



ORIGINAL ARTICLE

Analysis of cerebrovascular mortality trends in Spain from 1980 to 2011[☆]



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KEYWORDS

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Abstract

Introduction: In recent decades, mortality rates for cerebrovascular diseases (CVD) have declined significantly in many countries. This study analyses changes in CVD mortality rates in Spain (1980-2011) to determine if previously observed trends remain.

Patients and methods: Data on CVD mortality rates and the population data needed for the analysis were provided by Spain's National Statistics Institute. We calculated age-specific mortality rate, age-standardised overall mortality, and age-truncated mortality (35-64 years) using the direct method and standard European population structure. Joinpoint analysis was used to estimate the percentage of annual change in rates and identify significant changes in trends.

Results: CVD mortality rate decreased considerably and continuously over the last 32 years in all age groups and in both sexes in Spain. For both sexes, joinpoint analysis identifies a final period with more marked decline: 2005-2011 in women (−6.3%) and 2007-2011 in men (−7.2%).

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PALABRAS CLAVE

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Tendencia

Conclusions: CVD mortality rates displayed a marked and continuous decline in Spain between 1980 and 2011. Due to the ageing of the population, doctors expect an increase in CVD prevalence and therefore its magnitude in terms of disability and healthcare costs, which poses a challenge to our health system.

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Análisis de las tendencias en la mortalidad por enfermedades cerebrovasculares en España 1980-2011

Resumen

Introducción: En las últimas décadas las tasas de mortalidad por enfermedades cerebrovasculares (ECV) han descendido de forma importante en muchos países. En este estudio se analizan los cambios recientes en la evolución de la mortalidad por ECV en España (1980-2011) para verificar si las tendencias observadas previamente continúan.

Pacientes y métodos: Los datos de mortalidad por ECV y las poblaciones necesarias para el cálculo de los indicadores fueron facilitados por el Instituto Nacional de Estadística. Se calcularon las tasas específicas por grupos de edad y estandarizadas globales y truncadas (35-64 años) mediante el método directo (población estándar europea). Mediante análisis de regresión «joinpoint» estimamos el porcentaje de cambio anual de las tasas e identificamos puntos de cambio significativos en la tendencia.

Resultados: La mortalidad por ECV se ha reducido de forma contundente y sostenida en los últimos 32 años en todos los grupos de edad y sexo en España. En ambos sexos el análisis joinpoint identifica un periodo final de mayor descenso (2005-2011 [$-6,3\%$] en mujeres y 2007-2011 en varones [$-7,2\%$]).

Conclusiones: Existe un marcado y continuo descenso en la mortalidad por ECV en España (1980-2011). Teniendo en cuenta el proceso de envejecimiento de la población, es esperable un incremento de la prevalencia y, por ello, de la magnitud de las ECV medida en términos de discapacidad y costes de salud, lo que representará un gran reto para nuestro sistema sanitario. © 2014 Sociedad Española de Neurología. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

Although mortality rates for cerebrovascular diseases (CVD) have decreased significantly in many countries over the past few decades,¹ the global burden of stroke is still a major concern as this entity is the second leading cause of death² and the third cause of disability in the world.³ Furthermore, 40% of stroke patients have poor outcomes (death, dependency, or institutionalisation 3 months after stroke).⁴

In Europe, CVD mortality rates are increasingly dissimilar between countries; in fact, four-fold differences have been observed between some countries, and current trends are also highly divergent. The countries which had attained low mortality rates by the end of the 20th century experienced further declines, while mortality rates in the countries with moderate to high stroke mortality during the 1990s experienced an unprecedented increase.⁵

Due to the progressive ageing of the population and the increased prevalence of the main risk factors (arterial hypertension, diabetes, obesity, etc.), a further increase in CVD incidence is expected, with rates doubling by the year 2020.^{5,6}

In Spain, CVD mortality started to decrease in 1973 in men and a year later in women.⁷ Rates declined faster during

the 1990s, particularly in older age groups.⁸ There are still significant geographical differences, with very low rates in Castile-Leon, and very high rates in Murcia, the Valencian Community, and Andalusia.⁹

In light of the above and given the need for updated epidemiological data regarding stroke, we decided to analyse recent changes in CVD mortality rates in Spain (1980-2011) to confirm whether previously observed trends persisted.

Patients and methods

Age- and sex-adjusted mortality data were obtained from information published by Spain's National Statistics Institute between 1980 and 2011. We have used CVD deaths (codes 430-438 and I60-I69 of the ninth and tenth editions of the International Classification of Diseases for the periods 1979-1998 and 1999-2008, respectively) and the populations estimated by Spain's National Statistics Institute as of 1 July of each year in our analysis.

For each sex, we calculated age-specific rates, and overall (all ages) and truncated (35-64 years) age-standardised rates using the direct method and the European population

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