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Original Article

Factors Associated With Severe Uncontrolled Asthma and the Perception of Control by Physicians and Patients☆

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ABSTRACT

Introduction: Despite current treatments, more than half of patients with asthma are not controlled. The objective was to evaluate the correlation between control perceived by patients and physicians, compared with control evaluated according to criteria of the Spanish Guidelines for Asthma Management (GEMA), and to investigate the factors associated with that control.
Methods: Multicenter, cross-sectional, observational study including 343 patients with severe persistent asthma according to GEMA criteria seen in the Department of Pulmonology and Allergology. The correlation between asthma control perceived by the patient, the physician and according to clinical judgment based on the GEMA criteria was calculated, and a multivariate analysis was used to determine variables related to the perception of asthma control.
Results: According to GEMA criteria, only 10.2% of patients were well controlled, 27.7% had partial control and 62.1% were poorly controlled. Both the physicians and the patients overestimated control: 75.8% and 59.3% of patients had controlled asthma according to the patient and the physician, respectively, and were not controlled according to GEMA (P<.0001). Patients with uncontrolled asthma according GEMA had higher body mass index (P=.006) and physical inactivity (P=.016). Factors associated with a perceived lack of control by both physicians and patients were: nocturnal awakenings (≥1 day/week), frequent use of rescue medication (≥5 days/week) and significant limitation in activities. Discrepant factors between physicians and patients were dyspnea and emergency room visits (patients only), FEV1≤80% and a poorer understanding of the disease by the patient (physicians only).
Conclusions: Only 10% of patients with severe asthma evaluated in this study are controlled according to GEMA criteria. Patients and physicians overestimate control and the overestimation by patients is greater. Physical inactivity and obesity are associated with a lack of control according to GEMA.

Factores asociados con el asma grave no controlada y con la percepción del control por parte de médicos y pacientes

Palabras clave:
Asma
Control
Factores de riesgo
Pacientes
Guía española para el manejo del asma

RESUMEN

Introducción: A pesar de los tratamientos actuales más de la mitad de pacientes con asma no están controlados. El objetivo fue evaluar la concordancia entre la percepción de control por parte de pacientes y médicos comparado con el control evaluado según criterios de la Guía española para el manejo del asma (GEMA), así como investigar los factores asociados con dicho control.
Métodos: Estudio multicéntrico, observacional y transversal que incluyó 343 pacientes con asma grave persistente según criterios de la GEMA atendidos en consultas de neumología y alergología. Se calculó la concordancia entre control del asma según percepción del paciente, criterio clínico del médico y en

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función de criterios GEMA, y se utilizó análisis multivariante para determinar variables relacionadas con la percepción de control del asma.
Resultados: Según criterios GEMA solo el 10,2% de pacientes estaba bien controlado, el 27,7% presentaba control parcial y el 62,1% estaba mal controlado. Tanto médicos como pacientes sobrestimaron el control: el 75,8 y 59,3% de individuos con asma controlada según el propio paciente y su médico, respectivamente, no estaba controlada según GEMA ($p < 0{,}0001$). Los pacientes con asma no controlada según GEMA presentaron un mayor índice de masa corporal ($p = 0{,}006$) y más sedentarismo ($p = 0{,}016$). Los factores asociados a la falta de control percibida tanto por médicos como por pacientes fueron: despertares nocturnos (≥ **1** día/semana), uso frecuente de medicación de rescate ($p = 0$ días/semana) y limitación importante de actividades. Los factores discordantes entre médicos y pacientes fueron: disnea y visitas a urgencias (solo pacientes); **FEVI ≤ 80%** y peor conocimiento de la enfermedad por el paciente (solo médicos).
Conclusiones: Solo el 10% de pacientes con asma grave evaluados en este estudio está controlado según criterios GEMA. Tanto pacientes como médicos sobrestiman el control, con una mayor sobrestimación en pacientes. El sedentarismo y la obesidad se asocian con la falta de control según GEMA.

Introduction

The prevalence of asthma in Spain is approximately 5%.[1] Most patients have mild or moderate disease that can be controlled with relative ease. Around 10% of patients have severe asthma requiring long-term treatment with high doses of inhaled or oral corticosteroids combined with adrenergic beta-2 agonists.

