

## Very early recognition of coronary heart disease

Cardiologists from many countries came together earlier this month at a London symposium on the very early recognition of coronary heart disease organised by the Cardiothoracic Institute and the National Heart Hospital—and at a preliminary “think-tank” meeting at Leeds Castle, Kent. They reached two important conclusions. Firstly, while we know that coronary heart disease shows itself by abnormalities in the pumping or electrical activity of the heart muscle (myocardial infarction, angina pectoris, heart failure, arrhythmias, and sudden death), we do not yet understand the precise relations between these end-stage events and coronary atherosclerosis and thrombosis, or the group-markers of risk such as cigarette smoking, raised serum lipid concentrations, and hypertension. While these interrelations remain enigmatic we cannot be confident that studies carried out on the heart, the coronary tree, or the blood will allow us to predict which individuals are destined to develop the disease. Secondly, the symposium questioned whether we are justified in expanding human and material resources in recognising any disease at an early stage unless detection can lead to useful action. Comparison with breast and lung cancer is appropriate, for in neither of these conditions is it self-evident that early detection necessarily helps patients.

Even though the meeting could not resolve these dilemmas it pointed to gaps in our knowledge and drew attention to technological advances in the non-invasive assessment of the heart and great vessels that should prove valuable in surveys of sizable groups. It highlighted the poor predictive value of risk markers (both simple ones such as family history, smoking habit, and weight, and resource-demanding investigations such as blood pressure, serum lipids, and electrocardiographic patterns at rest and in response to exercise). If we take 100 men with the three major risk markers (smoking, hypertension, and raised serum cholesterol) only eight develop clinical manifestations of coronary heart disease over the next 10 years, while 92 do not<sup>1</sup>; conversely, most previously fit patients who developed coronary heart disease while under observation in the Seattle “heart-watch” programme had no conventional risk factors on entry. We must therefore realise that risk factors cannot be causal and that they have very poor predictive value. Furthermore, at present none of our more advanced tests (such as tests for thrombotic tendency or exercise stressing of the heart) improve the specificity and sensitivity of the predictions.

In contrast to the epidemiological gloom technological advances seemed to offer some hope of being able to define more accurately the relations between disease and symptoms (why do patients with coronary artery disease get chest pain? Is the pain chemically or mechanically mediated?) and among the various disease elements (vessel wall and lumen disease, myocardial disease, electrical dysfunction). Our new-found ability to measure and display the heart wall and its movements by non-invasive methods such as echocardiography, electromagnetic field disturbances, and isotopic imaging adds another dimension to clinical investigation. A ciné-image may be built of the left ventricular cavity by gated isotope scanning after an intravenous injection, making it possible to calculate the ejection fraction and to identify dyskinctic segments in patients in whom conventional transarterial catheterisation of the left ventricle would be totally unjustified or harmful. Gamma-emitting isotope detection of areas of infarction is

rapidly becoming more refined, and the use of positron-emitting isotopes may soon enable us to detect myocardial lesions less than one centimetre in diameter.

The messages from the symposium are clear. Before more money is spent on screening for risk factors (as opposed to the good clinical practice of recording and modifying smoking habits, weight, and blood pressure) we need to improve the predictive power of our tests, and we need to decide how we are going to advise individuals found to be at risk. Moreover, though major advances may occur because a new technique becomes available, they are not inevitable. The new non-invasive imaging methods have great promise in research, but it is vital to ensure that their benefits to patients are commensurate with their cost to the community before putting them into service.

<sup>1</sup> Report of Intersociety Commission for Heart Disease Resources, *Circulation*, 1970, 42A, 55.

## Research and cancer education

The recent upsurge of interest in a preventive approach to the control of cancer has come at a time when finance for any new developments has become exceptionally hard to find. Fortunately, despite neglect by the NHS, there have been a few pioneer units examining the potential of both prevention and public education in this field, so that there is a body of practical experience on which to build.<sup>1</sup>

There are three separate tasks. Firstly, more needs to be done in primary prevention. While most cancer may prove to be due to environmental agents,<sup>2</sup> for the time being tobacco and alcohol remain the only examples of substances in common use that have been proved to be major carcinogens. The campaigns so far mounted to discourage their consumption have been well intentioned rather than well researched. We need to know, for example, why the distribution of smokers in the British population has changed so dramatically in the last 20 years:<sup>3</sup> the numbers of men in social class I who smoke have almost halved, yet their wives smoke as much as ever, and both men and women in social classes IV and V smoke more than they did in the 1950s.

Secondly, screening for presymptomatic disease needs critical examination. While there is evidence that the prognosis of cancer of the cervix is determined by its clinical stage at the time of presentation, there may not be the same clear-cut gain from other screening techniques. The results of mammographic screening<sup>4 5</sup> have shown how difficult it may be to identify the population of women in whom early detection leads to a statistically significant improvement in cure of the disease.

Thirdly, far too many patients still present themselves for treatment with cancers that first gave them symptoms months if not years earlier. Education has a huge task ahead in trying to dispel the deep-rooted misconceptions that deter prompt action by individuals well aware of the nature of their symptoms. In Britain we have been far less open than the Americans about talking about cancer: few doctors here are prepared to tell a patient with a resectable tumour that it is malignant, so that we should not be surprised that many people still equate cancer with death.

If cancer education is to play a larger part in the NHS