



ORIGINAL ARTICLE

Disability-adjusted life years lost due to ischemic heart disease in mainland Portugal, 2013



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KEYWORDS

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Abstract

Introduction and Objectives: Estimates of the burden of ischemic heart disease (IHD), including geographic differences, should support health policy decisions. We set out to estimate the burden of IHD in mainland Portugal in 2013 by calculating disability-adjusted life years (DALYs) and to compare this burden between five regions.

Methods: Years of life lost (YLLs) were calculated by multiplying the number of IHD deaths in 2013 (Statistics Portugal) by the life expectancy at the age at which death occurred. Years lived with disability (YLDs) were computed as the number of cases of acute coronary syndrome, stable angina and ischemic heart failure multiplied by an average disability weight. Crude and age-standardized DALYs (direct method, Standard European Population) were calculated for mainland Portugal and for the Northern, Central, Lisbon, Alentejo and Algarve regions.

Results: In 2013, 95 413 DALYs were lost in mainland Portugal due to IHD. YLLs accounted for 88.3% of the disease burden. Age-standardized DALY rates per 1000 population were higher in men than in women, across the entire country (8.9 in men; 3.4 in women) and within each region, ranging from 7.3 in the Northern and Central regions to 11.8 in the Algarve in men, and from 2.6 in the Northern region to 4.6 in Lisbon in women.

Conclusions: Nearly 100 000 DALYs were lost to IHD in Portugal, mostly through early mortality. This study enables accurate comparisons with other countries and between regions; however, it highlights the need for population-based studies to obtain specific data on morbidity.

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PALAVRAS-CHAVE

Anos de vida saudável perdidos;
Doença isquêmica do coração;
Portugal

Anos de vida saudável perdidos devido a doença isquêmica do coração em Portugal continental em 2013

Resumo

Introdução e objetivos: A carga de doença atribuível à doença isquêmica do coração (DIC), nomeadamente possíveis diferenças regionais, deve orientar políticas de saúde. Pretendemos estimar a carga de doença atribuível a DIC em Portugal continental em 2013, através do cálculo dos anos de vida saudável perdidos (DALY) e comparar estas estimativas entre regiões.

Métodos: Calcularam-se os anos de vida perdidos (YLL) multiplicando o número de mortes por DIC em 2013 (Instituto Nacional de Estatística) pela esperança média de vida à idade da morte. Estimaram-se os anos vividos com incapacidade (YLD) através do número de casos de síndrome coronária aguda, angina estável e insuficiência cardíaca isquêmica. Os DALY brutos e padronizados para a idade (método direto, população-padrão europeia) foram calculados para Portugal continental e para as regiões Norte, Centro, Lisboa, Alentejo e Algarve.

Resultados: Em 2013, perderam-se 95 413 DALY em Portugal por DIC. Destes, 88,3% foram por morte prematura. A taxa de DALY perdidos por 1000 habitantes padronizada para a idade foi mais elevada nos homens em todo o país (8,9 nos homens; 3,4 nas mulheres) e em cada região, variando de 7,3 no Norte e Centro até 11,8 no Algarve nos homens, e de 2,6 no Norte a 4,6 em Lisboa nas mulheres.

Conclusões: Quase 100 mil DALY foram perdidos em Portugal devido a DIC, essencialmente por mortalidade prematura. Este estudo permite comparar a carga de doença com outros países e entre regiões, salientando-se, no entanto, a necessidade de estudos de base populacional que forneçam informação específica de morbilidade.

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Introduction

Ischemic heart disease (IHD) remains a leading cause of death worldwide.^{1,2} However, the case-fatality rate of acute myocardial infarction has decreased markedly,³ resulting in a growing population of survivors with disability due to angina, recurrent infarction or ischemic heart failure. Furthermore, the growth and aging of populations means the absolute number of people living with IHD is expected to increase.¹

IHD mortality in Portugal has decreased markedly over the last three decades, as in most developed countries.⁴ Using the IMPACT IHD mortality model, we previously estimated that the proportional contribution to the decline in IHD death of the use of treatments to reduce case fatality, compared to the contribution of favorable risk factor changes, was larger than in other countries.⁵ This reflects high-quality coverage of sophisticated medical interventions but less effective primary prevention, which also contributes to the prevalence of IHD-related disability in the Portuguese population.

Disability-adjusted life years (DALYs) are a health gap measure that combines both time lost due to premature mortality and non-fatal conditions, and are calculated as the sum of years of life lost (YLLs) due to premature mortality and years lost due to disability (YLDs).^{6,7} Calculating the burden of IHD is challenging taking into account its different clinical presentations, including myocardial infarction, angina and heart failure, which raises methodological concerns regarding the large amount of information needed and

the lack of registries in many countries,⁸ including Portugal. According to the 2010 Global Burden of Diseases, Injuries and Risk Factors (GBD) study, IHD is one of the top three causes of DALYs in Portugal, along with low back pain and cerebrovascular disease,⁹ but without estimates of absolute DALYs, YLLs and YLDs numbers, ranking positions alone do not enable results to be compared between countries, and more detailed and updated information are required.

Previous reports on mortality time trends and global estimates of the burden of disease due to IHD in Portugal have considered overall national data. However, there is considerable variability within the country in rates of mortality and hospital admissions of patients with IHD, possibly reflecting differences in economic and social development and urbanization.¹⁰ This variability can be expected to impact access to health care and the efficiency of the health system in dealing with IHD, and if differences are found in DALYs across regions, this may support a readjustment of recommendations and allocation of healthcare resources.

Therefore, our aim was to estimate the burden of IHD in mainland Portugal in 2013 by calculating DALYs and to compare this burden between five regions of the country: North, Central, Lisbon, Alentejo and Algarve.

Methods

Based on the GBD 2010 study,¹¹ we calculated the burden of IHD, considering that it may result in death or three general clinical presentations: acute coronary syndrome (myocardial infarction and unstable angina), stable angina, and ischemic

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