

Is the Incidence of Near-Fatal Asthma Decreasing in Spain?

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OBJECTIVE: A number of studies have shown that both mortality and hospital admissions due to severe asthma have decreased in recent years in many parts of the world. However, the situation in Spain has not yet been analyzed. The aim of this study was to determine the incidence of very severe, near-fatal asthma in recent years in various Spanish hospitals.

PATIENTS AND METHODS: A retrospective review of hospital records from 6 hospitals in 5 Spanish autonomous communities was conducted for the period 1997 to 2004 to determine the annual number of patients who required orotracheal intubation and mechanical ventilation due to an asthma attack.

RESULTS: Of the 130 patients included in the study, 81 (62%) were women and 61 (47%) were aged between 51 and 75 years. The number of cases observed for the periods 2001-2002 and 2003-2004 (32 and 18, respectively) was significantly lower than that observed for the 1997-1998 and 1999-2000 periods (40 in both cases; $P=0.019$). A significant increase in the incidence was observed in autumn and winter ($n=81$ [62%]; $P=0.018$). Seventeen patients (13%) died and 8 (6%) developed serious sequelae.

CONCLUSIONS: Although our sample of 6 hospitals is not widely representative of the entire population of hospitals in Spain, our findings strongly suggest a decrease in the incidence of near-fatal asthma in Spain in recent years

¿Disminuye la incidencia de asma de riesgo vital en España?

OBJETIVO: Estudios recientes muestran un descenso de la mortalidad y del número de los ingresos hospitalarios por asma grave en los últimos años en diferentes lugares del mundo. Se desconoce la situación en nuestro país. El objetivo del presente estudio ha sido determinar la frecuencia anual de las crisis de asma de riesgo vital muy grave en los últimos años en diversos centros hospitalarios españoles.

PACIENTES Y MÉTODOS: Se revisaron retrospectivamente los registros hospitalarios de los pacientes que precisaron intubación orotraqueal y ventilación mecánica por una crisis de asma en 6 hospitales pertenecientes a 5 comunidades autónomas. El estudio recogió el número anual de casos observado durante el período comprendido entre 1997 y 2004.

RESULTADOS: De los 130 pacientes incluidos, 81 (62%) eran mujeres y 61 (47%) tenían entre 51 y 75 años de edad. En los 2 últimos bienios (2001-2002 y 2003-2004) el número de pacientes recogidos (32 y 18, respectivamente) fue significativamente inferior al observado en los 2 primeros (1997-1998 y 1999-2000, con 40 cada bienio; $p = 0,019$). Se constató una incidencia significativamente mayor de casos ($n = 81$; 62%) durante las estaciones de otoño e invierno ($p = 0,018$). Fallecieron 17 pacientes (13%) y 8 (6%) presentaron secuelas graves.

CONCLUSIONES: Si bien 6 centros hospitalarios no son lo bastante representativos de la totalidad de los centros españoles, los resultados del presente estudio podrían orientar hacia un muy probable descenso en nuestro país de los casos de asma de riesgo vital en los últimos años.

Key words: Asthma. Near-fatal asthma. Orotracheal intubation. Mechanical ventilation. Asthma epidemiology.

Palabras clave: Asma. Asma de riesgo vital. Intubación orotraqueal. Ventilación mecánica. Epidemiología del asma.

Introduction

Although the prevalence of asthma increased considerably in the last decades of the 20th century,¹

recent data indicate that this trend is now stabilizing.² Accordingly, recent studies have demonstrated a clear decrease in both mortality and the rate of hospital admissions,^{1,3,4} a departure from older epidemics with high death rates. The trend is worldwide and has been observed in many distant parts of the northern and southern hemispheres.⁵⁻⁹ The reasons for the change have not yet been determined, although improved treatment and management strategies,^{5,9} stricter compliance with treatment guidelines,^{10,11} and better use of inhaled corticosteroids are all likely to have played

