

CHAPTER I

INTRODUCTION

1.1. Background of The Study

Head and Neck Cancer is a complex of heterogeneous malignancies affecting different sites in the head and neck region. The malignancies in mouth, lip, tongue, salivary gland, paranasal sinus cavity, larynx, and pharynx are included in this group. Although the incidence of Head and Neck Cancer tend to be less frequent than the other cancer, the morbidity caused by this cancer might not be able to be neglected. Head and Neck Cancer causes several morbidity which affecting appearance and function (i.e. swallowing, speaking and breathing) and consequently patients may experience depression and poor nutrition.¹

The incidence of Head and Neck Cancer is associated with tobacco exposure, either via active or passive smoking and the consumption of smokeless tobacco as well. Squamous cell carcinoma (SCC) is the most common type of Head and Neck Cancer related to tobacco exposure. The most common sites for SCC are the tongue (oral or base) followed by the floor of the mouth, retro molar area, tonsils and lower lip. Alcohol consumption is also important in Head and Neck Cancer etiology. Specifically, 42% of Head and Neck Cancer deaths in low-income countries and 80% in high-income countries were due to tobacco and alcohol use. Infection of Human Papilloma Virus (HPV) 16 / 18 is also known to have implication for the occurrence of Head and Neck Cancer. In addition, a series of recent studies in economically-developed nations have described the role of

persistent infection with human papillomavirus (HPV) as an etiologic factor in the development of Head and Neck Cancer.^{1,2}

Head and neck cancer accounts for about 3% to 5% of all cancers in the United States. Worldwide, more than 500,000 people are diagnosed with these cancers every year. As stated by the National Cancer Institute (NCI), men are more than three times tend to be diagnosed with head and neck cancer than women and almost twice as likely to die from their disease.³

According to previous study which have conducted during 1998- 2002, the incidence of Head and Neck Cancer in Southeast Asia showed some variations between the country. For example, in Philippines, there were 246 cases of Head and Neck Cancer in males, and 218 cases in females. The different condition comes from Thailand, which have 160 cases in males and 104 cases in females.⁴

Another study conducted at Kariadi Hospital Semarang Indonesia, showed that the incidence of Head and Neck Cancer during January 1st 2001 – December 31th 2005 were 448 cases. Similar to other study, the ratio of men diagnosed with head and neck cancer is about 5:4, higher than women, and nasopharyngeal cancer is the most cases diagnosed in this period.⁵

However, the sustainable incidence data of Head and Neck Cancer is poorly described in Indonesia. The statistics of cancer are often conducted using the relative frequencies which cannot describe population at risk in epidemiological study, because of age and sex are not described in the data. Whereas, by knowing the distribution of sex and age in the incidence data can also indicate changes in patterns of cancer that occur every year.

With regard to this incidence rates, an evaluation of Head and Neck Cancer incidence would inform both clinicians as well as patients in cancer preventive strategy. Moreover, some cases can be analyzed, for instance: the level of public awareness in seeking medical treatment, the success rate of preventive efforts, the success rate of National Health Programs, etc. Besides, the performance and quality of health care institutions in managing the administration of the patient also can be assessed.

The implemented of National Health Insurance allows patients to obtain secondary or tertiary care in major hospitals which are common in big cities. As the capital city of the Central Java province, Semarang became the referral center of the surrounding area in Central Java. So, it would be possible that patients diagnosed with head and neck cancer are the resident from the cities around Semarang.

While previous studies have described trends in Head and Neck Cancer at some countries or hospital level, there are no large-scale epidemiological studies of head and neck cancer in Indonesia, especially in Semarang and surrounding areas. Therefore, this study tries to describe trends in rates of Head and Neck Cancer regionally with focusing on anatomic site, sex, and age. The anatomic site classifications used in this research are based on International Classification of Disease (ICD 10th) which makes the difference with the previous research.

