CHAPTER 1.4

CARDIOVASCULAR AND ALL-CAUSES MORTALITY PATTERNS IN THE SEVEN COUNTRIES STUDY

Alessandro Menotti, Mariapaola Lanti
In prospective population studies, mortality data are relatively easy to collect. Their diagnostic accuracy is usually acceptable, and the fact and date of death are certain. They allow us to use mathematical models based on life tables. Moreover, mortality data for a population sample can be compared with those of other studies and with official national mortality statistics. Finally, in the absence or incompleteness of non-fatal event ascertainment, mortality data represent a good approximation to incidence, especially if adjustment can be made relating fatal to non-fatal events.

Mortality data are important indicators of the health status of a population. This justifies the considerable attention paid to secular trends in death rates, which, during the last few decades, have characterized coronary heart disease (CHD), cardiovascular diseases, and all-causes mortality. Downward trends for CHD, stroke, and cardiovascular deaths were seen in most Western countries. This started in the late 1960s in the U.S.A. and spread to Europe, Australia, New Zealand, and Japan in the 1970s and 1980s. These trends mark new phenomena in the history of public health (1,2). Before the 1970s there had been a definite up-turn in these diseases in the Western world, from a predominance of infectious diseases to chronic non-communicable diseases, primarily cardiovascular diseases and cancer, as leading causes of death. This trend is seen now in the developing countries. Projections made to the year 2020 (3) estimate that worldwide there will be a predominance of non-communicable diseases as the major causes of death, led by CHD and stroke. This will lead to a change in health status in developing and developed countries and a further increase in life expectancy.

In the Seven Countries Study, mortality data were collected during the 1960-1985 period. These data are used to describe trends in mortality from cardiovascular and all-causes mortality for a period of 25 years. Also mortality data for elderly men collected between 1985 and 1995 are reported.

CODING MORTALITY DATA

Data on mortality and causes of death were collected systematically in all cohorts for 25 years of follow-up. Altogether only 56 men (0.4%) were lost to follow-up, all of whom were members of cohorts in former Yugoslavia. In addition elderly men from Finland, The Netherlands and Italy were followed for 10 years. Only 7 men (0.3%) were lost to follow-up.

Methodology for collection of data was similar in the cohorts. Deaths occurring in a given sample were periodically reported at the local registry offices, or in special files if the sample was occupational, for the 25 years of follow-up. Usually the underlying causes of death reported on the official certificate were used as a preliminary indication by the research team, and other sources were considered for assigning the final cause of death. The search was made by collecting and reviewing data from previous clinical records completed by the research group, from hospital and necropsy records, family and hospital doctors. Information was also gained from relatives, friends and other witnesses, from the police in cases of violent causes or death suddenly in public places or without witnesses, and medical records made available by the family. This procedure was used in all cohorts except the U.S. railroad, for which only subsamples of cases were validated by hospital records, and for the Finnish samples, where after 15 years of follow-up only death certificates were available. This information was evaluated by two investigators (H. Blackburn and A. Menotti for the first 10 years and subsequently A. Menotti only), who assigned the