INTRODUCTION

The aim of this study is to determine the factors responsible for the considerable variation in ischaemic heart disease, hypertension and stroke in Great Britain. It also seeks to determine the causes of these conditions in order to provide a rational basis for recommendations towards their prevention.

Funding

The British Regional Heart Study was originally supported by the Medical Research Council (1975-1985). It is currently a British Heart Foundation Research Group and receives additional support from the Department of Health. Both funding agencies have recently renewed their support for the study, for which we are very grateful.

Work in Progress

The Record Review for 2004 is now in progress in the 24 original practices and in the additional 1402 new practices currently caring for study participants. We are planning to send a postal questionnaire to surviving participants residing in the UK in 2005.

Heart Disease - The Evidence

On May 17th, a film crew visited the BRHS Headquarters to record footage for an educational documentary, ‘Heart Disease - The Evidence’. The programme, aimed at 14 - 16 year olds, will form a compulsory part of the GCSE science curriculum and will seek to give teenagers insight into how scientific studies work. The crew and producers spent the morning filming team members carrying out physical measurements, administering questionnaires, holding meetings, looking at blood samples, accessing questionnaires etc. In the afternoon, a series of interviews with the co-directors of the study were filmed, addressing issues such as diet, exercise, smoking, alcohol consumption and stress in relation to cardiovascular disease, as well as general issues to do with setting up and running a large scientific study. The programme will be released in 2005 and will appear on BBC2 as part of the Schools Programming.

Update on secondary prevention of CHD in practice

Using information from the questionnaire sent to study men in 2003, we have begun to examine the prevalence of secondary prevention medications among subjects with established CHD. The proportions of subjects with a history of MI who are receiving secondary prevention medications have increased since 2000; increases have been particularly marked for statins and ACE inhibitors, now being taken by 66% and 44% respectively, of men with previous MI. Aspirin is the most widely used agent, taken by 80% of men. Very few (3%) are not receiving some form of secondary prevention; 80% are now receiving two or more secondary prevention drugs. The prevalence of secondary prevention among men with uncomplicated angina is lower, offering some continued scope for improvement.

Lipoprotein(a) and risk of CHD

To determine whether circulating lipoprotein(a) concentrations are prospectively related to risk of coronary heart disease in the general population, we used the established BRHS nested case control
framework, measuring baseline lipoprotein(a) values in the stored serum samples of 596 men with major coronary events and of 1240 controls. Men in the top third of baseline lipoprotein(a) values (tertile cut-off >109 mg/L) had an odds ratio for coronary heart disease of 1.09 (95% confidence interval 0.86-1.38) compared with those in the bottom third (tertile cut-off <42 mg/L), after adjustments for age and town. The odds ratio was little changed after further adjustment for adult risk factors (0.99, 95% CI 0.76-1.28), and was not appreciably different in an analysis restricted to the 401 cases and 1022 controls without baseline evidence of coronary heart disease (odds ratio 1.18, 95% CI 0.89-1.56). We are currently preparing a meta-analysis of all relevant population-based prospective studies to set these results in context.

Intentional and unintentional weight loss and mortality

The relationship between intentional and unintentional weight loss and subsequent 7-year mortality in men aged 56-75 years was examined. ‘Unintentional’ but not ‘intentional’ weight loss was associated with increased mortality. Those who lost weight intentionally for personal reasons showed significantly lower all cause mortality than men who reported no weight change, largely due to a significant reduction in non-cardiovascular mortality. The benefit was most apparent in markedly overweight (≥ 28kg/m²) and younger (<65 years) men. Those who lost weight intentionally due to ill health showed increased mortality risk. No benefit or harm was seen for cardiovascular disease mortality in either group. Intentional weight loss carried out for personal reasons is associated with a significant reduction in total mortality.

Cigarette smoking, pipe/cigar smoking, smoking cessation and haemostatic and inflammatory markers

We have examined the effects of cigarette smoking, years since quitting smoking and pipe/cigar smoking on inflammatory and haemostatic markers in men aged 60-79 years with no history of myocardial infarction, angina, stroke or diabetes and who were not on warfarin. After adjustment for major cardiovascular risk factors, cigarette smoking was significantly associated with higher levels of inflammatory markers (C-reactive protein, white cell count, fibrinogen) haematocrit, blood and plasma viscosity and fibrinolytic factors (tissue plasminogen (t-PA) antigen and fibrin D-dimer) and lower levels of albumin than never smokers. Most inflammatory and haemostatic levels improved within 5 years of smoking cessation but took over 20 years to revert to levels of never smokers. Men who switched from cigarette to pipe or cigar smoking retained significantly elevated levels of white cell count and fibrinogen levels. The findings indicate that inflammation is an important mechanism by which cigarette and pipe/cigar smoking increase cardiovascular risk.

Determinants of glycated haemoglobin

Glycated haemoglobin (HbA1c) concentration is a marker of long-term blood glucose concentration and levels below those associated with diabetes have been related to increased all cause and CVD mortality in men. We have examined the influence of lifestyle and nutritional determinants of HbA1c in older non-diabetic men. Smoking is the strongest determinant of HbA1c with levels reverting to never smokers after >20 years cessation. Alcohol and physical activity showed significant inverse relationships. Waist circumference was positively associated with HbA1c and is a stronger determinant than BMI. Of the dietary factors examined, total fat, saturated fat and dietary cholesterol were significantly related to HbA1c after adjustment. Weak inverse associations were seen for vitamin C. No significant association was seen with fibre, carbohydrate, protein or fruit intake after adjustment.

Recent Publications available on request


**Papers in press**


Morris RW, Whincup PH, Papacosta O, Walker M, Thomsom A. Inequalities in coronary revascularisation during the 1990s - evidence from the British Regional Heart Study. *Heart*


**Presentations at meetings**

British Cardiac Society (Manchester 24th -- 27th May).

*Evaluating the potential effectiveness of high-risk strategies in the primary prevention of coronary heart disease.* Jonathan Emberson

*Inequalities in coronary revascularisation during 1990’s - Prospective study in older British men.* Richard Morris

With all good wishes on behalf of the BRHS team.

Professor Peter Whincup  Dr Goya Wannamethee  Dr Richard Morris

Co-directors of the BRHS