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CORONARY ARTERY DISEASE

Variation in ischaemic heart disease between EU countries

Fausto J. Pinto

Ischaemic heart disease (IHD) causes a large number of deaths in the European Union, but a new study reveals important inequalities in IHD mortality between countries. Surveillance systems might help to identify these differences and define tailored treatment strategies, so that the burden of IHD can be reduced across Europe.

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In a new study, Nichols and colleagues analyse sex-specific and age-specific trends in mortality from ischaemic heart disease (IHD) between 1980 and 2009 in the European Union (EU).[1] The investigators did not find substantial evidence that the reduction in IHD mortality in individuals aged <45 years is plateauing. Nichols *et al.* did, however, show an important and persistent inequality in IHD mortality between European nations, which emphasizes the need for EU member countries to work together to reduce preventable risk factors for this prevalent condition.

Cardiovascular diseases are the main cause of mortality in almost all EU member countries, accounting for 36% of all deaths in the region in 2010, according to the latest statistics published by the Organisation for Economic Co-operation and Development.[2] Cardiovascular diseases cover a range of conditions related to the circulatory system, including IHD and cerebrovascular disease, which together account for 60% of all cardiovascular deaths, and caused more than one-fifth of all deaths in EU member countries in 2010.[2] IHD alone led to 13% of all deaths,[2] but IHD mortality varies considerably between countries (Figure 1). Baltic countries have the highest mortality from IHD: Lithuania for both men and women, followed by Latvia, Slovakia, and Estonia.[2] Mortality from IHD is also relatively high in Finland and Malta, with rates several times higher than in France, the Netherlands, Portugal, and Spain.[2]

Regional patterns in the variability of IHD mortality exist. Except for Luxembourg and the Netherlands, the four countries with the lowest IHD mortality are located in southern Europe: France, Italy, Portugal, and Spain, with Cyprus and Greece also having low rates.[2] This trend supports the commonly held hypothesis that underlying risk factors, such as diet, might explain differences in IHD mortality between countries. Across EU member countries, IHD mortality in 2010 was, on average, nearly twofold higher in men than in women.[2] This disparity was greatest in Cyprus, France, and Luxembourg, with IHD mortality twofold to threefold higher in men than in women, whereas in Malta, Romania, and Slovakia, IHD mortality was only 60% higher in men than in women.[2]

Since the mid-1990s, IHD mortality has declined in nearly all countries. This decline has been most marked in Denmark, Ireland, the Netherlands, and the UK.[2] Estonia and Norway also saw IHD mortality cut by half or more, although the rate in Estonia remains high.[2] Declining tobacco consumption contributed substantially to reducing the incidence of IHD and, consequently, to reducing mortality. Reductions in IHD mortality in Hungary, Poland, and Slovakia have been moderate, at <20%.[2,3]

Data from an important French registry, the FAST-MI,[4] show that 30-day mortality from ST-segment elevation myocardial infarction (STEMI) decreased by 68% over 15 years. Although this reduction parallels improvements in care, such as increased use of primary percutaneous coronary intervention and adjunctive therapies, the decrease was also associated with a substantial

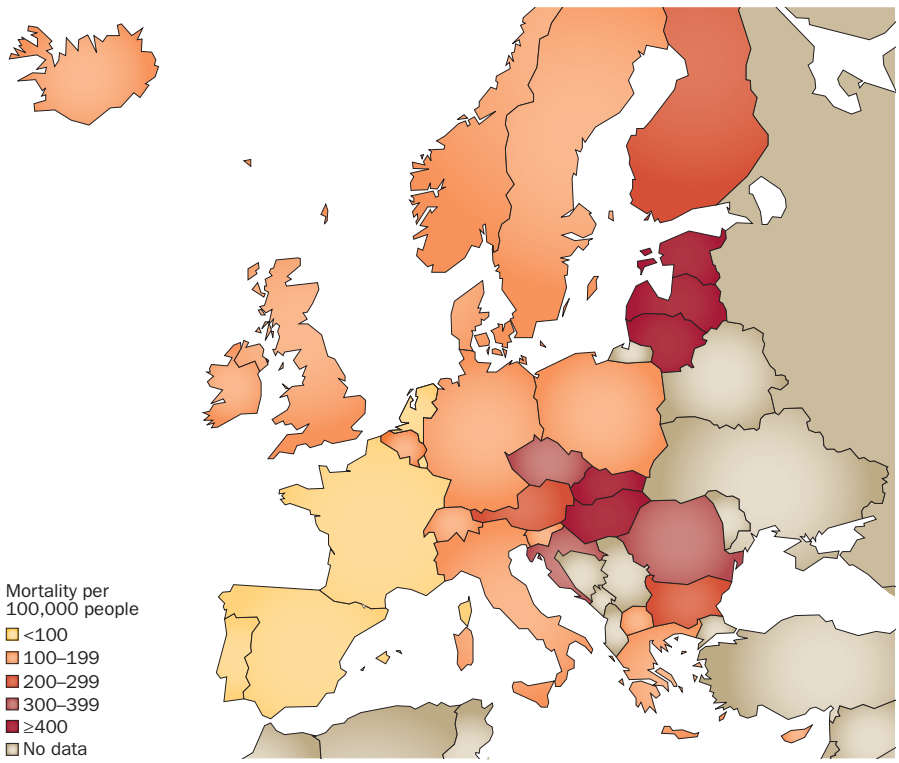

Figure 1 | Mortality from ischaemic heart disease in European countries. Figures are the age-standardized rate per 100,000 of the population in 2010 (or nearest available year). Data from the Eurostat statistics database.

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change in patient risk profiles. The proportion of older patients (aged ≥45 years) has decreased, whereas the proportion of younger patients (aged <45 years) of both sexes has increased. As the researchers note, these observations suggest that future reductions in the incidence of, and mortality from, acute myocardial infarction will need specific targeting of preventive measures towards young women, and possibly young men.[4] During the 15-year period of the registry, profound changes in the characteristics of the patient population with acute myocardial infarction occurred, with presentation at a younger age, particularly in women. The increased proportion of young patients was mirrored by a reduction in the proportion of patients aged 60–74 years (from 39.3% to 31.3%), whereas the proportion of patients aged ≥75 years was less affected (change from 30.0% to 25.5%).[4] This decrease in the number of patients aged ≥60 years with STEMI is consistent with population-based epidemiological data showing a progressive decrease in the mean age of patients hospitalized with acute myocardial infarction in several countries.[5,6] In the FAST-MI registry, the proportion of women aged <50 years who were hospitalized with STEMI increased considerably (3.7% to 11.1%),[4] which is consistent with the increase in smoking among this cohort of the French population during the past 30 years.[7]

The relationship between prevention strategies and both cardiovascular events and mortality is clearly established.[8] Therefore, the efficacy of primary prevention programmes in patients with recognized, treatable risk factors, such as hypercholesterolaemia, hypertension, diabetes mellitus, and smoking, should be a priority across EU countries. Data from the study by Nichols and colleagues on the differences between countries might suggest the need for a tailored approach, which reinforces the need for surveillance systems to monitor the demand for, and application of, preventive measures. Such strategies are of crucial importance for a successful fight against inequalities between EU countries in access to appropriate health care. Scientific societies can help with the dissemination of information and the promotion of activities to both populations and health-care decision-makers.[9]

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Competing interests
The author declares no competing interests.

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