Routine asthma control, other factors and trend of perception on controlled asthma among asthma patient in a hospital in Jakarta

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Abstrak

Latar belakang: Asma merupakan masalah kesehatan yang penting di berbagai negara di dunia. Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor yang dominan berhubungan dengan penilaian diri terhadap keadaan asma pada penderita asma.

Metode: *Subjek pada studi potong lintang ini terdiri dari pasien asma yang berobat di poliklinik Rumah Sakit Persahabatan Jakarta pada tahun 2011. Wawancara dilakukan dengan menggunakan kuesioner yang berisi pertanyaan tentang data demografi (umur, jenis kelamin, pekerjaan), rutin kontrol asma, penggunaan dosis obat asma, cara menggunakan obat inhalasi, dan sumber pembiayaan. Kuesioner Asthma Control Test (ACT) juga digunakan untuk mendapatkan data tentang keterbatasan aktifitas karena asma, frekuensi mengalami sesak napas, frekuensi mengalami gejala asma pada malam hari, frekuensi pemakaian obat inhalasi, dan penilaian diri terhadap kontrol asma. Analisis regresi linear digunakan untuk menganalisis faktor-faktor yang berhubungan dengan penilaian diri terhadap kontrol asma.*

Hasil: *Pada studi terdapat 132 subjek. Rata-rata penilaian diri terhadap kontrol asma adalah 3.11±1.30. Faktor-faktor yang dominan yang berhubungan dengan penilaian diri terhadap asma terkontrol, keterbatasan aktifitas karena asma yang jarang, pemakaian obat inhalasi yang jarang, dan lebih sering kontrol asma.*

Kesimpulan: *Berkurangnya hambatan terhadap aktifitas karena asma, pemakaian obat inhalasi yang jarang dan yang lebih sering rutin kontrol asma lebih mempunyai penilaian diri yang lebih baik terhadap kontrol asma.* ***(Health Science Journal of Indonesia 2015;1:52-6)***

Kata kunci: *kontrol, penderita, asma*

Abstract

Background: Asthma remains an important health problem across the globe. This study aimed to investigate the dominant risk factors that related to perception on controlled asthma.

Methods: Methods: Subjects in this cross-sectional study consisted of patients with asthma who seek treatment at the clinic of Persahabatan Hospital Jakarta in 2011. Interviews were conducted by using a questionnaire containing questions about demographic data (age, gender, occupation), routine asthma control, the use of dose asthma medication, how to use inhaled drugs, and financing sources. Questionnaire Asthma Control Test (ACT) was also used to obtain data on activity limitation due to asthma, frequency of experiencing shortness of breath, frequency of experiencing asthma symptoms at night, frequency of use of inhaled medications, and self-assessment against asthma control. Linear regression analysis was used to analyze factors associated with self-assessment against asthma control.

Results: We had 132 subjects in this study. Mean of perception on controlled asthma was 3.11±1.30. Risk factors related to rating of self control asthma were activity limitation, rescue inhaler use and routine control asthma. Less activity limitation, less rescue inhaler use, and subject who had more frequent routine asthma control were dominant factors to perception on controlled asthma.

Conclusion: Less of the time of activity limitation, less frequent rescue inhaler use, and more frequent routine asthma control tended to be better controlled asthma. ***(Health Science Journal of Indonesia 2015;1:52-6)***

Key words: asthma control, asthma patients

Asthma is recognized as a highly prevalent health problem. Nowdays, it is estimated 300 million of people in the world suffer from asthma and it will reach 400 million people in 2025. Asthma can occur on all ages, ethnic groups, and geographic origins.[1] Patients with asthma are bothered by the symptoms (in particular cough, shortness of breath, chest tightness, and wheezing) and report considerable impairment in physical activities (such as sports, going up stairs, and shopping). They may have difficulty getting a goodnight's sleep and may be limited in their work and social life.[2]

Asthma is defined as "controlled" if the patient reports symptoms and the use of reliever medications twice per week or less, no night waking, no activity limitation or airway obstruction, and no exacerbations; "partly controlled" when symptoms or reliever use are present more than twice per week, and night waking, activity limitation, airway obstruction or exacerbations are present in any week, and "uncontrolled" with the presence of any three or more of these individual features with in any week.[3]

