



USE OF RESPIRATORY MEDICATION IN FIVE LATIN AMERICAN CITIES: THE PLATINO STUDY

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INTRODUCTION

International efforts demonstrate the global necessity to improve the diagnosis and management of COPD and asthma. Despite the availability of several guidelines for these diseases (8-11), epidemiologic evidence suggests that COPD and asthma are frequently confused with other conditions, leading to inappropriate treatment and overprescription of respiratory medication. Current evidence indicates that developed and developing countries are experiencing overprescription, inappropriate and unnecessary use of different drugs in their health care facilities. Despite the importance of this problem, limited information exists in the field, in particular regarding the use of respiratory drugs.

OBJECTIVE

The aim of this study was to investigate the use of bronchodilators and corticosteroids and the factors associated with their receipt in a population-based study conducted in five Latin American cities.

METHODS AND MATERIALS

The PLATINO study was a population-based epidemiologic study conducted in five major Latin American cities: São Paulo, Santiago de Chile, Mexico City, Montevideo, and Caracas. Complete details of the PLATINO methodology have been published (*Lancet* 2005;366:1875-1881). To minimize the possibility of overdiagnosis, we used postbronchodilator FEV₁/FVC < 0.70 plus FEV₁<80% as the definition of obstruction. FEV₁ reversibility was defined as a postbronchodilator FEV₁ change of 200 mL or more and a change of at least 12% from the baseline value. In the present study respiratory treatment was defined as the use of any bronchodilator or corticosteroid.

Description of the Study Population

Variables	Categories	No Treatment (n= 5,269)	Any Treatment (n=302)	p-value
		n (%)	n (%)	
Age, years (mean ± SD)		56.51 ± 11.84	58.08 ± 13.23	0.046
Gender	Male	2,099 (95.8)	93 (4.2)	0.002
	Female	3,170 (93.8)	209 (6.2)	
BMI, kg/m ² (mean ± SD)		28.01 ± 5.44	28.80 ± 5.98	0.030
Race	White	2,839 (94.3)	173 (5.7)	0.275
	Nonwhite	2,412 (94.9)	129 (5.1)	
Education, years (mean ± SD)		7.51 ± 4.74	7.92 ± 4.96	0.161
Employment	No	2,402 (93.8)	158 (6.2)	0.023
	Yes	2,866 (95.2)	144 (4.8)	
Smoking, pack-years (mean±SD)		10.30 ± 18.53	13.30 ± 23.08	0.028
Smoking status	Never	2,277 (94.9)	122 (5.1)	0.095
	Former	1,443 (93.5)	100 (6.5)	
	Current	1,546 (95.1)	80 (4.9)	
Cough	No	4,239 (96.0)	163 (3.7)	<0.0001
	Yes	1,028 (88.1)	139 (11.9)	
Phlegm	No	4,358 (96.4)	165 (3.7)	<0.0001
	Yes	908 (86.9)	137 (13.1)	
Wheezing	No	4,160 (97.9)	88 (2.1)	<0.0001
	Yes	1,109 (83.8)	214 (16.2)	
Dyspnea	No	2,895 (97.7)	67 (2.3)	<0.0001
	Yes	2,312 (91.1)	226 (8.9)	
Self-reported diagnosis: COPD	No	5,100 (96.0)	215 (4.1)	<0.0001
	Yes	169 (66.0)	87 (34.0)	
Self-reported diagnosis: asthma	No	4,766 (97.5)	121 (2.5)	<0.0001
	Yes	502 (72.5)	181 (26.5)	
Self-reported diagnosis: tuberculosis	No	5,156 (94.8)	282 (5.2)	<0.0001
	Yes	112 (84.9)	20 (15.2)	
Prior spirometry (ever)	No	4,745 (96.3)	183 (3.7)	<0.0001
	Yes	522 (81.4)	119 (18.6)	
Obstructive pattern	No	4,935 (95.6)	229 (4.4)	<0.0001
	Yes	241 (78.3)	67 (21.8)	
Restrictive pattern	No	4,594 (94.6)	261 (5.4)	0.794
	Yes	433 (94.3)	26 (5.7)	
FEV ₁ reversibility	No	4,572 (95.2)	233 (4.9)	<0.0001
	Yes	334 (88.4)	44 (11.6)	
FVC, Liters (mean ± SD)		3.39 ± 0.94	3.04 ± 0.90	<0.0001
FEV ₁ , Liters (mean ± SD)		2.65 ± 0.76	2.20 ± 0.81	<0.0001
FEV ₁ /FVC (mean ± SD)		78.33 ± 8.07	71.66 ± 13.57	<0.0001
FEV ₁ reversibility, ml (mean ± SD)		85.62 ± 178.16	116.44 ± 148.26	<0.0001

Distribution of treated subjects by obstruction and FEV1 reversibility

	No Obstruction n (%)	Obstruction n (%)	Total n (%)
No reversibility	187 (67.5)	46 (16.6)	233 (84.1)
Reversibility	25 (9.0)	19 (6.9)	44 (15.9)
Total	212 (76.5)	65 (23.5)	277 (100)

Multivariate Analysis

Variables	OR	95% CI		p-value
		Low	High	
Age, yrs	0.99	0.98	1.01	0.207
Obstruction (FEV ₁ /FVC < 0.70 + FEV ₁ < 80% pred)	1.71	1.03	2.86	0.039
Self-reported COPD diagnosis	3.20	1.91	5.35	<0.0001
Self-reported asthma diagnosis	7.16	4.94	10.37	<0.0001
Prior spirometry	5.37	3.45	8.36	<0.0001
Interaction: Asthma diagnosis*Spirometry	0.39	0.21	0.70	0.002
Phlegm	1.36	0.97	1.90	0.077
Wheezing	3.78	2.75	5.21	<0.0001
Dyspnea	1.63	1.18	2.24	0.003
FEV ₁ (prebronchodilator)	0.63	0.48	0.82	0.001
Santiago (Chile)	6.70	4.59	9.79	<0.0001
Interaction: Santiago * COPD diagnosis	0.39	0.18	0.84	0.017
Mexico City (Mexico)	0.82	0.47	1.43	0.475
Montevideo (Uruguay)	0.35	0.12	0.98	0.046
Interaction: Montevideo*Wheezing	0.13	0.02	0.66	0.014
Caracas (Venezuela)	1.10	0.69	1.76	0.689

CONCLUSION

The results indicate that the use of bronchodilators and corticosteroids in persons aged 40 years or older is common. Over one-half of treated subjects were overusing these drugs (using medication for airflow obstruction without being obstructed). Prior asthma or COPD diagnosis, the presence of wheezing, prior spirometry, and residing in Santiago were more strongly associated with receiving bronchodilators and/or corticosteroids than objective measures of airway obstruction. These findings most likely reflect uncertainty on the part of diagnosing physicians, and emphasize the need for improving the implementation of obstructive pulmonary disease guidelines.