Data for assessing the incidence of head and neck cancer are taken from several Anatomical Pathology Laboratories in Semarang; consist of Anatomical Pathology Laboratory of Kariadi Central Hospital / Medical Faculty Diponegoro

University and Waspada Laboratory. This scope of data is expected to describe the incidence of Head and Neck Cancer in Semarang and surroundings in a certain period of time. In order to describe the Head and Neck Cancer rates and changes in rates over the year this study is focusing on the incidence rates reported in recent five years period of time.

1.2.Research Question

1. How many is the incidence of Head and Neck Cancer in Semarang during 2010- 2014?
2. How many is the ASR and ASCAR of Head and Neck Cancer in Semarang during 2010- 2014 ?
3. Is there any difference in the incidence of head and neck cancer with the previous study?

1.3.Research Aims

1. To determine the incidence of head and neck cancer in Semarang in recent five years period
2. To determine the distribution of head and neck cancer based on anatomic site, age and sex by counting the Age Standardization Rates (ASR) and Age Standardization Cancer Ratio (ASCAR) score
3. To determine differences in the incidence of head and neck cancer with the prior study.

1.4. Research Benefits

1. Discovering the epidemiological data about the incidence of head and neck cancer and the distribution by age and sex in recent five years period in Semarang.
2. Obtaining data in this study can be used by government which is concerned in composing head and neck cancer prevention strategies.
3. Discovering the cancer incidence pattern each year.

1.5. Research Originality

Table 1. Research Originality

No	Articles	Methods	Result
1.	Wiliyanto, Onggo. <i>Insidensi Kanker Kepala Leher Berdasarkan Diagnosis Patologi Anatomi di RS dr. Kariadi Semarang Periode 1 Januari 2001 – 31 Desember 2005.</i> Semarang Diponegoro University; 2006	It was descriptive retrospective study using secondary data from medical record of patients of head and neck cancer, diagnosed by Anatomical Pathology Laboratory of Kariadi Hospital-Medical Faculty Diponegoro University during January 1 st 2001-December, 31 st 2005.	There were 448 cases (250 men and 198 women) of head and neck cancer. Based on the cases the nasopharyngeal cancer (112 cases or 25%) were the highest incidence and followed by lymph nodes neck cancer (111 cases or 25%). Based on age, the highest number of incidence was between 40-49 years old patients (109 cases or 25%) and followed by between 50-49 years old patients (97 cases or 21%).

2	<p>Puspita, Merry. <i>Age Standardized Rate (ASR) and Age Standardized Cancer Ratio (ASCR) of Nasopharyngeal Cancer in Kariadi Central Hospital during 2002 – 2011.</i> Semarang (Indonesia). Diponegoro University; 2012.</p>	<p>It was a descriptive retrospective research using secondary data from medical record of patients of nasopharyngeal carcinoma, diagnosed by Anatomic Pathology Laboratory of Kariadi Hospital-Medical Faculty Diponegoro University during January 1st, 2002 - December 31st 2011. Data recorded were anatomic pathology diagnose that came from tissue biopsy or surgery, age & sex which were included clearly in medical record. The collected data were analyzed by Microsoft Excel and presented descriptively.</p>	<p>There was an increase in the number of NPC patients from year 2002 until 2011, which at the beginning there was only 20 patients in 2002 but then increased to 95 in 2011. The highest number of patient is in the range of 45-49 years old with a total of 78 patients. Based on sex, the women ASR is higher than men ASR, the comparison between men ASR and women ASR in year 2002-2011 is 1:1,4</p>
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The differences of this research with the previous study are the length of period, the scope of place and methods of data analysis. This study used the data

from Anatomical Pathology Laboratory of Kariadi Central Hospital / Medical Faculty Diponegoro University and Waspada Laboratory, in 2010- 2014. Obtaining data are classified with International Classification of Disease 10th (ICD 10), and grouped and assessed by sex and certain age group every year in predetermined period using the Age Standardized Rates (ASR) and Age Standardized Cancer Ratio (ASCAR) methods.