

# (Airflow Limitation) 가

COPD

황용일, 김영철, 이재호, 강민중, 김동규, 김수옥, 장태원, 이민기, 안영수, 유지홍, 정기석

## Symptom Questionnaire and Laboratory Findings in Subjects with Airflow Limitation: a Nation-wide Survey

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**Background:** Chronic obstructive pulmonary disease (COPD) is characterized by airflow limitation that is not fully reversible. COPD has systemic effects, such as skeletal muscle dysfunction and abnormal weight loss. It also has been suggested that COPD is related to other chronic disease, such as cardiovascular disease, osteoporosis, and anemia. The aim of this study was to evaluate a symptom questionnaire and laboratory findings in subjects with air flow limitation.

**Methods:** We evaluated a symptom questionnaire and laboratory findings in subjects with airflow limitation detected by spirometry in conjunction with the Second Korean National Health and Nutrition Examination Survey. A total of 9,243 adults over the age of 18 were recruited. Among the adults, we finally analyzed 2,217 subjects who met the acceptability and repeatability criteria of spirometry, showed normal findings on chest radiography, and were older than 40 years of age.

**Results:** There were 288 subjects with airflow limitation as determined by spirometry. The frequency of respiratory symptoms such as cough, sputum and wheezing were significantly higher in subjects with airflow limitation ( $p < 0.01$ ). Hemoglobin and hematocrit levels were higher in subjects with airflow limitation (hemoglobin level 13.98 mg/dL vs. 13.62 mg/dL, hematocrit 42.10% vs. 40.89%;  $p < 0.01$ ). The HDL cholesterol level was lower in subjects with airflow limitation (44.95 mg/dL vs. 45.60 mg/dL;  $p < 0.01$ ). There was no significant difference in the total cholesterol, triglyceride, blood urea nitrogen, creatinine, and fasting glucose levels.

**Conclusion:** In subjects with airflow limitation, prevalence of respiratory symptoms was higher than in normal spirometry subjects and the levels of hemoglobin and the hematocrit were higher. The HDL cholesterol level was lower in subjects with airflow limitation. (*Tuberc Respir Dis* 2007;63:480-485)

**Key Words:** Chronic obstructive pulmonary disease, Airflow limitation, Symptom questionnaire, Laboratory findings, Systemic effect

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2001

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. GOLD

45

2001 17.2% 7.

대상 및 방법

2001 40 2,217 .

가 52 ( 40 ~ 87 ) 1,032

가 2001 1,185 가 1,331 (60%) .

11 2002 1 200 GOLD 가 288

1994 , 가 1,929 . GOLD

7,8 . GOLD

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가 GOLD

(Total cholesterol), (BUN),

(Creatinine), (Hemoglobin),

(Hematocrit), (Glucose),

(HDL-cholesterol), (Triglyceride)

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Table 1. Experience of dyspnea on exertion and airflow limitation

	Presence of airflow limitation (n, %)		Total (n)
	Yes	No	
Experience of dyspnea on exertion			
Yes	150 (53.4%)	941 (50.9%)	1,091
No	131 (48.1%)	909 (49.1%)	1,040
Total	281	1,850	2,131

\*p=0.432.

## 결 과

9,243 8,209

4,816 1994

40 2,217 .

52 ( 40 ~ 87 ) 1,032

1,185 가 1,331 (60%) .

GOLD 가 288

, 가 1,929 . GOLD

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1 154 , GOLD 2가 111 , GOLD 3, 4가

23 .

가 288 ,

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66 (22.9%) .

가 155

29.7% 46

## 1. 기류 폐쇄 유무에 따라 호흡곤란에 관한 설문에서 어떻게 답하고 있나?

가?"

Table 2. Other respiratory symptoms and airflow limitation

	Presence of airflow limitation (n, %)		Total (n)
	Yes	No	
Sputum* (≥3 months)			
Yes	45 (15.7%)	153 (7.9%)	198
No	242 (84.3%)	1,774 (92.1%)	2,016
Total	287	1,927	2,214
Cough* (≥3 months)			
Yes	28 (9.8%)	77 (4.0%)	105
No	257 (90.2%)	1,850 (96.0%)	2,017
Total	285	1,927	2,212
Wheezing during the last year*			
Yes	21 (17.7%)	122 (6.3%)	173
No	237 (82.3%)	1,802 (93.7%)	2,039
Total	288	1,924	2,212

\*p&lt;0.01.

51.2 % 1,091

(p=0.031).

(Table 1).

2. 기류 폐쇄 유무에 따른 자각 증상은 어느 정도 가지고 있나?

