Is Cardiovascular Disease Preventable?

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Cardiovascular disease is the leading cause of death in developed and developing countries. In Asia, heart attacks and stroke are major causes of morbidity and mortality. The risk factors leading to cardiovascular disease are well known.[1] Of these, smoking, blood pressure and cholesterol are the major modifiable risk factors. In highly developed countries such as the United States, we and others have shown that the prevalence of these risk factors is declining.[2] This is not the case in developing countries.

Cardiovascular diseases form a continuum,[3] in which cardiovascular risk factors lead to atherosclerosis, which is not clinically overt at first, but in middle age, may manifest itself as ischaemic heart disease, cerebrovascular and peripheral vascular disease. In old age, accumulated injuries to the myocardium lead to chronic heart failure whereas in the brain, vascular disease is an important cause of senile dementia. The question then arises – can we intervene earlier in the cardiovascular continuum?

Data from the Hong Kong Cardiovascular Risk Factor Prevalence Study showed that hypertension and diabetes are sequelae of obesity.[4,5] They support the usefulness of the concept of the metabolic syndrome.[6-8] Central obesity leads to elevated triglycerides and reduced high density lipoprotein cholesterol. Raised blood pressure and raised blood glucose follow later.[9,10] This provides a window of opportunity to prevent cardiovascular disease by preventing the development of the leading risk factors. Numerous studies have shown that lifestyle measures to reduce central obesity will reduce blood pressure and the development of diabetes.[11-13]

As a result of economical development, physical activity is declining in Asia.[14,15] HDL does not decrease with age in American women but it does so in Hong Kong Chinese women.[16] At the same time, a diet that traditionally provides abundant calories for farming and manual labour may be inappropriate for a sedentary lifestyle.[17-19] This may explain the high incidence of diabetes among Asians.

For those who already have cardiovascular disease, medications to modify blood pressure, cholesterol and platelet function have been shown in large clinical trials and meta-analyses to have favourable effects on outcome.[20-23] The INTERHEART study has eloquently shown that 90% of heart attacks can be explained by nine risk factors, the majority of which are related to lifestyle and can be modified by changes in lifestyle.[24] It is high time we put this knowledge into action.

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