Uncontrolled asthma contributes to an increase in asthma symptoms, medication use, physician visits, and missed days of school and work. Most asthma costs can be attributed to uncontrolled asthma symptoms, with 80% of the direct costs distributed among approximately 20% of patients with difficult to control asthma.[4] Uncontrolled asthma has a considerable impact on patients' ability to function in life activities. Compared with patients with controlled asthma, those with uncontrolled asthma had higher risk for limitations in outdoor [odd ratio (OR) = 2.58] or physical activity (OR = 2.62), and a 66% increased risk for daily activity limitations.[5,9]

A previous cross-sectional study consisted of 29 countries of America, Europe, and Asia showed that the level of asthma control world-wide falls far short of the goals for long-term management in international guidelines. A significant proportion of patients continue to report symptoms and life style restrictions and to require emergency care. The use of anti-inflammatory preventative medication, even in patients with severe persistent asthma, was low, ranging from 26% in Western Europe to 9% in Japan.[6] More recently, the European Community Respiratory Health Survey II found that a major proportion of European adults with asthma were poorly controlled and that the majority of them were receiving suboptimal antiasthma therapy.[7]

Based on data from Ministry of Health Indonesia in 2013, the prevalence of asthma in Indonesia was 4.5%.[8] Bachtiar found that 66.9% asthma patients in Persahabatan hospital was uncontrolled asthma.[9] Several studies have examined the factors associated with asthma control. While Schatz et al.[10] found that health-care access and use was associated with poorer asthma control, Vogt et al.[11] and Bloomberg et al.[12] identified socio-economic factors (e.g., low income and Medicaid insurance) as important variables.

Asthma is a disease characterized by chronic inflammation of the airways and associated with airway hyper responsiveness resulting in episodes of wheezing, chest tightness, shortness of breath, and cough, particularly at night or in the early morning.[13]

Overall, epidemiologic studies suggest that health-care access and use, smoking status, poor adherence to doctor's advice, critical errors in inhaler use, oral corticosteroid use, and lack of regular specialist care are significant factors associated with poor asthma control.[4]

This study aimed to identify several risk factors related to perception on controlled asthma.

METHODS

We analyzed data from cross-sectional stud y that conducted in Persahabatan hospital. Sample of study was patients who was diagnosed asthma by lung specialist in asthma outpatient clinics at Persahabatan hospital in Jakarta during the period July to September 2011.

Subjects consisted of purposive selected samples who met inclusion criteria. The inclusion criteria were asthma patients aged 15 years or more, did not have other lung comorbidities-such as pneumonia, upper respiratory infections, tuberculosis, lung cancer, heart diseases, had life threatening infections or terminal illness, had severe underlying disease including immunocompromised diseases with recurrent manifestations or persistent breathlessness other than asthma; and women who were pregnant or breastfeeding, and assent informed consent. We drop incomplete data.

We used demographic questionnaire and Asthma Control Test (ACT) questionnaire in this study. The interviewers were residents of lung specialist who had trained. Interview was done during visit examination in asthma outpatient clinics in the morning till noon. We interviewed patients to answer the questioner. All patients received a full explanation of the purpose and procedures of the study. Only if the patient sign an informed consent, researchers would interviewed

subjects with a questionnaire. Family member who accompany the subject was allowed to help answer the question if the subject being an asthma attack.

The ACT questionnaire had been standardized and validated for quantify asthma control. The ACT is a patient-completed questionnaire consisted of five items: (1) investigating limitations at work or school due to asthma, (2) shortness of breath or (3) night time symptoms, (4) the use of rescue medications, and (5) the subjective perception of the level of asthma control during the previous four weeks.

We analyzed the demographic data including age, sex, type of occupation, source of cost of treatment, and five items in ACT questionnaire. In addition, we also analyzed history of asthma medicine data including routine follow up visits, the use of asthma drug doses, and how to use of inhaled drugs.

Data analysis conducted to get descriptive of the characteristics of subjects and identification dominant factors that related to rating of self asthma control using linear regression in SPPS program.

Ethical clearance was granted from the Research Ethical Commission of Faculty of Medicine Universitas Indonesia.

RESULTS

During the data collection period, 150 subjects have participated in this study, but only 132 subjects aged 15-73 years.

