drug therapy simultaneously is replacing efforts to change that way of life. Have we as cardiologists, and have we as citizens of Europe, accepted drugs as a way out of a complex set of circumstances that are conducive to the appearance and maintenance of coronary heart disease?

If that is the case, it is a collective failure not only of medical practice and health care policy. It is a failure of broader policies as well. They include policies that are supposed to regulate agriculture and education. That is because agricultural policy, as an example, determines the production of tobacco and the production of animal fats, and educational policies determine, as another example, the degree to which we teach our children to be physically active. The EUROASPIRE II data, and a plethora of data from other epidemiological studies, therefore suggest a much larger context in which to consider the flow of patients with coronary heart disease.

References


Mortality prediction in the elderly

See page 573 for the article to which this Editorial refers

The demographic changes that will take place in Europe at the beginning of this new century are a challenge for both health policy makers and health care providers[1]. Other than health care technology, ageing is the most important contributor to the increase in health care costs, and the increase in ageing itself has different causes. By the year 2010 the cohorts of the post World War II baby boom will reach 60–65 years of age, and of those growing older, more are living longer. Improvements in preventive medicine and in health care have resulted in a significant increase in life expectancy for the adult and elderly population. These rather sudden demographic shifts in the fraction of the population with the greatest health care needs require more attention, not only from the policy makers but also from researchers and clinicians.

In order to understand the dynamics of health and disease in the elderly, we need more and precise data on mortality, but also on morbidity and functional status. The epidemiology of chronic diseases has focused mainly on the adult population. Much less is known about the elderly, particularly the very old. Therefore more research programmes are needed, in particular prospective cohort studies, to understand the main determinants of morbidity, functional status and mortality in the elderly. This is particularly necessary for all cardiovascular diseases that present in the elderly and impinge on disability adjusted life-years. In the years to come, the elderly are expected to increase the absolute number of patients with cardiovascular diseases, and thus will be associated with a considerable rise in the social, health care and economic burden of these diseases[2,3].

In this issue, results are published from a 10 year mortality follow-up study on an elderly European male population (the FINE study)[4]. Cardiovascular risk factors were studied as possible predictors of total mortality.

The advantage of considering only total mortality as a measure of the population health status is that it is unambiguous: either you are alive or you are dead. Cause-specific mortality is more ambiguous, especially in the elderly where the underlying cause of death may be multiple; the latter is not reflected in the death statistics. The great disadvantage of focusing only on total mortality is the absence of information...
on functional status, disability and morbidity, all of which relate strongly to quality of life. Immediately after survival, quality of life is the most important issue for elderly patients. However, to be in good health, being alive is a prerequisite.

The study presented here has other advantages: the results are based on large community-based cohorts selected from five rural areas in Europe. The participation rate was good, the mortality follow-up complete over a 10-year period, resulting in large numbers in terms of outcome.

The results confirm the importance of smoking and of physical activity (indirectly measured through resting heart rate). Heart rate was inversely related to short- and long-term mortality in all cohorts independent of all other study variables. Smoking was also predictive of total mortality in Finland and the Netherlands. These findings, related to smoking and physical activity, confirm what has been observed in other prospective studies on total mortality in the elderly.

No, or inconsistent, predictive values were found for other cardiovascular risk factors, such as total and HDL-cholesterol, body mass index and blood pressure. This is not surprising, and confirms the controversy in the literature. Conflicting explanations are given[5].

Co-morbidity and co-mortality are common in the elderly and may obscure true associations between all-cause mortality and risk factors. These associations can be altered when the risk factor level is changed by the health status of the person at the time of the risk factor measurement. In long-term prospective studies in the elderly, risk factor levels may change with advancing age. The level at the time of measurement may be quite different from the lifetime exposure that has taken place, thus misclassifying the subject.

In addition, subclinical or overt diseases may interact with disease progression, thereby modifying the associations between all-cause mortality and possible risk factors. Selective survival of older persons with unfavourable risk factor profiles may also explain inconsistent results between studies.

Emphasized to a lesser extent by the authors of the FINE study, but very clearly present, are the differences in survival between the three countries; total mortality was considerably higher in East Finland compared to the other areas and this was not explained by the classical cardiovascular risk factors. This observation is important and a challenge for further research into what factors put the elderly in East Finland at higher risk of mortality from all causes than the elderly in other regions. Geographic correlation studies — as carried out in the adult population — may further help in identifying factors that could explain these large differences in survival in the elderly; there may be other factors specific to the elderly, or those identified in adults, related to for instance, nutrition, inflammation, immune status, which may also be very important in mortality risk prediction in the elderly. A better understanding of these factors could help in the development of preventive strategies.

Much more information is needed on survival of the elderly, but also on their quality of life, and on surviving in good health without functional disabilities. Long-term prospective studies can provide such results but are difficult to realize, are costly and time consuming. Alternative approaches should be encouraged, such as the study of health instead of disease, and on what discriminates centenarians in good health from the others? Instead of studying risk factors we should try to understand what keeps old subjects healthy.

From the results presented here[4] it seems logical to conclude that smoking tobacco and physical inactivity limits the chances of growing old. As regards the adverse effects of smoking on respiratory morbidity and/or physical inactivity on musculoskeletal disabilities, it is accepted that the control of those two lifestyle-related factors are important to achieve survival in good health.

This is solid information that we are already translating into preventive medical practice. But much more has to be studied in order to improve health promotion and health care in the fraction of the community with the greatest need.

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