Cardiovascular disease stoppable in developing countries?

Edmond Bertrand

The author discusses factors with a bearing on cardiovascular disease which are shared by many developing countries, and outlines the difficulties that have to be overcome if significant prevention is to be achieved.

Cause-of-death statistics are often unreliable in developing countries because of bias in hospital-based estimates and poor coverage. Probably 8–9 million deaths can be attributed annually to cardiovascular diseases in these countries (1). In 1993 it was estimated that mortality from cardiovascular diseases was 30% in China, 10% in India (underestimated), 20%–45% in the Eastern Mediterranean, 25% in Latin America, and 15%–20% in sub-Saharan Africa. On the whole, mortality from these diseases is increasing inexorably while general mortality is decreasing. Some cardiovascular diseases are showing relative increases in prevalence, this being true of coronary disease (2,3), hypertension and stroke, whereas others are becoming relatively less prevalent, as is the case with streptococcal diseases and infectious or nutritional myocarditis.

Because of social and economic difficulties and scarcities of doctors there are often long delays before cardiovascular diseases are diagnosed in developing countries. Even though hypertension is easy to detect it is undiagnosed in a fifth of cases in Iraq and a third of those in Pakistan (4). In Côte d’Ivoire, 80% of patients with streptococcal valvular disease were hospitalized at the stage of heart failure (5).

Most developing countries are situated in tropical areas but the tropical climate has not been documented as a risk factor for cardiovascular diseases. Except for Chagas disease and possibly schistosomiasis and filariasis, the occurrence of major parasitic tropical diseases does not modify the prevalence of cardiovascular diseases. Haemoglobin S and haemoglobin C may be risk factors for coronary disease (4).

Common factors

The following phenomena with a bearing on cardiovascular disease occur widely in the developing world.

- The average ages of populations are comparatively low.
- Migration from rural to urban areas is often accompanied by disruption of family and social life. In the towns, physical activity is reduced and the food eaten may be a factor leading to heart disease. Among people of average to high economic status there may be a tendency for obesity to develop, as has been reported from northern China (6).
and the Eastern Mediterranean Region (3). In sub-Saharan Africa, obesity occurs mainly in women (7), sometimes partly because of cultural preferences.

- Smoking is increasing. In Africa, for instance, there has been a rise of more than 40% in cigarette consumption over two decades (7).
- Access to health care is difficult for many people because of:
  - low earnings;
  - little or no social protection or insurance;
  - shortages of health workers or their uneven distribution.

Consequently, medical surveys and treatments may be inadequate; in Ghana, for example, only 15% of those suffering from hypertension are correctly treated (8), and the corresponding figure is as low as 10% in Indonesia (9).

- Blood cholesterol levels are generally lower than in the developed world, although a study covering some developing countries in Asia and South America showed that mean values were not very different from those in developed countries (10).

**Prevention**

Prevention policies are failing in most developing countries. Some reasons for this are indicated below (11).

- Competing priorities, such as the common communicable diseases, nutritional disorders and AIDS, take up a large part of health care resources.
- Resources are often spent on improving diagnostic procedures and treatment.
- Epidemiological data are often inadequate as a basis for establishing appropriate preventive measures.
- Health professionals are more interested in treatment than prevention because of the way they have been trained and the demands of clinical care. Moreover, they receive direct expressions of appreciation from the beneficiaries of treatment, whereas there is no such response to preventive endeavours.
- There is a tendency for economists and governments not to take long-term cost-effectiveness into account because of the many pressing matters they have to deal with.

It is necessary for government, health professionals, teachers and the general population to work together over a period of years if prevention is to be effective. Special budgets, appropriate measures and community mobilization are required. Cultural, social and nutritional customs may have to be modified, and such changes are only possible through a sustained educational effort. Even more difficult is the struggle against vested economic interests, notably in respect of smoking.

However, despite the difficulties of prevention in developing areas there have been some considerable achievements.

- In Mauritius a lifestyle intervention programme led to decreases in the prevalence of hypertension, cigarette smoking and excessive alcohol consumption, and cholesterol levels were reduced (12).
In Havana, Cuba, the incidence of rheumatic fever dropped from 39 to 10 per 100,000 inhabitants between 1972 and 1982 (13).

In Costa Rica the number of patients admitted to hospital for rheumatic fever decreased by 90% between 1970 and 1990 as a result of a programme based on clinical diagnosis without throat cultures and on the intramuscular injection of benzathine penicillin (14).

In two French Caribbean islands an educational programme between 1981 and 1991 produced a 75% decline in the frequency of rheumatic fever, while that of rheumatic carditis fell by 65%. There was a 90% reduction in the annual cost of rheumatic fever (15).

Cardiovascular diseases have become an important public health problem in all developing countries. A greater preventive effort would undoubtedly control rheumatic fever and would probably reduce the prevalence of some risk factors for atherosclerosis. The prevention of cardiovascular diseases requires the collection of improved epidemiological data and proper targeting. Programmes should have adequate budgets, should continue for at least five years, and should include educational activities for nurses, doctors, teachers and the general population, with strategic use of the mass media. ■