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Impact of Assigning Heart Failure as the Underlying Cause of Death on the Calculation of Premature Mortality Due to Cardiovascular Disease in Spain

Impacto de la asignación de la insuficiencia cardiaca como causa básica de defunción en el cálculo de la mortalidad prematura cardiovascular en España

To the Editor,

The description and detailed evaluation of the extent and distribution of diseases, while recognizing their specific epidemiological and etiological characteristics, are important for establishing strategies to improve the health of the general population.1,2 Disease burden measures the health losses in the population that represent the fatal and nonfatal consequences of diseases and their risk factors. Specifically, the Global Burden of Disease study was the first to establish a standardized measure for measuring premature mortality [years of life lost (YLL)], a component of the synthetic indicator disability-adjusted life-years, which allows assessment of changes in the health of the general population.1–3 We used a classification of disease burden based on an etiological perspective, grouping the codes of the International Classification of Diseases (ICD) into different groups and categories in order to study disease burden. From this perspective, within the category of cardiovascular disease, heart failure (HF) as an underlying cause of death is included in the so-called garbage codes or ill-defined codes.1,4

Applying the methods described in the Global Burden of Disease study, we quantified the potential impact of deaths coded as HF on calculation of YLL due to cardiovascular disease in 2008 in Spain. Mortality data were obtained from anonymized microdata files from the Spanish National Institute of Statistics for deaths coded to ICD-10 codes: 150 (150.0, 150.1, and 150.9); The denominators were obtained from the current population estimates published by the Spanish National Institute of Statistics. Proportional reallocation was conducted by age and sex for deaths assigned to the ill-defined codes group (ICD-10, group R). The YLL attributed to HF were calculated by age and sex groups taking the Princeton West model life table (level 26 modified) as the reference.1 Social values (age-weighted [κ=1] and the discount rate [3%]) were included, as proposed in this methodology.1 All calculations were performed using the GesMor software package. In 2008, there were 126 252 deaths from cardiovascular diseases, of which 17% were attributed to HF (5% of total deaths in Spain). The crude mortality rate due to HF was 46/100 000 (31.6 men and 60.0 women) and rate adjusted to the standard European population was 23.6/100 000 (22.6 men and 23.3 women). Of the total YLL due to cardiovascular disease (504 091), 12% (60 339) were attributed to HF (9% men and 16% women). The proportion of YLL assigned to HF in relation to all cardiovascular diseases increased with age and was higher among women than men in all the age groups studied, reaching 24% of women ≥85 years (Table). The proportion of deaths due to cardiovascular causes assigned to HF in Spain is higher than that observed in other countries such as Spain, with total premature mortality (YLL) due to cardiovascular disease increasing from 890 000 deaths in 2000 to 1 041 000 in 2013.

Table

<table>
<thead>
<tr>
<th>Age groups, years</th>
<th>Heart failure</th>
<th>Cardiovascular disease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td></td>
<td>Deaths</td>
<td>YLL</td>
</tr>
<tr>
<td>&lt;60</td>
<td>452 (2)</td>
<td>8219 (45)</td>
</tr>
<tr>
<td>60-64</td>
<td>193 (17)</td>
<td>1965 (174)</td>
</tr>
<tr>
<td>65-69</td>
<td>253 (28)</td>
<td>2806 (334)</td>
</tr>
<tr>
<td>70-74</td>
<td>491 (59)</td>
<td>2806 (334)</td>
</tr>
<tr>
<td>75-79</td>
<td>920 (129)</td>
<td>3679 (516)</td>
</tr>
<tr>
<td>80-84</td>
<td>1516 (331)</td>
<td>4059 (887)</td>
</tr>
<tr>
<td>≥85</td>
<td>3291 (1099)</td>
<td>4192 (1400)</td>
</tr>
<tr>
<td>Total</td>
<td>7115 (32)</td>
<td>26 890 (119)</td>
</tr>
</tbody>
</table>

YLL, years of life lost.

Data are expressed as No. (rate per 100 000 population).

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