Several studies have shown that, despite the availability of therapy, more than half of patients are not well controlled in clinical practice.[2,3] Asthma control was recently defined as the extent to which disease manifestations are absent or reduced to a maximum with therapeutic interventions.[4] Asthma control has acquired an important role in the management of the disease and is now considered as a reference objective in treatment guidelines. However, there may be discrepancies between physician- and patient-perceived asthma control, and between these latter and the definition of control according to the guidelines. Discrepancies appear to be less pronounced in patients with severe asthma than in those with less severe manifestation.[5]

Various risk factors associated with poor disease control have been described, including age, educational level, asthma severity and even patients' knowledge of the disease.[2,6,7] Improved awareness of these factors could lead to improved management of asthma.[8]

The aims of this study were to evaluate the correlation between physician- and patient-perceived control compared with control evaluated according to the criteria of the Spanish Guidelines for Asthma Management (GEMA), and to investigate the factors associated with perceived control.

Patients and Methods

A multicenter, observational, cross-sectional study was performed between November 2009 and May 2010 on patients seen in a specialized clinic who met the inclusion criteria. Criteria included patients aged 18 years of age or more, seen in pulmonology and allergology clinics, with spirometry performed within the previous month and persistent severe asthma diagnosed according to the GEMA guidelines[9]: i.e., continuous symptoms during the day, frequent nighttime symptoms, use of rescue medication several times a day, severe limitation of activities, forced expiratory volume (FEV1) ≤60% or ≥2 exacerbations per year. Patients participating in other clinical studies were excluded. The investigators collected study data from the patients' clinical records and from the information obtained from the patient in the single study visit.

The study was performed in accordance with the principles of the Declaration of Helsinki and Good Clinical Practice guidelines. The study protocol was approved by the ethics committee of the Hospital Clínic (Barcelona) and reported to the Spanish Agency for Medicinal Products (AEMPS). Informed consent was obtained from all participants.

The principal endpoint was physician- and patient-perceived asthma control, and control according to GEMA criteria (Table 1). In the first case, the patients were asked how they perceived their asthma control, on the basis of their opinion only. They were given 3 choices (controlled, partially controlled or poorly controlled). Physician-perceived asthma control was obtained in a similar fashion. GEMA asthma control criteria (listed in Table 1) were evaluated for each patient and the Asthma Control Questionnaire (ACQ) was self-administered by the patient on the day of the visit,[10] taking into account daytime symptoms, nighttime symptoms, limitation of activity and use of rescue medication (short-acting bronchodilators, such as salbutamol) in the previous week, and percent predicted FEV1. The only criteria that referred to the previous year (presence of exacerbations) was obtained from patient interviews and a review of clinical records.[11] Only exacerbations in which bronchial obstruction was established clinically and corticosteroids were required were taken into account, as stipulated in the GEMA recommendations. The physician recorded the latest available forced vital capacity (FVC) and FEV1 measurements in the ACQ.

Physicians also completed an *ad hoc* questionnaire with the following patient variables, and these data were used to complete the patient's clinical profile and/or were included in the subsequent multivariate analyses: (1) sociodemographic and anthropometric data; (2) physical activity (active: sport or any physical activity >3 times a week; moderately active: 2 or 3 times a week; sedentary: none); (3) smoking habit (smoker [defined as smoker in the 30 days prior to the study, including daily smokers], ex-smoker [<1 year, ≥1 year] or never-smoker); (4) asthma clinical history (date of diagnosis, number of visits to emergency room, admissions and unscheduled visits to primary care for asthma in the last year, days with nocturnal awakenings in the last 4 weeks, average use of rescue medication per week, presence and intensity of cough and/or expectoration, concomitant diseases acting as inflammatory stimuli); (5) clinical tests (FVC, FEV1, total IgE, skin prick tests); (6) current asthma treatment (beclometasone/fluticasone/budesonide/formoterol/salmeterol/montelukast/theophyllines/omalizumab/others); (7) anxiolytic or antidepressant treatment; and (8) additional evaluations (AQLQ quality of life mini-questionnaire,[12] questionnaire evaluating knowledge of asthma,[13] Hospital Anxiety and Depression [HAD] scale,[14] Nijmegen questionnaire [hyperventilation][15]).

Statistical Analysis

Qualitative or discrete quantitative variables were summarized using absolute and relative frequencies, while continuous