3. 기류 폐쇄의 정도에 따른 호흡기 증상의 빈도에는 차이가 있나?

GOLD

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(Table 2). 가  
(p=0.026).  
가

(Table 3).

GOLD

(Table 4).

Table 3. Frequency of respiratory symptoms according to the airflow limitation

		Degree of airflow limitation (n, %)				Total (n)
		1*	2*	3* and 4*	Normal	
Experience of dyspnea on exertion <sup>†</sup>	Yes	68 (45.6%)	61 (56.0%)	21 (91.3%)	941 (50.9%)	1,091
	No	81 (54.4%)	48 (44.0%)	2 (8.7%)	909 (49.1%)	1,040
	Total	149	109	23	1,850	2,131
Sputum <sup>†</sup> (≥3 months)	Yes	17 (11.0%)	15 (13.6%)	13 (56.5%)	153 (7.9%)	198
	No	137 (89.0%)	95 (86.4%)	10 (43.5%)	1,174 (92.1%)	2,016
	Total	154	110	23	1,927	2,214
Cough <sup>†</sup> (≥3 months)	Yes	6 (3.9%)	10 (9.2%)	12 (52.2%)	77 (4.0%)	105
	No	147 (96.1%)	99 (90.8%)	11 (47.8%)	1,950 (96.0%)	2,107
	Total	153	109	23	1,927	2,212
Wheezing during the last year <sup>†</sup>	Yes	12 (7.8%)	26 (23.4%)	13 (56.5%)	122 (6.3%)	173
	No	142 (92.2%)	85 (76.6%)	10 (43.5%)	1,902 (93.7%)	2,039
	Total	154	111	23	1,924	2,212

\*GOLD stage.

<sup>†</sup>p<0.01.

Table 4. Limitation of daily activity according to the airflow limitation

		Degree of airflow limitation (n, %)			Total (n)
		1*	2*	3* and 4*	
Difficulty in walking or lifting a thing	No limitation	23 (34.3%)	17 (27.9%)	2 (9.5%)	42
	Mild limitation	33 (49.3%)	23 (37.7%)	9 (42.9%)	65
	Moderate limitation	10 (14.9%)	20 (32.8%)	8 (38.1%)	38
	Unable to walk or lift a thing	1 (1.5%)	1 (1.6%)	2 (9.5%)	4
	Total	67	61	21	149

\*GOLD stage.

p=0.027.

Table 5. Laboratory data and airflow limitation

	Airflow limitation (n)	Mean±SD
Total cholesterol (mg/dL)	Yes (286)	195.91±32.42
	No (1,889)	196.34±34.63
BUN (mg/dL)	Yes (284)	14.60±3.97
	No (1,897)	14.47±3.87
Cr (mg/dL)	Yes (288)	1.14±0.91
	No (1,918)	1.06±0.88
Glucose (mg/dL)	Yes (282)	97.93±21.65
	No (1,857)	97.01±24.14
Hemoglobin* (g/dL)	Yes (287)	13.98±1.49
	No (1,890)	13.62±1.55
Hematocrit* (%)	Yes (287)	42.10±4.29
	No (1,888)	40.89±4.10
HDL-cholesterol* (mg/dL)	Yes (285)	44.95±11.64
	No (1,898)	45.60±10.28
Triglyceride (mg/dL)	Yes (276)	157.96±85.58
	No (1,841)	149.84±80.05

\*p < 0.01.

Table 6. HDL-cholesterol, Hemoglobin and Hematocrit levels according to the airflow limitation

	Degree of airflow limitation* (n)	Mean±SD	p
HDL-cholesterol (mg/dL)	1 (154)	44,86±11,88	0,676
	2 (109)	44,66±11,27	
	3 & 4 (22)	47,05±12,10	
Hemoglobin (mg/dL)	1 (154)	14,06±1,50	0,192
	2 (111)	13,79±1,52	
	3 & 4 (22)	14,32±1,21	
Hematocrit (%)	1 (154)	42,19±4,16	0,316
	2 (111)	41,76±4,59	
	3 & 4 (22)	43,23±3,42	

\*GOLD stage.

고찰

4. 기류 폐쇄 유무에 따른 검사실 성적에 차이가 있나?

가 (Table 5).  
가 13.5 mg/dL, 12.0  
mg/dL  
가 20.8% (60 )  
12.23±  
0.98 mg/dL .  
( < 40 mg/dL)<sup>10</sup>  
가 99 (34.4%),  
가 527 (27.4%) (p=0.026).

Fabbri  
matory syndrome)

(chronic systemic inflam-

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[illegible]

## 참 고 문 헌

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