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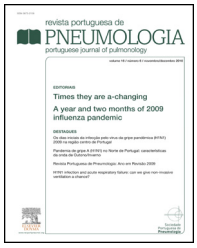

BRIEF COMMUNICATION

Asthma control in the Portuguese National Asthma Survey

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Abstract
Introduction: We aimed (1) to measure asthma control using a structure-questionnaire and patient self-perception of asthma-control in the Portuguese National Asthma Survey (INAsma) and (2) to study the relationship between asthma control and asthma-related quality of life.
Methods: We analyze data of asthma patients from a cross-sectional, nationwide telephone interview study – INAsma. Controlled asthma was defined as CARAT global score >24 or CARAT lower airways score ≥16. Mini-AQLQ was used to measure quality of life.
Results: Two hundred and seven (56.9% [95%CI: 51.8–62.0]) of the 364 patients had controlled asthma. Most patients with non-controlled asthma (88%) perceived their disease as controlled. Patients with controlled asthma presented higher mini-AQLQ scores (median, P25–P75; 6.6, 6.0–6.9) than those with non-controlled asthma (4.9, 3.7–5.7) ($p < 0.001$) and a significant positive correlation between CARAT and mini-AQLQ scores was observed ($r = 0.706$; $p < 0.001$).
Conclusion: More than half of the Portuguese patients presented controlled asthma and showed significantly better asthma-related quality of life. Almost 9 out of 10 patients with non-controlled disease have poor perception of their asthma control, which may hinder them from seeking better asthma control.

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Introduction

Proper asthma therapy and education reduces the socioeconomic burden of asthma and improves patients' quality of life.[1] However, the proportion of patients achieving asthma control remains low worldwide without substantial improvement in recent years.[2–6]

The Portuguese National Program for Asthma Control conducted by the Directorate-General of Health between 2005 and 2010, aimed to increase the proportion of asthma patients with controlled disease, and to decrease the personal and community burden of the disease.

At the end of this program, in 2010, we conducted the first Portuguese National Asthma Survey – *Inquérito Nacional sobre Asma* (INAsma), which consisted of two phases. In the first phase, aiming to evaluate asthma prevalence, we estimated that 7% of the Portuguese population had current asthma.[7] In the second phase we focused on asthma patients addressing disease control.

We aim to measure asthma control using a structure-questionnaire and patient self-perception of asthma-control in the Portuguese National Asthma Survey (INAsma) and to study the relation of asthma control with asthma-related quality of life (ARQoL).

Methods

The INAsma was a cross-sectional, nationwide, telephone interview study. Sample size calculations details have been previously reported.[7] All the participants identified with possible asthma in the first phase of the survey were eligible for participation in the second phase. Detailed information is provided in the Supplementary Material. The study was approved by the Hospital Ethics Committee of *Hospital de São João (Porto, Portugal)*.

Table 1 Socio-demographic characteristics of the participants with classification for asthma control by asthma control status and patient perception of control and asthma related quality of life.

	Total ($n = 364$)	Controlled asthma		Patient perception of control		ARQoL cut-off value	
		Yes ($n = 207$)	No ($n = 157$)	Controlled ($n = 338$)	Non-controlled ($n = 21$)	Above ($n = 188$)	Below ($n = 89$)
Sex, n (%)							
Male	155 (42.6)	111 (71.6)	44 (28.4)	146 (96.1)	6 (3.9)	79 (81.4)	18 (18.6)
Female	209 (57.4)	96 (45.9)	113 (54.1)	192 (92.8)	15 (7.2)	109 (60.6)	71 (39.4)
Age groups, n (%)							
<18 years old	87 (23.9)	59 (67.8)	28 (32.2)	82 (96.0)	4 (4.7)	0 (0.0)	0 (0.0)
18–64 years old	177 (48.6)	112 (63.3)	65 (36.7)	168 (96.0)	7 (4.0)	132 (74.6)	45 (25.4)
>64 years old	100 (27.5)	36 (6.0)	64 (64.0)	88 (89.8)	10 (10.2)	56 (56.0)	44 (44.0)
Education level[a]*, n (%)*							
<9 years	240 (65.9)	120 (50.0)	120 (50.0)	220 (92.4)	18 (7.6)	92 (57.5)	68 (42.5)
9–12 years	83 (22.8)	57 (68.7)	26 (31.3)	80 (98.8)	1 (1.2)	60 (78.9)	16 (21.1)
>12 years	41 (11.3)	30 (73.2)	11 (26.8)	38 (95.0)	2 (5.0)	36 (87.8)	5 (12.2)
SES[b]*, n (%)*							
Low	59 (16.3)	18 (30.5)	41 (69.5)	51 (87.9)	7 (5.9)	29 (49.2)	30 (50.8)
Medium low	222 (61.2)	127 (57.2)	95 (42.8)	211 (95.9)	9 (4.1)	116 (69.5)	51 (30.5)
Medium high	49 (13.5)	35 (71.4)	14 (28.6)	44 (91.7)	4 (8.3)	27 (84.8)	5 (15.6)
High	33 (9.1)	27 (81.8)	6 (18.2)	31 (96.9)	1 (3.1)	15 (83.3)	3 (16.7)
Smoking status, n (%)							
Non-smoker	274 (75.3)	153 (55.8)	121 (44.2)	255 (93.8)	17 (6.3)	121 (64.0)	68 (36.0)
Ex-smoker	53 (14.6)	33 (62.3)	20 (37.7)	46 (92.0)	4 (8.0)	39 (73.6)	14 (26.4)
Current smoker	37 (10.2)	21 (56.8)	16 (43.2)	37 (100.0)	0 (0.0)	28 (80.0)	7 (20.0)
Controlled asthma, n (%)							
Yes	207 (56.9)	–	–	201 (98.5)	3 (1.5)	137 (92.6)	11 (7.4)
No	157 (43.1)	–	–	137 (88.4)	18 (85.7)	51 (39.5)	78 (60.5)
Patient perception of control, n (%)							
Controlled	338 (94.2)	201 (59.5)	137 (40.5)	–	–	181 (70.7)	75 (29.3)
Not controlled	21 (5.8)	3 (14.3)	18 (85.7)	–	–	3 (17.6)	14 (82.4)

Asthma Related Quality of Life (ARQoL) cut-off value of 5.4.

[a] A total of 60 (2.7%) participants were preschoolers (not shown) – Data retrieved from 1st phase of INAsma.

[b] Socioeconomic Status was categorized in high (A social class), medium high (B social class), medium low (C social classes) and low (D social class) based on occupation and school education of the person who contributes more for the household income – Data retrieved from 1st phase of INAsma.