies from 27 countries. Int J Cancer. 2015; 136 (5): 1125-39.