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Research Article

Proportion of Non-smokers in Cases of Chronic Obstructive pulmonary Disease in Padang City West Sumatra

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Abstract:
Background: Chronic Obstructive Pulmonary Disease is a respiratory tract disease that is non-reversible due to chronic inflammation that occurs in the respiratory tract. The cause of COPD that has been known for a long time is smoking, but several studies have shown that people who do not smoke also suffer from COPD. This study aims to identify the proportion of COPD patients who do not smoke in the city of Padang.
Method: 50 patients who had been diagnosed with COPD at the Regional General Hospital in dr. Rashidin and the Reksosudiryo Army Hospital, Padang City were included in this cross-sectional study and conducted interviews.
Results: The Proportion of COPD non-smokers was 18% of 50 patients and smokers by 82%. Among nine non-smokers of COPD patients, the highest proportion in patients with male sex was 55.6%, aged over 60 years was 66.7% and normoweight Body Mass Index and overeight was 66.67%
Conclusion:This study concluded that people those who do not have a history of smoking can also suffer from COPD with the most cases in the elderly, men and a lower body mass index.

Keywords: Chronic Obstructive Pulmonary Disease, Indonesia, nonsmoker, padang.

Introduction

COPD is a chronic airway disease and is characterized by slow progressive air flow resistance. It is caused by exposure to risk factors such as smoking, indoor and outdoor air pollution. (Nugraha, 2013). It is estimated that in 2030, COPD will rank third as the leading cause of death (Adeloye et al., 2015; Mathers & Loncar, 2006) The prevalence of COPD in Indonesia is 3.7% of the total population and 3.0% in West Sumatra. (Naser , Medison, & Erly, 2016; RISKESDAS, 2013)

Smoking is not the only cause of COPD, some previous studies have stated that exposure to smoke using kerosene at home, dust in the workplace, or at home can be a risk factor for occurrence COPD even though the patient has never smoked (Kurmi, Lam, & Ayres, 2012; Mahmood et al., 2017; Ngahane et al., 2015) even genetic is estimated to play a role in the occurrence of diseases today (Hasni, Siregar, & Lim, 2016; Lakhdar et al., 2010).

The prevalence of COPD in the non-proxies group has been carried out several studies in various countries, in Japan by 34% (Takiguchi et al., 2018), Tunisia by 45.1% (Denguezli et al., 2016), Denmark by 22% (Thomsen, Nordestgaard, Vestbo, & Lange, 2013), Malaysia and Indonesia respectively at 21% and 27% (Salvi & Barnes, 2009). This study aims to determine the proportion of non-smokers in COPD cases in the City of Padang, Indonesia.

METHODS This

This Cross-Sectional study was conducted in May-September 2018 and included 50 patients who had been diagnosed by pulmunologists with COPD at the Regional General Hospital in dr. Rashidin and Army Hospital Dr. Reksodiwiryo, Kota Padang after carrying out information concern and signing a willingness to participate in writing. Clinical and demographic data were obtained by interview method, weight measurement, height and calculation of the Body Mass Index. Smoking history, age group, gender and body mass index group which are categorical data are presented in frequency and percentage.

Results

Table1. Distribution of Research subjects based on History of Smoking

History of Smoking	N	% of
Smokers	41	82
Non-Smokers	9	18
Total	50	100

In Table 1. shows that the proportion of research subjects suffering from non-smoking COPD was nine people (18%).

Table 2. Distribution of Non-smoker Research Subjects based on Age

Age (years)	N	%
40 - 49	1	11,1
50 - 59	2	22,2
≥ 60	6	66,7
Total	9	100

In Table 2. shows that the highest percentage of cases of COPD non-smokers at age ≥ 60 years were six people (66.7%).

Table 3. Distribution of Non Smoker Research Subjects based on Gender

Sex	N	%
Male	5	55.6
Female	4	44.4
Total	9	100

In Table 3. shows that the highest percentage of research subjects is male as many as five people (55.6 %).

Table 4. Distribution of Non Smoker Research Subjects based on Body Mass Index Body Mass

Index	N	%
Underweight	2	22.2
Normoweight	4	44.4
Overweight	2	22.2
Obese	1	11.1
Total	9	100

Table 4 shows the proportion of non-smokers COPD subjects with the most body mass index in the normoweight group for four people (44.4%).

Discussion

In this study, the proportion of non-smoking COPD cases in the study subjects was 18% of cases of COPD. This data is not much different from the data from Lamprecht's study in 2011 which reported the number of non-smoking COPD cases as much as 20.5% of total COPD sufferers (Lamprecht et al., 2011) and according to Thomsen's study which reported 22%. Thomsen et al., 2013) But this data is different from the findings of Takiguchi which is 34% and the findings of denguezli are 45.1% (Denguezli et al., 2016; Takiguchi et al., 2018).

The data of this study with 50 cases of COPD approached the results of a study conducted by Lamprecht with 4291 subjects conducted internationally because they were both cross-sectionally conducted (Lamprecht et al., 2011). In contrast to Takiguchi and Denguezli's research conducted retrospectively so that the findings of the data were different (Denguezli et al., 2016; Takiguchi et al., 2018). In contrast to Thomsen's research in Denmark, despite having a prospective method, it has the same findings as this study (Thomsen et al., 2013).

In this study, the highest number of non-smokers COPD cases in men was 55.6%, this is the same as Denguezli's findings in Tunisia that cases of non-smokers COPD were male dominated by 78.3% (Denguezli et al., 2016). Different results were obtained by Hiroto Takiguchi in Japan who stated that cases of non-smokers COPD were found in women with a 72% percentage (Takiguchi et al., 2018) and Thomsen's study in Denmark with findings of non-smoking COPD cases in women by 52%. The difference in the results of this study compared to other studies may be due to different habits in the community In Indonesia, most women live at home and rarely smoke so that exposure to cigarette smoke or other pollutants is smaller than men who are often outside the home and in the work environment which causes them to be exposed to cigarette smoke both as active and passive smokers and also exposed to pollutants in travel or because of work (Brashier & Kodgule, 2012; Ngahane et al., 2015). The presence of women at home does not mean that their exposure to COPD risk factors is low, the use of kerosene for cooking, exposure to house dust, wood dust from furniture and home cleaning habits carried out by women and the possibility of passive smoking if the couple smokes with exposure for a long time it increases the risk of women suffering from COPD although no history of smoking (Jain, Thakkar, Jain, Rohan, & Sharma, 2011) (Ntritsos et al., 2018) (Salvi and Barnes, 2009)

This study found cases of COPD are non smokers most at advanced age ≥ 60 years as much as 66.7%, this finding is in accordance with the Denguezli study which states that non-smokers COPD patients who were the subjects of their study had an average age of 62.74 ± 11.23 (Denguezli et al., 2016), in line with research Takiguchi found age at a median of 70 years (63-76) (Takiguchi et al., 2018). The proportion of non-smokers COPD patients in this study was due to a decrease in lung physiological function induced by aging factors, one of which was increasing age (Brashier & Kodgule, 2012; Naser et al., 2016).

In this study, the highest number of non-smoking COPD cases was found. 44.4%. This is in line with Thomsen's research in Denmark which states that the average body mass index of non-smokers COPD patients is 25 (23-27) which means it is included in the normoweight classification (Thomsen et al., 2013) This is slightly different from Denguezli's research which found that non-smokers with underweight had a 4x risk of suffering from COPD compared to normoweight (Denguezli et al., 2016)

Conclusion

This study found that people who did not have a history of smoking could also suffer from COPD with the most cases in the elderly, men and lower body mass index.

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