Table 1. Several characteristics of asthma subjects (n=132)

Characteristics	n	%
Gender		
Male	49	37.1
Female	83	62.9
Occupation status		
Active worker	62	47.0
Retired	4	3.0
Student	6	4.5
Housewife	60	45.5
Financing		
Personal	33	25.0
Insurance	95	72.0
Others	4	3.0

Table 1 shows that the subjects were more female, and active worker. Their source of financing for asthma treatment were mainly insurance.

Table 2. Several description factors associated with perception on controlled asthma

	Min	Max	Average	Standard Deviation	Coefficient of variation
Perception of controlled asthma	1	5	3.11	1.30	41.80
Age	15	73	47.17	12.540	26.58
Activity limitation	1	5	4.02	0.973	24.20
Shortness of breath	2	5	3.65	1.132	31.01
Asthma symptoms at night	1	5	3.36	1.622	48.27
Rescue inhaler use	1	5	3.29	1.454	44.19
Routine control	1	2	1.61	0.489	30.37
Dose drug	1	2	1.55	0.500	32.26
Using inhaled drug	1	2	1.55	0.500	32.26

Table 2 shows that average of perception on controlled asthma was 3.11±1.30 (somewhat control), average of age subject was 47.17±12.540, average of activity limitation was 4.02±0.973 (a little of the time), average of shortness of breath was 3.65±1.132 (3 to 6 times a week), average of asthma symptoms at night was 3.36±1.622 (once a week), and average of rescue inhaler use was 3.29±1.454 (2 or 3 times a week).

Table 3 (our final model) shows that less of the time of activity limitation, less frequent rescue inhaler use, and more frequent routine asthma control tended to be better controlled asthma.

Table 3. Dominant factors related to perception on controlled asthma (n=132)

	Regression coefficient	95% confidence interval	P
Activity limitation	0.214	0.120; 0.308	0.000
Rescue inhaler use	0.710	0.641; 0.779	0.000
Routine asthma control	0.167	0.024; 0.310	0.023
Constant	-0.144		

DISCUSSION

The purpose of study was to identify potential risk factors identify risk factors that related to perception on controlled asthma among asthma patients. Asthma incidence rate has been increasing for both male and female adults overtime with higher estimates for women.[14] Result of this study found women with asthma were higher than men. These result was consistent with Imelda[15], Pont[16], and Moy[17] that showed women have higher prevalence of asthma than men. Women are more likely to have asthma than men. The exact mechanism of this process is still uncertain. Emerging data suggest that female sex hormones play a role in these inflammatory airway conditions, through different but related mechanisms. Studies have shown that estrogen promotes a T_H2 response, while androgen promotes a T_H1 response, which may be relevant in asthma.[18]

In addition, the size of bronchial lumen in women were smaller than men. It has been suspected to be the cause of the tendency of prevalence asthma in women were higher than men. When the newborn, women's lung size were larger than men, whereas adult, men's lung size were larger than women. Besides that, genet ic, environmental and social factors also influenced differences of asthma prevalence in women and men.[19]

The average of rating of self asthma control was 3.11±1.30 (somewhat control). The higher asthma control number indicated better controlled asthma. Multivariate analysis showed that activity limitation, rescue inhaler use, and subject who had more frequent routine asthma control were dominant factors to perception on controlled asthma.

Activity limitation, emotion and social life can be experienced by asthma patient.[19] Some asthma patients may be interrupted at the time of physical activity such as sport, the rush, up stairs or go shopping. Allergens can complicate patient perform daily activities such as cleaning floors, doing everyday housework, gardening or doing hobbies.[20,21]

Routine office visits and asthma self management education are important in the management and control of asthma, while emergency department visits and urgent care visits may be indicators of poorly controlled asthma. Several studies have demonstrated an association between unscheduled urgent care visits and poor control.[22,23] This survey demonstrated a significant association between emergency room visits and poor control. More than half of the patients reported an unscheduled emergency room visit within the previous 12 months. The rate of emergency room visits was higher than that obtained in surveys in Europe[22] and in the Middle East[23] but is consistent with the rates obtained from a survey in South-West Nigeria.[24]

In conclusion, less of the time of activity limitation, less frequent rescue inhaler use, and more frequent routine asthma control tended to be better controlled asthma.

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