

Lung Cancer Patients' Profile in Dr Soetomo General Hospital Surabaya 2016-2017

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ABSTRACT

Introduction: Lung cancer is the leading cause of cancer death in the world, its 5 years survival rate is only 17%, whereas its incidence is the first most in men and third in women.

Methods: This research was a descriptive observational study. The samples were 240 patients of lung cancer in Poly Oncology Dr. Soetomo General Hospital Surabaya 2016-2017. Sampling technique was non-random sampling (consecutive sampling). The variables were: age, sex, smoking habits, type of lung cancer, type of mutation, stage, symptoms, *Vena Cava Superior* syndrome, and therapy. The data analyzed were analyzed descriptively.

Results: Patients mostly at age 51-55 and 56-60 years old (18% each). Ratio men and women are 1,7:1. In all type of lung cancer, men are dominant than women and most patients are an active smoker. Epidermal Growth Factor Receptor (EGFR) mutation found in adenosquamous (75%) and adenocarcinoma (65%). Most patients diagnosed at an advanced stage. Most symptoms were a cough (70.4%), dyspnoea (50%), and chest pain (49.2%). *Vena Cava Superior* Syndrome (VCSS) found in adenocarcinoma (75%) and squamous cell carcinoma (25%). In adenocarcinoma and adenosquamous, patients commonly got targeted therapy.

Conclusion: Lung cancer still the main cause of the malignancy in the world. Lung cancer men patients tend to be exposed younger than women, with ratio men and women is 1.7:1. Most type of lung cancer is adenocarcinoma. EGFR mutation tends to be in women with adenocarcinoma. More than half of patients were an active smoker. Lung cancer patients mostly diagnosed at stage IV and the most symptoms were a cough. Patients therapy mostly with targeted therapy followed by chemotherapy.

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Introduction

Lung cancer still the main cause of the malignancy in the world, the incidence is 12.9% of all cancer diagnose and the mortality is 19.4%. In men, lung cancer also the first cause of death from malignancy in the world (mortality 23.6%) and the incidence is also first most (16.8%) in all diagnoses of cancer. In a more developed country, incidence in men is second after prostate cancer and incidence in women (8.8%) is the third after breast cancer and colorectal cancer in the world¹. In Indonesia, lung cancer incidence is first in men and the mortality is 21,8%, and in women lung cancer is third cause of death (9.1%) from cancer after breast and cervix-uterine cancer².

Lung cancer is all malignancy in the lungs, which includes malignancy from lung themselves (primary), either from bronchial or alveolar cells; or from cells that produced mucus. Based on histopathology, there are two types of lung cancer: *Non-small Cell Lung Cancer* (NSCLC) and *Small Cell Lung Cancer* (SCLC). In NSCLC include: Adenocarcinoma, Squamous Cell Carcinoma (SCC), and Large Cell Carcinoma³.

The main risk factor in lung cancer is smoking. Smoking is 80% cause of lung cancer in men and 50% in women. Other risk factors are: pollution, radon exposure, and industry (asbestos, silica, and others). Exposure to the risk factors, especially smoking is very high in Indonesia. In 2011, 66.8% Indonesian men are the smoker, while in women 3% is the smoker, so lung cancer incidence will be increase².

This research aims to know the profile of lung cancer patients in Poly Oncology Dr. Soetomo General Hospital Surabaya in 2016-2017.

Methods

This research was a descriptive observational study. The population were primary lung cancer patients in Poly Oncology Dr Soetomo General Hospital Surabaya 2016-2017 and the sample were 240 patients of primary lung cancer who went to Poly Oncology Dr Soetomo General Hospital Surabaya in 2016-2017 and have complete a medical record. Samples were obtained using consecutive sampling technique. The variables were age, sex, smoking

habits, type of lung cancer, type of mutation, stage, symptoms, *Vena Cava Superior* syndrome, and therapy. The data were analyzed descriptively. The data were grouped according to their variables and presented in frequency-distribution tables, cross tables, and/or graphs. This research has been received approval of ethical clearance from ethics commission of Faculty of Medicine Airlangga University and Dr Soetomo General Hospital.

