Declining trends of mortality from ischemic heart disease in European Union 28 countries from 2011 to 2017

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Aims: We sought to analyze the mortality trend due to ischemic heart disease (IHD) in Europe between 2011 and 2017.

Methods: We used the free publicly available EUROSTAT death certificate database to examine age-adjusted IHD mortality rates (per 100,000 people) and relative average annual percentage change (AAPC) across all European Union 28 countries (EU28) from 2011 to 2017 using the International Classification of diseases, Tenth Revision (ICD-10) codes I20-I25. Deaths occurring before the age of 65 were defined as premature deaths. To calculate annual trends in IHD-related mortality, we assessed the average annual percent change (AAPC) and relative 95% confidence intervals (CIs) using Joinpoint regression analysis (Joinpoint Regression Program version 4.9.1.0 (National Cancer Institute, Bethesda, USA).

Results: Over the study period, 4,478,563 deaths (2,386,442 males) due to IHD occurred in EU28. Age-adjusted IHD death rates steadily decline over the study period from 139.9 to 118.2 per 100,000 people [AAPC: -3.0 (95% CI: -3.8 to -2.2), p<0.0001]. Such reduction was more pronounced in women (from 186.6 to 161.1 per 100,000 people) [AAPC: -3.6 (95% CI: -4.6 to -2.5), p<0.001] than in men (from 105.4 to 86.4 per 100,000 people) [AAPC: -2.6 (95% CI: -3.2 to -2.0), p<0.001] (Figure 1). Moreover, age-adjusted IHD death rates resulted higher in subjects age ≥65 years old; however, a more pronounced decrease was observed in those <65 years (from 21.3 to 17.8) [AAPC: 3.0%, 95% CI: -3.5 to -2.6], p<0.0001] compared to those age ≥65 years old (from 626.3 to 532.4) [AAPC: -2.7%, 955 CI: -3.3 to -2.0), p<0.0001).

Conclusions: In EU28, IHD-related mortality declined from 2011 to 2017, especially in women and in subjects aged <65 years old.

Figure 1. Trends in age-adjusted ischemic heart disease mortality rates per 100,000 among subjects living in European Union 28 countries from 2011 to 2017, also stratified by gender.