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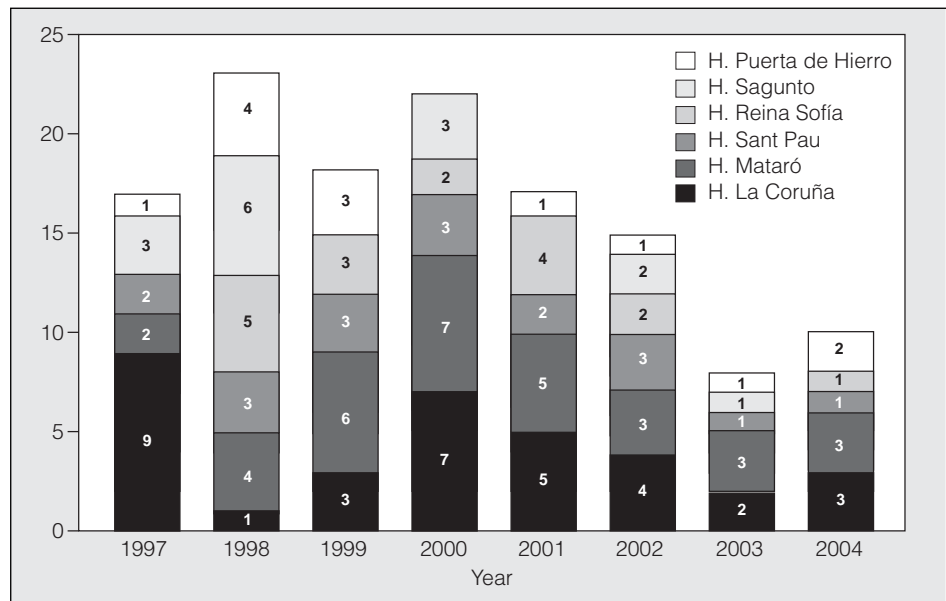


Figure 1. Number of patients who required orotracheal intubation due to very severe asthma, by year and hospital, for the period 1997-2004.

important roles. The only reliable epidemiological data available on asthma in Spain are related to prevalence¹³⁻¹⁵ and mortality.¹⁶ However, as the estimates were made in the 1990s, they do not reflect the above-mentioned downward trend.

As far as the current incidence of near-fatal asthma is concerned, there is very little information available in Spain or at the international level. To our knowledge, only one such study has been conducted and this also reported a downward trend in the number of near-fatal asthma cases.⁴ Nonetheless, the high number of cases (n=251) observed in the 33 hospitals that participated in a multicenter study of fatal and near-fatal rapid-onset asthma conducted by Plaza and colleagues¹⁷ in Spain over a 2-year-period suggested that incidence in Spain could be high. The study, however, was not designed to evaluate incidence, and its study period of just 2 years is too short to allow a retrospective estimate. The aim of the present study, however, was to discover what direction the trend of annual incidence of near-fatal asthma has been taking in Spain in recent years. To do this, we calculated the annual number of patients who required orotracheal intubation and mechanical ventilation due to an asthma attack in the last 8 years in 6 hospitals in different regions of Spain.

Patients and Methods

A retrospective, observational study was conducted to detect possible changes in the annual incidence of near-fatal asthma in recent years in different hospitals in Spain. We reviewed the hospital records of patients who required orotracheal intubation and mechanical ventilation due to a very severe asthma attack in 6 hospitals (4 tertiary care hospitals and 2 secondary care hospitals) from 1997 through 2004. The hospitals—Hospital de la Santa Creu i Sant Pau in Barcelona; Hospital de Mataró near Barcelona; Hospital Reina Sofia in Córdoba; Hospital Puerta de Hierro in Madrid;

Hospital de Sagunto in Valencia; and Complejo Hospitalario Universitario Juan Canalejo in La Coruña—were located in 5 different Spanish autonomous communities and had all participated in the aforementioned study by Plaza and colleagues.⁷

The study enrolled male and female patients who were over 13 years old, had a previous diagnosis of asthma, and were admitted to the intensive care unit (ICU) of one of the participating hospitals with a severe asthma attack that required orotracheal intubation and mechanical ventilation. Data on the following variables were collected for all of the study participants: demographic data, length of hospital stay in days, season in which attack occurred, and complications and mortality during hospitalization.

Statistical Analysis

For the descriptive analysis of the study group, all the variables were classified into 1- and 2-year periods. Data were expressed as means (SD) or percentages. Where necessary, quantitative data were compared using 1-way analysis of variance and qualitative data were analyzed using the χ^2 test. Statistical significance was set at a value of *P* less than .05. Statistical analysis was performed with the software package SPSS, version 9 (Chicago, Illinois, USA).

Results

A total of 130 patients required orotracheal intubation due to a very severe asthma attack. The annual incidence of intubation over the course of the study period showed a gradual downward trend, as can be seen in Figure. Incidence rates, percentages, and mean values for the different variables analyzed are shown in Table 1. Intubation was greater among women (*P*=.05) and 51-75-year-old patients (*P*=.001), and during the autumn and winter months (*P*=.018). The most serious complications reported were respiratory, infectious, and cardiac complications. The main sequelae were neurological and

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