

# EUROACTION: A EUROPEAN SOCIETY OF CARDIOLOGY DEMONSTRATION PROJECT IN PREVENTIVE CARDIOLOGY

**Professor David A Wood on behalf  
of the EuroAction Study Group**

## **Introduction**

The Joint European Societies' guidelines on cardiovascular disease (CVD) prevention have advocated that the care of coronary patients and other patients with atherosclerotic disease should embrace all aspects of cardiovascular prevention and rehabilitation. Integrating the care of such patients between hospital and general practice is essential to ensure optimal long-term lifestyle, risk factor and therapeutic management. Although cardiac rehabilitation traditionally focused on supervised exercise sessions, this speciality has gradually evolved into comprehensive lifestyle programmes — smoking cessation, making healthy food choices, as well as increasing physical activity — based on behavioural models of change. Risk factor management, in terms of controlling blood pressure, lipids and diabetes and the use of prophylactic drug therapies, is now also an integral part of this approach.

Unfortunately, risk factor management in patients with coronary heart disease (CHD) in Europe is far from optimal. Surveys of clinical practice such as EUROASPIRE I and II (European Action on Secondary Prevention by Intervention to Reduce Events) have shown that the majority of coronary patients in EUROASPIRE II had not been advised to follow a cardiac rehabilitation programme, and less than one-third of the entire study cohort attended such a programme. The practice of cardiac rehabilitation in Europe differs greatly between countries depending on custom, the organisation of medical care and resources. In the EUROASPIRE II survey, the majority of patients who were invited to attend a rehabilitation programme did so. However, most did not achieve the recommended lifestyle, risk factor and therapeutic goals. So the potential to reduce the risk of CVD exists for all coronary patients.

EuroAction is a European Society of Cardiology demonstration project which aims to raise the standards of preventive cardiology in Europe by demonstrating that the Joint European Societies' guidelines on lifestyle, risk factor and therapeutic goals for CVD prevention can be realised in everyday clinical practice.

## **Objectives**

The objectives of the EUROACTION project are:

- (1) to demonstrate the immediate impact and process of care of a 16 week multidisciplinary, hospital-based, cardiovascular prevention and rehabilitation programme on lifestyle, risk factors and therapeutic management of patients with CHD and their families;
- (2) to demonstrate the impact and process of care of a hospital-led preventive cardiology programme for all partners and first degree relatives of coronary patients with premature disease;
- (3) to demonstrate the process of care and the longer term impact of this programme for all coronary patients, partners and first degree relatives at one year;
- (4) to demonstrate the impact of a specialist nurse-led preventive cardiology programme in general practice on identification and management of high risk individuals and their partners at one year; and
- (5) to follow up patients with coronary disease, high risk individuals and their partners, and first degree relatives of patients with premature coronary disease for recurrent coronary non-fatal events and cardiovascular and all-cause mortality in order to determine the relationship between the intervention and event-free survival.

## **Study population**

The project is being conducted under the auspices of the European Society of Cardiology in eight European countries — Denmark, France, Italy, Poland, Spain, Sweden, the Netherlands and the UK — and is supported by an unrestricted educational grant from AstraZeneca to the Society.

The study populations are: (1) hospital patients with coronary artery disease and their partners; (2) first degree relatives of patients with premature coronary disease; and (3) individuals in primary care at high multifactorial risk of developing CVD and their partners.

## Study design

The study design is a cluster, randomised, controlled intervention trial with clinical follow up at 16 weeks and one year (hospital arm) and at one year only (primary care arm). In each country, two busy, large district general hospitals and two general practices from different geographical areas have been recruited. Hospitals and general practices have been randomised within their respective pairs to the EuroAction intervention programme or usual care.

### Coronary patients, partners and families (hospital arm)

In the intervention hospitals, all consecutive new patients, both men and women <80 years, with a medical diagnosis of CHD (acute myocardial infarction, unstable angina and stable angina) are prospectively recruited, together with their partners, to a comprehensive specialist nurse-led multidisciplinary 16 week cardiovascular prevention and rehabilitation programme. The object of the programme is to achieve the recommended lifestyle, risk factor and therapeutic targets for CVD prevention.

The first degree blood relatives (siblings and offspring  $\geq 18$  years of age) of those patients with premature disease (men <55 years and women <65 years) who are living in the same household are also identified and invited to attend the cardiovascular prevention programme. Those first degree blood relatives of patients with premature coronary disease not living in the same household are supported through a postal relative's pack.

In usual care hospitals, coronary patients are identified in the same way and a random sub-sample is screened at baseline, but they do not receive any form of special preventive care.

The immediate impact of the cardiovascular prevention and rehabilitation programme will be assessed in the intervention hospitals at 16 weeks when coronary patients, their partners and blood relatives of patients with premature coronary disease living in the same household are assessed for lifestyle, risk factor control and use of drug therapies. Re-screening of the same random sub-sample of usual care coronary patients will also take place at 16 weeks.

