Editor's Note

Cardiovascular Happenings in Europe

As a Fellow of the European Society of Cardiology, I receive all of the literature the Society sends to its members and recently I received a booklet entitled "Cardiovascular Diseases in Europe".¹ The information contained therein was based on European registries of cardiovascular disease and patient management. While reading, I was struck by the many similarities between

the situation in Europe and that in the United States; there are also some differences. I thought this might be of interest to readers of the journal.

As in the United States, cardiovascular disease remains the major cause of death across all of Europe. Each year it is estimated that approximately 3.5 million Europeans die from diseases of the heart and blood vessels.

European cardiologists, using new methods of prevention and treatment, have delayed the onset of cardiovascular clinical manifestations (as we have in the U.S.) and are improving immediate outcome of the diseases processes. Thus, as in the United States, there are increasing numbers of patients who survive a cardiovascular event who live on to require continued medical therapy or interventional therapy at a later date.

Although the population in the United States is not uniform with respect to socioeconomic status and race, our health care systems are generally the same throughout the country. This situation is considerably more complicated in Europe. The 47 countries in Europe and the Mediterranean area have marked differences in population, socioeconomic status, and health care systems.

There are approximately 9 million inhabitants of European Society of Cardiology member states. I won't list the number of member countries of the ESC but alphabetically they range from Albania to Yugoslavia. The population of these countries varies in number from 24,000 to 147 million (in the Russian Federation). Health care expenditures expressed as percent of GDP range from 2.2% in the Russian Federation to 10.4% in Germany.

As in the United States, the percentage of the population 65 years or over is increasing, varying from 12% in Eastern Europe to 16% in Western Europe.

There are also fewer men than women, in the majority of European countries with the lowest percentage of males

(<47%) in the Russian Federation and the Baltic Republics.

What follows are some data on mortality and morbidity from cardiovascular disease in Europe, as well as frequency of selected procedures performed by European cardiologists.

Hospital discharge diagnoses of cardiovascular disease vary from country to country and among regions of Europe. Overall, however, the number of patients discharged with heart failure and ischemic heart disease has increased steadily. Thus, as in the United States, many more patients will be living to an older age.

Mortality from cardiovascular disease varies strikingly in different parts of Europe. For example, in central and eastern European countries the cardiovascular mortality rate ranges from six per thousand in Poland and Croatia to nine per thousand in Bulgaria, Romania, and the Russian Federation. This is in marked contrast to much lower cardiovascular mortality risk in countries such as Belgium, France, Spain, Switzerland, and the Netherlands.

The use of implantable cardioverter defibrillators in 1995 varied considerably. The most striking examples are Germany, where greater than 23 per million were used, and Poland, where less than one per million were used. Both of these countries have similar cardiovascular disease mortality rates and a similar number of hospital discharge diagnoses for cardiovascular disease. Because of scientific clinical data supporting their use, the European cardiologists predict a significant increase in the use of implantable defibrillators within the next decade. I suspect use of defibrillators will continue to vary related to socioeconomic factors and health care systems.

Performance of coronary angiography also varies considerably in different parts of Europe. For example, in Iceland there were 4,500 angiograms per million persons; in Germany and Belgium approximately 3,400 per million persons; and in Switzerland, France, and Ireland approximately 2,700 per million persons. In contrast are much lower rates—that is, fewer than 600 angiograms per million persons—in central European countries such as Poland, Hungary, and Latvia. European cardiologists point out that there seems to be an inverse relation between the number of angiograms undertaken and deaths attributable to ischemic heart disease. For example, ischemic heart disease mortality is relatively low in France, Germany, and Switzerland where angiography volumes are high, whereas high mortality rates are observed in Romania, Hungary, and the Baltic states where angiography volumes are much lower.

The same can be said for percutaneous coronary interventions: in those countries in which high volume angiography is performed, high volumes of percutaneous interventions are

also performed. The ratio is approximately 1:4 in most countries, but this is also variable. In the Netherlands the ratio is 1:2.5, and in Italy and the United Kingdom 1 of 5 angiograms performed resulted in the performance of a percutaneous coronary intervention. As with angiography, there was an inverse relationship between the number of percutaneous coronary interventions and ischemic heart disease mortality rates. Those with high volume percutaneous coronary interventions (Germany and Iceland) had lower mortality rates than those with low volumes (Romania and Latvia). There were a few exceptions to this and these include Denmark, Italy, Portugal, and Spain. These four countries have a low percutaneous coronary intervention rate and also low ischemic heart disease mortality rate. The use of stents also varies, but in current practice in many European countries the majority of patients undergoing percutaneous coronary interventions are receiving stents.

The use of open heart surgery varies in different parts of Europe, but the European cardiologists point out that there was no relationship between the number of open heart operations and the mortality rates in the different countries. The number of coronary artery bypass surgery operations has increased in almost all European countries with the Nordic countries—Norway, Sweden, and Finland—having the highest volumes. In contrast, France, Germany, and Switzerland have a high percutaneous coronary intervention rate and a relatively low coronary artery bypass surgery volume. Low volumes of both revascularization procedures are observed in Greece, Italy, and Portugal. The Netherlands and Iceland have high volumes of both revascularization procedures.

Summary

1. Cardiovascular diseases remain the major causes of death in Europe and the United States.
2. Hospital discharges for cardiovascular disease are increasing in the United States and Europe.
3. The population is aging in Europe and United States related to aggressive methods of prevention and treatment strategies.
4. The United States and Europe must prepare for the large number of elderly patients with cardiovascular disease in the third millenium.
5. The differences in mortality in the different countries in Europe may be related to socioeconomic factors and health care systems.
6. The use of devices and procedures is on the rise in Europe.
7. Women outnumber men in Europe as well as in the United States.

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References

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