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Trends in stroke hospitalisation rates and in-hospital mortality in Aragon, 1998-2010☆

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KEYWORDS
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Abstract
Introduction: Despite the impact of cerebrovascular disease (CVD) on global health, its morbidity and time trends in Spain are not precisely known.
Objective: The purpose of our study was to characterise the epidemiology and trends pertaining to stroke in Aragon over the period 1998-2010.
Methods: We conducted a retrospective, descriptive study using the data of the Spanish health system's Minimum Data Set and included all stroke patients admitted to acute care hospitals in Aragon between 1 January 1998 and 31 December 2010. We present data globally and broken down by stroke subtype, sex, and age group.
Results: The number of cases increased by 13% whereas age- and sex-adjusted hospitalisation rates showed a significant decrease for all types of stroke (mean annual decrease of 1.6%). Men and women in younger age groups showed opposite trends in hospitalisation rates for ischaemic stroke. Case fatality rate at 28 days (17.9%) was higher in patients with intracerebral haemorrhage (35.8%) than in those with subarachnoid haemorrhage (26.2%) or ischaemic stroke (13%). CVD case fatality showed a mean annual decline of 2.8%, at the expense of the fatality rate of ischaemic stroke, and it was more pronounced in men than in women.
Discussion: Understanding stroke epidemiology and trends at the regional level will help establish an efficient monitoring system and design appropriate strategies for health planning.

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PALABRAS CLAVE
Epidemiología;
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Tendencia de las tasas de hospitalización y de letalidad hospitalaria de la enfermedad cerebrovascular aguda en Aragón en el periodo 1998-2010

Resumen
Introducción: A pesar de la relevancia sanitaria de la enfermedad cerebrovascular (ECV), su morbilidad en España y sus tendencias temporales no se conocen con precisión.
Objetivo: El objetivo de nuestro estudio fue caracterizar la epidemiología del ictus en Aragón y su evolución en el periodo 1998-2010.
Métodos: Estudio descriptivo retrospectivo a partir de una base de datos extraída del Conjunto Mínimo Básico de Datos, incluyendo todas las altas por ECV de los hospitales de Aragón en el periodo 1998-2010. Se presentan los datos de manera global y separada por tipo de ictus, sexo y franja etaria.
Resultados: El número de casos aumentó un 13%, mientras que las tasas de hospitalización ajustadas por edad y sexo han mostrado un descenso significativo para el conjunto de los ictus (descenso medio anual del 1,6%). Hemos observado tendencias opuestas en las tasas de ictus isquémico entre varones y mujeres de los grupos de edad más jóvenes. La tasa de letalidad a los 28 días fue del 17,9%, y fue superior en los pacientes con hemorragia cerebral (35,8%) con respecto a los pacientes con hemorragia subaracnoidea (26,2%) e ictus isquémico (13%). La letalidad por ECV presentó un descenso medio anual del 2,8%, a expensas del descenso observado en el ictus isquémico, y fue más pronunciada en los hombres que en las mujeres.
Discusión: El conocimiento de la epidemiología del ictus a nivel regional y sus tendencias contribuirá a establecer un sistema eficiente de vigilancia y diseñar estrategias adecuadas de planificación sanitaria.

Introduction

Cerebrovascular diseases (CVDs) are the second most frequent cause of death in Spain, after myocardial infarction.[1] Some studies conducted in Spain estimate the incidence of CVDs at 120-350 cases per 100 000 person-years.[2,3] However, the incidence of CVDs and the associated mortality vary greatly between autonomous communities; this variability is mainly due to differences in the management of vascular risk factors, in socioeconomic status, and in healthcare.[4] A north—south gradient has been described, with higher mortality rates in the southern half of Spain than in the rest of the country. Mortality due to CVD in Aragon is currently similar to the national mean.[5] The region's population is particularly old, with 19.8% of inhabitants being older than 65 years (vs 16.6% in the Spanish population).[6]

CVDs constitute the first cause of disability in adults and account for 2% to 4% of national healthcare expenditure.[7,8] The social and economic burden of CVDs is rapidly increasing due to population ageing: it is estimated that by 2025, 500 000 people in Spain will have disability due to CVDs.[9] Surprisingly, the morbidity and time trends of CVDs in Spain are not precisely known, despite their great impact on the healthcare system.

Much progress has been made on stroke prevention and treatment in recent years (especially in terms of thrombolysis, endovascular treatment, specialised neurological care, and stroke units); epidemiological surveillance tools are needed to evaluate the impact of the efforts and resources allocated to CVD prevention and treatment. At present, the only epidemiological data on CVD progression available in our setting is from mortality statistics and data drawn from the results of the Spanish hospital morbidity survey; although these data are relevant, they are insufficient for the epidemiological surveillance of CVDs. Data from international studies (as well as a limited number of studies conducted in Spanish populations) cannot be extrapolated to our setting as most incidence studies focus on small urban areas and are therefore not representative of the general population.

Objective

We aimed to study the time trends of hospitalisation and in-hospital case fatality due to acute CVD in Aragon in 1998-2010, using the minimum basic dataset (MBDS).

Patients and methods

We conducted a retrospective, descriptive study using hospital-based administrative data (MBDS).

Sample and inclusion/exclusion criteria

We accessed a database of discharges of patients with CVD from the MBDS of all hospitals in the autonomous community of Aragon; the database included data from the period