

Clinical differences of COPD patients with and without metabolic syndrome

Jesús Díez-Manglano, José Barquero-Romero, Pere Almagro-Mena, Joan B Soriano, and the ECCO study investigators.

COPD Working Group, Spanish Society of Internal Medicine

AIMS

To determine the prevalence of MS in patients hospitalized for an acute exacerbation of COPD, and the factors related with MS in this population

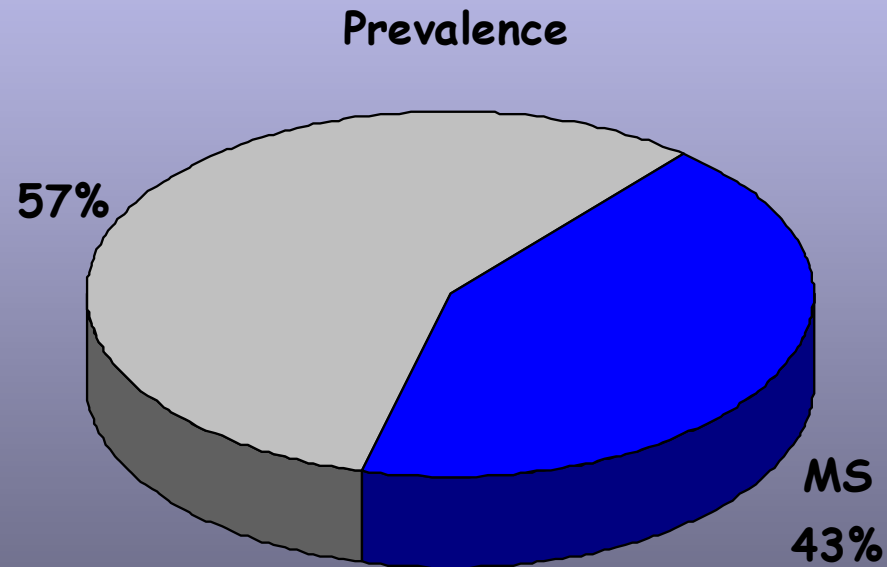
SUBJECTS AND METHODS

- Design: Observational, prospective, multicentric study participated in by 26 hospital centres throughout Spain.
- Inclusion criteria: Patients admitted with a COPD exacerbation to any of the participating Internal Medicine departments consecutively between January 1, and December 31, 2008. They were all COPD spirometry-confirmed post-bronchodilator GOLD II or higher in stable condition.
- Statistics: Data were compared using Chi² and Student *t* tests. A logistic regression model was constructed using the variables with statistical significance in the univariate analysis.

Diagnostic criteria for MS	
Obesity	BMI > 30 kg/m ²
High blood pressure	Systolic ≥ 130 mm Hg or diastolic ≥ 85 mm Hg
Hyperglycemia	Fasting glucose ≥ 100 mg/dL
Hypertriglyceridemia	≥ 150 mg/dL
Reduced HDL	< 40 mg/dL in males or < 50 mg/dL in females

RESULTS

375 patients, 333 men and 42 women, with a mean (SD) age of 73.7 (8.9) years were included. Overall, 161 (42.9%) had MS.



RESULTS

	MS (n=161)	No MS (n=214)	p
Age*	73.7 (8.3)	73.8 (9.4)	0.94
Female (%)	25 (15.5)	17 (7.9)	0.02
Smoking			
Smoker	25 (15.5)	39 (18.2)	0.09
Exsmoker	112 (69.6)	158 (73.8)	
Non-smoker	24 (14.9)	17 (7.9)	
Predicted FEV1 (%)	45.5 (12.1)	41.8 (12.4)	0.004
GOLD stage			
Moderate	65 (40.4)	62 (29.0)	0.009
Severe	84 (52.2)	117 (54.7)	
Very severe	12 (7.4)	35 (16.4)	
mMRC dyspnea			
1	1 (0.9)	2 (0.6)	0.03
2	12 (7.4)	31 (14.5)	
3	45 (27.9)	65 (30.4)	
4	57 (35.4)	81 (37.8)	
5	46 (28.6)	35 (16.4)	
Charlson index*	2.88 (1.61)	2.45 (1.83)	0.02
Comorbidities			
Osteoporosis	25 (15.5)	11 (5.1)	0.0007
Moderate kidney failure	15 (9.3)	11 (5.1)	0.11
Dementia	6 (3.7)	9 (4.2)	0.81
Coronary arterial disease	37 (23.0)	30 (14.0)	0.02
Heart failure	59 (36.6)	45 (21.0)	0.0008
Total number of exacerbations in the previous 12 months*	2.55 (2.19)	2.50 (1.88)	0.80
Total number of admissions for COPD*	3.35 (3.10)	3.16 (2.83)	0.54
Total number of admissions for any cause*	5.34 (4.61)	4.03 (3.34)	0.002
Data are presented as N (%) or mean (SD)*			

RESULTS

MS was more frequent in women.

Women had a greater number of diagnostic criteria for MS [2.74 (0.96) vs 2.25 (1.10); $p=0.006$] and had more frequently hyperglycemia).

MS component	Men (n=333)	Women (n=42)	All (n=375)
Obesity	70 (21.0)	13 (30.9)	83 (22.1)
High blood pressure	231 (69.4)	33 (78.6)	264 (70.4)
Hyperglycemia*	260 (78.1)	39 (92.9)	299 (79.7)
Hypertriglyceridemia	93 (27.9)	13 (30.9)	106 (28.3)
Low HDL	95 (28.5)	17 (40.5)	112 (29.9)
All data are presented as N (%). * $p=0.02$			

RESULTS

MS component	GOLD stage II (n=127)	GOLD stage III (n=201)	GOLD stage IV (n=47)	p
Obesity	34 (26.8)	41 (20.4)	8 (17.0)	0.27
High blood pressure	97 (76.4)	142 (70.6)	25 (53.2)	0.01
Hyperglycemia	99 (77.9)	160 (79.6)	40 (85.1)	0.58
Hypertriglyceridemia	41 (32.3)	53 (26.4)	12 (25.5)	0.46
Low HDL	19 (31.5)	63 (31.3)	9 (19.1)	0.23
Data are presented as N (%)				

Logistic regression model		
	OR (95% IC)	p
Age	0.99 (0.97-1.01)	0.46
Female	1.71 (0.85-3.42)	0.13
pFEV1 (%)	1.02 (1.00-1.04)	0.01
Osteoporosis	2.81 (1.30-6.10)	0.009
Heart failure	1.95 (1.20-3.14)	0.006
Coronary arterial disease	1.70 (0.97-2.97)	0.06

CONCLUSIONS

- MS is frequently observed in COPD patients.
- MS is associated with milder severity of COPD.
- MS is associated with more comorbidity and use of health services.