Results

Lung cancer patient mostly at 46-70 years old (78%), while <46 years old is 13.3%, and >70 years is 10.4%. In all type of cancer (adenocarcinoma, SCC, adenosquamous, and SCLC) also most patients are in 46-70 years. Men (62.5%) is dominant than women. But in adenocarcinoma, women found in not small amounts (40%).

Most patients were active smokers (55%). The highest percentage of active smoker is in SCLC (83.8%), while in adenocarcinoma is the least (52%). The highest amount of passive smoker in adenocarcinoma (20%), but it's not found in SCLC. That were also found non-smoker patients (24%) with the highest percentage is in adenocarcinoma (27%).

EGFR positive mutation found more than half of adenocarcinoma (65%) and adenosquamous (75%). Total EGFR positive mutation is 57%. Most patients had diagnosed at stage IV in NSCLC (83%) and extensive stage in SCLC (100%) and no patients diagnosed at stage I in NSCLC and limited stage in SCLC. There were patients diagnosed at stage II and III, although there were not many.

Most symptoms were a cough (70.4%), followed by dyspnoea (50%), and chest pain (49.2%). Weight loss (16.7%), appetite loss (9.2%), hemoptysis (8.3%), and *Superior Vena Cava* Syndrome (3.3%) also found in patients. Most patients got targeted therapy (54%) and chemotherapy (42%). Targeted therapy EGFR-TKI gave in adenocarcinoma (62.6%) and adenosquamous (75%). There were patients who rejected to get therapy and choose palliative therapy. No patients got surgery and radiotherapy only.

The result is presented in table 1.

Table 1. Lung Cancer Patients' Profile in Poly Oncology Dr Soetomo General Hospital 2016-2017

	Total (n=240)	Adeno- carcinoma (n=206, 85.8%)	SCC (n=24, 10%)	Adeno- squamous (n=4, 1.6%)	SCLC (n=6, 2.5%)
Age					
<46	32 (13.3%)	29 (14%)	3 (12.5%)	0	0
46-70	188 (78.3%)	154 (75%)	20 (83.3%)	4 (100%)	5 (83%)
>70	25 (10.4%)	23 (11%)	1 (4%)	0	1 (16.7%)

Sex					
Male	150 (62.5%)	123 (60%)	19 (79.1%)	3 (75%)	5 (83.8%)
Female	90 (37.5%)	83 (40%)	5 (20.8%)	1 (25%)	1 (16.7%)
Smoking habits					
Active smoker	133 (55%)	107 (52%)	18 (75%)	3 (75%)	5 (83.3%)
Passive smoker	49 (20%)	45 (20%)	4 (17%)	0	0
Non-smoker	58 (24%)	54 (27%)	2 (8.3%)	1 (25%)	1 (16.7%)
EGFR Mutation					
Positive	136 (57%)	133 (65%)	0	3 (75%)	0
Negative	78 (33%)	73 (35%)	2 (8.3%)	1 (25%)	2 (33%)
Stage					
Stage I	0	0	0	0	
Stage II	3 (1.3%)	3 (1.4%)	0	0	
Stage III	34 (14.5%)	29 (14%)	2 (8.3%)	3 (75%)	
Stage IV	197 (83%)	174 (84%)	22 (83%)	1 (25%)	
Limited Stage					0
Extensive Stage					6 (100%)
Symptoms					
Cough	169 (70.4%)				
Dyspea	120 (50%)				
Chest pain	118 (49.2%)				
Hemoptisis	20 (8.3%)				
Weight Loss	40 (16.7%)				
Appetite Loss	22 (9.2%)				
Hoarseness	2 (0.83%)				
Lump neck	2 (0.83%)				
Back pain	8 (3.3%)				
Others	36 (15%)				
Therapy					
Surgical	0	0	0	0	0
Radiotherapy	0	0	0	0	0
Chemotherapy	101 (42%)	72 (35%)	22 (92%)	1 (25%)	0
Targeted therapy	129 (54%)	129 (62.6%)	0	3 (75%)	6 (100%)
Chemotherapy and radiotherapy	1 (0.4%)	1 (0.49%)	0	0	0
Chemotherapy and targeted therapy	3 (1.25%)	2 (0.74%)	1 (4%)	0	0
Radiotherapy and targeted therapy	1 (0.4%)	1 (0.49%)	0	0	0
Paliative	1 (0.4%)	0	1 (4%)	0	0
Reject	1 (0.4%)	1 (0.49%)	0	0	0
Source: Research Data, Processed					
* comparison between type of lung cancer					

