

The Unfortunate Shadow of Ischemic Heart Disease

Jaume Marrugat

Unitat de Lípids i Epidemiologia Cardiovascular, Institut Municipal d'Investigació Mèdica (IMIM), Barcelona, Spain.

"...shadows are incapable of explaining light and between shadows and light there is the opaque body from which words are born..."

José Saramago.

The Gospel According to Jesus Christ

In this issue, Boix et al report that over the last decade, mortality due to ischemic heart disease has followed the trend typical of the last 30 years, that is to say, it has decreased in Spain as a whole when analyzed with linear regression techniques. If we look at the Spanish provinces, we can verify this trend by using a different statistical technique (I cannot help asking myself why the analyses should differ). So, we find that the provinces that show a decrease in mortality are in the overwhelming majority, although few changes are statistically significant.¹

These data, presented in this fashion, are consistent with results of analyzing the efficiency of the Spanish Health service.^{2,3} However, they do not show what we know about population as a whole: throughout the industrialized world the majority of patients who die as a result of ischemic heart disease do so before they reach the hospital.^{4,5}

Where then, can we say that mortality due to ischemic heart disease is concentrated? To be more precise, we need to ask: within what age range? Which sex? Which of Spain's 17 autonomous regions has the highest mortality rate? What are the factors that determine these differences? Where do the victims die? Why does mortality due to ischemic heart disease vary more from country to country than it does from region to region? What role does the Health service play in these variations? Clearly, the article by Boix et al does not resolve these enigmas—it is not intended to, nor could it. No one is currently in a position to do this. Consequently, we can only speculate about the

information published.

Traditionally, we have studied the incidence of myocardial infarction in the population aged between 35 and 64 years, and in some cases, in the population ranging from 25 to 74 years of age. In exceptional cases we have studied older populations. The data for Spain show that the incidence and mortality caused by ischemic heart disease are greater in persons older than 74 years.⁶ However, these figures are lower than in the United Kingdom and Sweden.^{7,8}

The age-adjusted proportion of women who die of ischemic heart disease is lower than the figure for men. Alarmingly, it is among younger women—those born after 1960—that the mortality rate is rising, in contrast with all birth cohorts since 1890, in which decreasing death rates have been found since 1975 for all ages and both sexes.⁹

Despite the fact that mortality rates and the incidence of ischemic heart disease are markedly lower in Spain than in the majority of developed countries,^{4,5} the areas with the highest death rate for ischemic heart disease are located on the Mediterranean coast, in the south of Spain (including Valencia, Murcia, Andalusia, and Mallorca and the other Balearic Islands) and the Canary Islands. In contrast, the center of Spain (except Madrid) is the least affected area.¹⁰ As far as we know, the incidence of ischemic heart disease in Spain follows this pattern.¹¹ The factors that determine this variability within a single country are difficult to discern as we have access to only sketchy information on human ecology (we analyze groups of people instead of individuals). Socioeconomic factors such as the prevalence of diabetes and different life styles—diet, physical activity and tobacco smoking—are the prime candidates.¹² Differences between the prevalence of hypertension and hypercholesterolemia may make a small contribution. However, this does seem unlikely because the risk of each of these factors attributable to ischemic heart disease in the Spanish population is very small.¹³

The factors that determine the differences in mortality between countries—differences that are greater than those found between the Spanish regions—must be related to the factors that determine the difference in mortality rates within the same

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Correspondence: Dr. Jaume Marrugat.
Unitat de Lípids i Epidemiologia Cardiovascular.
Institut Municipal d'Investigació Mèdica (IMIM).
Dr. Aiguader, 80.
08003 Barcelona. Spain.
E-mail: jmarrugat@imim.es

Full English text available at: www.revespcardiol.org

country.

Where do patients die of ischemic heart disease? In Spain, as in the other industrialized countries where studies have been carried out, about two-thirds of the patients who die within the first 28 days after the onset of symptoms do not live long enough to reach the hospital. Sudden death is one of the most frequent presentations of ischemic heart disease: the incidence is 43 per 100 000 in men and 1 per 100 000 in women, according to the definition of sudden death in less than 24 h used in Spain.¹⁴ This has been demonstrated for all age groups as a whole, and particularly, for the 25- to-74 year old group. Of those who do manage to reach the hospital, half die within 24 h and the rest do so between then and during the following 28 days.¹⁵

Why is the death rate for ischemic heart disease decreasing? Data available on the incidence of myocardial infarction show that the mortality rate has remained stable over the last 15 years.^{16,17} However, we have recorded a steady decrease in the mortality of patients hospitalized for myocardial infarction over the last 25 years. To a large extent, this improvement has been attributed to the new pharmacologic treatments available since 1986.² This epidemiologic situation, together with aging of the population, will bring about a gradual increase in the prevalence of patients with ischemic heart disease in Spain.^{15,18} The chronic nature of the disease will surely place greater demands on our already overstretched healthcare system.¹⁹

In Spain the prevalence of risk factors is higher than in countries where the incidence of and mortality rates for ischemic heart disease are in fact greater.^{20,21} Once we overcome our astonishment at this surprising recent news, we need to discover the cause in order to ensure that the factors that have previously protected us continue to do so, and so that we do not eliminate them from our lives through ignorance or disinterest. Genetic characteristics²² and life styles¹² probably go some way towards explaining the opaque body that lies between ischemic heart disease and shadows of data on mortality, if I may take the liberty of paraphrasing Saramago's metaphor.

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