

Emerging patterns in IHD in developing countries

Raffaele Bugiardini

Department of Internal Medicine, Aging and Nephrological Diseases, University of Bologna, Italy

Correspondence: Professor Raffaele Bugiardini, Dipartimento di Medicina Interna, dell'Invecchiamento, Malattie Nefrologiche (Padiglione 11), Università di Bologna, Via Giuseppe Massarenti 9, 40138 Bologna, Italy.

Tel: +39 51347290; fax: +39 51347290; e-mail: raffaele.bugiardini@unibo.it

Abstract

In the past decade, Europe has undergone significant societal changes that include a shift of the highest premature cardiovascular mortality rate from industrialized countries to Eastern Europe. Mortality represents the most reliable indicator to estimate the burden of ischemic heart disease (IHD), and the mortality rate from IHD in Eastern Europe is higher than that of the United States and Western European countries. There are few reports regarding the incidence, mortality and quality of assistance of IHD in transitional countries. However, the recent International Survey of Acute Coronary Syndromes in Transitional Countries, a large international investigative effort that will evaluate the role of evidencebased therapies and interventional cardiac procedures over a three-year period, may help to improve clinical outcomes in these countries.

■ *Heart Metab.* 2011;50:5–7.

Keywords: Epidemiology, Europe, ISACS-CT, ischemic heart disease, MONICA

Introduction

Ischemic heart disease (IHD) is the leading cause of mortality and morbidity in the United States and Europe [1,2]. It represents a tremendous financial burden, which is related to the cost of healthcare and social services, illness benefits and retirement, as well as its impact on families and caregivers, and loss of productive life years.

When describing the epidemiology of cardiovascular disease and its risk factors in Europe, one must remember that the political and economic profile of Europe has undergone extraordinary changes in the past two decades. In Eastern Europe and the former Soviet Union, changes in patterns of health differ greatly from those found in Western Europe. Today, the European region comprises 53 countries. Each of these countries has its own political, economic, and cultural history that has had specific influence on cardiovascular epidemiology. Social, economic and cultural factors play a crucial role in determining a

disease found sound frequently in the population, and this becomes evident when evaluating data on health; in these countries, societal changes have had a significant impact.

Mortality represents the most reliable indicator to estimate the burden of IHD in Europe. It allows a number of comparisons to be made regarding the several aggregates of European countries, and these observations are quite insightful to contextualize the epidemiology of coronary artery disease (CAD) in Europeans.

Mortality rate of ischemic heart disease

Tatu-Chitoiu et al. recently reported the in-hospital mortality rate in more than 9,000 patients admitted to hospitals in Romania with acute ST-elevation myocardial infarction. Compared to the standard in Western countries, the study showed a low rate of use of standard types of care (e.g., thrombolysis) and of newer treatments, such as primary percutaneous

coronary intervention [3]. The in-hospital mortality rate for patients with acute ST-elevation myocardial infarction in the registry was 12.7% as compared with the Euro Heart Survey (< 7%) [4] and the United States National Registry of Myocardial Infarction (8%) [5]. This study reported that, in Romania, inadequate acute medical care contributed not only to high in-hospital mortality, but also to overall mortality from coronary artery disease.

Another experience among multicenter centers in various countries throughout the world involved the World Health Organization's Multinational Monitoring of Trends and Determinants in Cardiovascular Disease (MONICA) Project, which promoted the detection of incidence and attack rates for cardiovascular events using standardized procedures, allowing a reliable comparison between units of observation [6]. Yet, analysis of this phenomenon has been hindered by insufficient information. The MONICA Project for monitoring cardiovascular mortality and risk factors considered only six Eastern European countries—Russia, Yugoslavia, Poland, Czechoslovakia, Hungary and the former East Germany. This international registry confirmed that the mortality rate from IHD in Eastern Europe is higher than that of the United States and Western European countries [7].