At one year, all coronary patients, their partners and first degree blood relatives of patients with premature coronary disease living in the same household, both in intervention and usual care, will be assessed for lifestyle, risk factor control and use of drug therapies. The relatives of patients with premature coronary disease not living in the same household from both intervention and usual care hospitals will be followed up by postal questionnaires at one year to assess what action has been taken and with what results in terms of lifestyle, risk factor and therapeutic management. The comparison between intervention and usual care hospitals will show how effectively the EuroAction cardiovascular prevention and rehabilitation programme helps coronary patients and their families to achieve the lifestyle, risk factor and therapeutic targets for CVD prevention.

### High risk individuals and partners (primary care arm)

In intervention general practices, high risk individuals are identified as consecutive individuals, both men and women (50 years of age or older but less than 80 years), without a history of CVD who are (1) at high multifactorial risk [CVD risk  $\geq 5\%$  over 10 years (now or projected to age 60 years)], according to the HeartScore risk estimation model, and who are on no drug therapy; or (2) diagnosed with hypertension and/or dyslipidaemia and already on treatment with antihypertensive and/or lipid-lowering therapy; or (3) patients with diabetes on diet alone or on hypoglycaemic therapy. The partners of all these high risk individuals will also be identified and recruited to the programme.

The cardiovascular prevention programme will be delivered by specialist nurses supported by the HeartScore risk assessment and management software programme and related educational materials. The object is to achieve national and European lifestyle, risk factor and therapeutic targets for CVD prevention. The partners of high risk individuals living in the same household will be identified and supported through the same programme and will be screened at the end of the programme.

In usual care practices, high risk individuals will be identified but will not receive any form of special preventive care. A random sub-sample of high risk individuals will be screened at baseline. The partners of high risk individuals will not be contacted at baseline.

At one year, all high risk individuals and their partners, both in intervention and usual care, will be followed up and screened to assess targets achieved in terms of lifestyle, risk factor and therapeutic management. The comparison between intervention and usual care practices will show how effectively the EuroAction preventive cardiology programme helps high risk individuals and their partners to achieve the lifestyle, risk factor and therapeutic targets for CVD prevention.

All patients and their families from both hospital and general practice will be followed up for major non-fatal cardiovascular events and cardiovascular/total mortality.

## Appendix

### Organisational structure

#### Steering group

A scientific steering group approved the protocol and design of the study, as well as the content of the multidisciplinary cardiovascular prevention and rehabilitation programme, and is responsible for maintaining the scientific integrity of the trial. The following are members of the steering group: D Wood (London, UK, Chairman); G De Backer (Ghent, Belgium); D De Bacquer (Ghent, Belgium); M Buxton (Uxbridge, UK); I Graham (Dublin, Ireland); A Howard (Nice, France); K Kotseva (London, UK); S Logstrup (Brussels, Belgium); H McGee (Dublin, Ireland); M Mioulet (Nice, France); K Smith (Dundee, UK); D Thompson (Hong

Kong, China); T Thomsen (Glostrup, Denmark); and T van der Weijden (Maastricht, the Netherlands).

#### **National co-ordinators and primary care leaders**

The national co-ordinators for each country are also members of the steering committee. They are responsible for identifying and recruiting the hospitals and general practices, selecting principal investigators, obtaining ethics committee approval, appointing and supervising staff in the fieldwork and contributing scientifically to the publication of results. The EuroAction national co-ordinators and primary care leaders are as follows:

##### **National co-ordinators**

T Thomsen (Denmark); C Monpere (France); P Fioretti and A Desideri (deputy co-ordinator) (Italy); A Pajak and P Jankowski (deputy co-ordinator) (Poland); J De Velasco (Spain); T van der Weijden (the Netherlands); J Perk (Sweden); and D Wood (UK).

##### **Primary care leaders**

K Brockelmann (Denmark); S Brusaferrero (Italy); T Grodzicki (Poland); A Maiques (Spain); T van der Weijden (the Netherlands); and J Morrell (UK)

#### **Co-ordinating and Data Management Centre**

The Co-ordinating and Data Management Centre is the Department of Cardiovascular Medicine, National Heart and Lung Institute at Charing Cross Campus, Medical Faculty, Imperial College, London, UK (Head Professor David Wood). The following staff have specific

responsibilities as described: K Kotseva, senior clinical research fellow; C Jennings, study nurse co-ordinator; A Mead, chief dietitian; J Jones, superintendent physiotherapist; A Holden, physical activity co-ordinator; D Charlesworth, data manager; Kamal Pandaya, IT system development; Sally Graves, research administrator; Wendy Leacock, administrative assistant; Despoina Xenikaki, administrative assistant.

#### **Central laboratory**

Central laboratory analysis of total cholesterol, HDL cholesterol, triglycerides, glucose and HbA1c is undertaken in the Department of Pathological Biochemistry (Head of Department J Shepherd), Royal Infirmary, Glasgow.

#### **Statistical centre**

All statistical analyses will be undertaken by Professor D De Bacquer, statistician, from the Department of Public Health (Head of Department G De Backer), Ghent University, Belgium.

#### **Representatives of AstraZeneca**

T Bailey, Sue Leach and Dr A Dean.

*Professor David A Wood, Cardiovascular Medicine, National Heart and Lung Institute, Charing Cross Hospital, Imperial College London, Fifth Floor, Lab Block, Fulham Palace Road, London W6 8RF, UK. Tel. +44 (020) 8846 7352/ 8383 5518; fax +44 (020) 8383 5513/9; email: d.wood@ic.ac.uk*