Discussion

Based on Table 1, in all type of lung cancer, most patients were in old age, most in 46-70 years (78.3%) and men (62.5%) are dominant. Nevertheless, women patients found most in adenocarcinoma (40%). The amount of lung cancer in old age shows the risk exposure in previous years⁴ and difference in the distribution of dominant age in the developed and developing country. Women patients associated with passive smoking and home fume⁵.

Most patients are an active smoker (55%), followed by non-smoker (24%), and passive smokers (20%). This shows that smoking is the main risk factor of lung cancer⁶. There were many non-smoker patients in adenocarcinoma. Non-smoker women more vulnerable to get lung cancer than non-smoker men and smoker women more likely to get adenocarcinoma than smoker men⁷. Development and modification increase risk to adenocarcinoma because it makes deeper smoke inhalation and concentrated in peripheral lung⁸.

Positive EGFR mutation (57%) found in adenocarcinoma (65%) and adenosquamous (75%). There were many EGFR mutation found in NSCLC, especially adenocarcinoma. In the Asia Pacific, EGFR mutation is 47%, in Europe only 15%, and in the United State 23%. The difference of distribution is understood in a limited way, maybe cause of genetic potential and environment⁹. Adenocarcinoma more related to women and non-smoker, but the reason is understood in limited way⁹. EGFR mutation can also be checked in other types of lung cancer (SCC and SCLC), but in Indonesia, BPJS health insurance only covers the cost of EGRF examination for adenocarcinoma and adenosquamous. This is because EGFR mutation many found in NSCLC, especially in adenocarcinoma and adenosquamous⁹.

Most patients diagnosed at stage IV (83%) in NSCLC and in extensive stage (100%) in SCLC. There were also patients diagnosed at stage II and III, although the amount is not many. In the world, most of the lung cancer patients diagnosed at an advanced stage, this is because the symptoms of lung cancer in an early stage can be asymptomatic¹⁰ and non-specific⁸.

Most symptoms of the patients were a cough (70.4%), followed by dyspnoea (50%), and chest pain (49.2%). The symptoms as the manifestation of cancer and its location, cough is found because of a body's response due to the presence of a foreign body in the lungs^{11, 12}. The therapy for patients is based on the type of lung cancer, stage, mutation status, and individual condition. Most therapy given to patients was targeted therapy EGFR-TKI (54%), followed by chemotherapy (42%). Targeted therapy EGFR-TKI gave for patients with EGFR positive mutation.

Conclusion

Lung cancer still the main cause of the malignancy in the world. Most patients were in old age, but also can be in a young adult. Men tend to be exposed in younger than women. The ratio of men and women is 1,7:1.

Although men are more than women, many women found in adenocarcinoma. Adenocarcinoma also the most type of lung cancer. EGFR positive mutation found in adenocarcinoma and adenosquamous. EGFR positive mutation tends to be in women with adenocarcinoma. More than half of patients were an active smoker. Most patients are diagnosed at an advanced stage, although there are patients diagnosed at an early stage. Most symptoms were a cough, followed by dyspnoea, and chest pain. Patients therapy mostly with targeted therapy, especially for EGFR positive mutation, followed by chemotherapy.

CONFLICT OF INTEREST

The author stated there is no conflict of interest

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