Difference in coronary risk factors

In recent years, mortality from cardiovascular disease has been decreasing continuously in the United States and in many Western European countries. However, during the last decade, the region with the highest premature cardiovascular mortality rate has shifted from industrialized countries to Eastern Europe. In recent years, Latvia, Estonia, the Russian Federation, and Hungary have had the highest cardiovascular mortality rates. This increased risk of mortality is only partially explainable by the high prevalence of traditional risk factors. The MONICA surveys have shown that there were no substantial differences between Eastern Europe and democratic countries regarding the prevalence of traditional risk factors (dyslipidemia, diabetes, and hypertension), with the significant exception of male smokers. Smoking and alcoholism are definitely important risk factors, but additional local risk factors in Eastern Europe need to be identified with more specific target-prevention programs in individual Eastern Europe countries [8]. There are no data, however, regarding the role of food, antioxidant vitamins and inflammation in these countries.

Possible explanation

The failure of economic and political systems to satisfy material and psychosocial population needs has

probably been an important factor in the cardiovascular disease epidemic in Eastern Europe.

The MONICA data suggest that poor quality of care contributed to the high mortality rate from coronary artery disease in Eastern Europe. However, in these analyses, it was difficult to separate the effects of the quality of care from those of CAD risk factors and socio-economic characteristics [6].

In the more economically stable countries, both IHD and stroke mortality are declining, whereas one can note two key characteristics in countries that are less economically stable: (a) the morbidity and mortality rates are higher, and (b) secular trends show a fluctuation with an early increase and a recent tendency towards a small decrease, an indicator of the influence the disordered and rapid change of living conditions has had on these populations. A comparison of populations under the age of 65—which includes the potential working life span—representative of various geo-socio-political parts of Europe shows a four- to six-fold difference in coronary heart disease and stroke mortality rates in recent years in countries with different economic conditions.

However, important limitations need to be considered when comparing the mortality rate between former Communist and Western countries, because the mortality rate depends on the length of hospital stay, health assistance, and post-discharge assistance. Another limitation may be that Eastern Europe patients may have phenotypes that may not be comparable with other populations. Finally, the presence of other comorbidities or differences in diagnostic practice may influence the prognosis in IHD.

The International Survey of Acute Coronary Syndromes in Transitional Countries (ISACS-CT)

The International Survey of Acute Coronary Syndromes in Transitional Countries (ISACS-CT) is both a retrospective (over a one-year period) and prospective (over a three-year period) study that was designed to obtain data about patients with acute coronary syndrome in countries with an economy in transition, and thereby control and optimize internationally recommended guideline therapies in these countries [9]. There are a total of 132 collaborating centers in ten transitional countries (Bulgaria, Croatia, Hungary, Poland, Russian Federation, Romania, Serbia/Montenegro, and Ukraine), and a total of 30 centers in five industrialized countries (Italy, Greece, Finland, the United Kingdom, and the United States) that serve as control.

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The survey has four aims: (1) documenting the characteristics of all patients presenting to the enrolled centers with ST-segment-elevation myocardial infarction (STEMI) or non-ST-segment-elevation myocardial infarction (NSTEMI), (2) documenting in-hospital outcome and outcome rates at 6 months and 1 year, (3) documenting interventional cardiac procedures and related complications, and (4) documenting therapeutic regimens and investigating conformity of treatment with already established guidelines. The survey encourages optimal evidence-based therapies, and the international patient body ensures good representation of multiple practice patterns.

Conclusion

There are few reports regarding the incidence, mortality, and quality of assistance of IHD in transitional countries. Moreover, in other European areas, the size of these phenomena can be estimated based on local observations. The only international registry was the MONICA Project, which enrolled patients from 1989 to 1999 and did not take into consideration the most recent knowledge regarding the pathophysiology of IHD and cardiac risk factors [8]. ISACS-CT is a large international investigative effort that will evaluate the role of evidence-based therapies and interventional cardiac procedures over a three-year period. It may help to additionally improve clinical outcomes in countries with an economy in transition. ■

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