Summary. Between 1969 and 1990, Italy experienced a marked decline in cardiovascular disease death rates. In particular, rates from coronary heart disease decreased by 40% in men and 51% in women; rates from cerebrovascular disease decreased by 43% in men and 41% in women; and rates from cardiovascular diseases overall decreased by 42% in men and 48% in women. Large-scale population surveys on the main cardiovascular risk factors performed on middle-aged people (aged 30–59 years) in 1978–1979, 1983–1984, and 1985–1987 showed a significant decline in mean levels of blood pressure (in both sexes), in body mass index (in women), and in cigarette smoking (in men), while serum cholesterol remained substantially unchanged. With the use of risk functions generated from Italian population studies, it was shown that about two-thirds of the decline in cardiovascular mortality was mathematically “explained” by the observed risk factor changes. It is assumed that part of the mortality decline is due to improved medical and surgical treatment and to rehabilitation of cardiovascular diseases.

Key words. Cardiovascular diseases—Risk factor changes—Mortality trends—Italy

Introduction

The recent changes observed in death rates from cardiovascular, mainly coronary, disease in many countries started about 25 years ago in the United States, soon followed by declines in other industrialized countries [1–4]. On the other hand, until recently, death rates in the countries of Eastern Europe, and in many other nonindustrialized countries, continued to rise. International conferences held in Bethesda, Maryland in 1978 [1] and 1988 [5] tried to establish whether such changes were true and whether they could be explained.

Among the western industrialized countries, Italy showed upward trends until the late 1970s [6], and only then, about 10 years later than in the United
States and elsewhere, did a marked decline in deaths become evident [7,8]. A review of the present status of the issue is given here.

Materials and Methods

In Italy official mortality data are collected by the Italian National Institute of Statistics, while estimates of the resident population in the years between the decennial censuses, and computation of official death rates, are made by the Italian National Institute of Health, whose data bank has been consulted for the purpose. Official numerators, denominators, and rates become available in Italy with a delay of about 3 years after a given year of observation. Detailed information is now available from 1969 to 1990. For the purpose of this analysis, we considered the following groupings of causes of death, as identified by the corresponding codes of the World Health Organization, *International Classification of Diseases*, Ninth Revision [9], (for the years preceding the use of the Ninth Revision, the Eighth Revision [10] was employed after adjustments made to provide full comparability with the Ninth):

- Ischemic heart diseases: codes 410–414 (called coronary heart disease)
- Cerebrovascular disease: codes 430–438 (called strokes)
- All cardiovascular diseases: codes 390–459 (called cardiovascular diseases)
- All-cause mortality: codes 001–999, taken as reference for some analyses

Death rates for each of these causes were computed for each year from 1969 to 1990, separately for men and women and for quinquennia of age 0–4, 6–9, 10–14, and so on until age 95–99. The quinquennial death rates were then compacted into age-adjusted death rates for the following age ranges: 0–99, 30–59, 40–69, 65–99. The reason for those ranges will become clear in the chapter on results. The age adjustment was made by direct standardization, taking as reference the age distribution of the Italian population from the census of 1981 in the proper age ranges, whose information is incorporated in the same data bank. The death rates were expressed per 100,000 population.

The time trends in cardiovascular mortality have been correlated against the time changes in cardiovascular risk factors derived from three major studies on population samples conducted in Italy between the late 1970s and the late 1980s. The first study (RF2) was conducted in 1978–1979 among nine samples of men and women located in nine different health districts (out of over 600 in Italy) in eight different regions [11,12]. It included people aged 20–59, but for the purpose of this analysis only people aged 30–59 were considered. The nine areas included locations in northern, central, southern, and insular Italy, characterized by both urban and rural environments. They did not necessarily represent the whole country, but were representative of many similar localities.