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. The British Regional Heart Study was originally supported by the Medical Research Council (1975-1985). It is currently a British Heart Foundation Research Group with additional support from the Department of Health.

Work in Progress

The results from the questionnaire sent out earlier this year, which obtained a final response rate of 82%, are now available for analysis. Over the next 3 months we will be seeking funding for future work which we will continue to inform you about in our regular newsletter.

Diabetes and increased risk of CVD events and mortality

Diabetes is associated with a markedly increased risk of further cardiovascular events and death, in those with and without established coronary heart disease (CHD). By combining cross-sectional data from the 1998-2000 re-screening of men with equivalent data for women from the British Women's Heart and Health Study, we examined the extent of primary and secondary CHD prevention in people with and without diabetes. We found that in individuals without previous CHD, those with diabetes were more likely to receive aspirin, statins, beta-blockers, ACE inhibitors and antihypertensive treatment than those without diabetes, although the prevalence of use was low. In individuals with CHD (who had higher overall rates of drug use), diabetics were no more likely than non-diabetics to be receiving most CHD risk-reducing treatments. Improvement in secondary prevention for patients with diabetes may therefore depend on achieving better treatment for all CHD patients. However, opportunities for improving preventive care of people with diabetes may be greater as they are less numerous and have contact with a wide range of both primary and secondary care services.
Alcohol and adiposity: effects of quantity and type of drink and time relation with meals

It has been suggested that the effects of alcohol on body weight and fat distribution may be influenced by the quantity and type of drink and may differ according to whether the alcohol is consumed with meals or not. We have examined the cross-sectional association between alcohol intake, patterns of drinking and adiposity (body mass index, waist-to-hip ratio, waist circumference and percentage body fat) in men aged 60-79 years with no recall of history of myocardial infarction, stroke or diabetes. Our findings indicate that higher alcohol consumption (>21 units/week) is positively associated with general adiposity (BMI, % body fat) and to a greater extent with central adiposity (WHR, waist circumference) irrespective of the type of drink and whether the alcohol is drunk with meals or not.

Comparison of risk of cardiovascular disease and mortality in older men with diabetes and in men with coronary heart disease

There is evidence that cardiovascular disease (CVD) risk in diabetics is equivalent to that associated with prior myocardial infarction (MI). We have examined the relationship of diabetes and/or coronary heart disease (CHD; myocardial infarction and/or angina) to the incidence of major CHD and stroke events and total mortality. Men with diabetes showed significantly increased cardiovascular and total mortality risk compared to non-diabetics with no CHD but lower risk than men with prior MI only. Men with diabetes only have a CVD risk intermediate between men with angina and men with prior MI. Men with both diabetes and CHD showed exceptionally high risk.

Insulin resistance and hemostatic and inflammatory markers in elderly non-diabetic men

We have examined the relationship between insulin resistance (homeostasis model assessment - HOMA), the metabolic syndrome and haemostatic and inflammatory markers in non-diabetic men aged 60-79 years with no history of coronary heart disease or stroke and who were not on warfarin treatment. Insulin resistance and the metabolic syndrome were significantly associated with increased coagulation factors, endothelial markers, viscosity and markers of inflammation. The excess risk of cardiovascular disease associated with insulin resistance may in part be explained by these effects on haemostasis and inflammation.

Inequalities in access to coronary revascularisation

Our two-yearly record review has for many years collected data on revascularisation procedures (coronary artery bypass grafts and coronary angioplasty). We have investigated incidence of revascularisations from the 1992 questionnaire until the end of 1999 and have discovered that men over 65, men from households with no car, men living in council houses and men living outside the south of England, were less likely to receive revascularisation procedures than other men, for equivalent levels of clinical need. Such findings are important for the National Service Frameworks on Coronary heart disease and Older People, where the monitoring of potential inequalities in access to care is given high priority.

Passive smoking and CHD risk

Assessment of the effect of passive smoking on coronary heart disease (CHD) risk has generally been based on exposure to cigarette smoking by a domestic partner, which is consistently associated with an increase in CHD risk of about 25-30%. However, few studies have used biological markers such as cotinine (measured in blood or saliva) to examine the relation between passive smoking exposure and CHD. We have examined the relation of baseline serum cotinine to CHD incidence in 4729 men in 18 towns. Among 2105 men who were non-smokers at baseline, cotinine levels were divided into equal fourths. Relative hazards (95% confidence intervals) for CHD in the second, third and fourth quartiles of cotinine level compared with the first were 1.46 (1.01 to 2.13), 1.52 (1.04 to 2.22) and 1.65 (1.12 to 2.43) respectively, after adjustment for established CHD risk factors. Hazard ratios (cotinine 0.8-14.0 vs 0-0.7 ng/ml) were particularly increased during the first (3.82, 95% CI 1.36, 10.73) and second five year follow-up periods (1.85, 95%CI 1.04, 3.29) compared with the later periods. These estimates of the influence of passive smoking exposure on CHD risk appear somewhat greater than those based on partner smoking. Moreover, the markedly higher estimates obtained during the first ten years of follow-up (when population smoking prevalence was still high) compared with the second ten years suggest that long-term prospective studies which have examined the effect of passive smoking against a background of declining smoking prevalence may have underestimated the true effect of high intensity passive smoking exposure on CHD risk.
BRHS Update

Mary Walker will retire from her post as Co-Director at the end of the year, after 28 years with the study. Mary has made an enormous contribution to the success of the study and she has been made an Honorary Senior Research Fellow in the Department of Primary Care and Population Sciences. Mary will continue to work with the team in a supportive role, largely through email contact. Dr Richard Morris (Co-Director/Senior Lecturer in Medical Statistics) will take over the day to day management of the study at the Royal Free. Lucy Lennon, who has been a member of the team for 10 years, will be responsible for all aspects of the study’s administration.

Jon Emberson (BHF Junior Research Fellow) has been awarded £10,000 by the BUPA Foundation for his work in Epidemiology entitled: “Re-evaluating the impact of population and high risk strategies for CHD Prevention” which was summarised in our previous Newsletter 50.

Fiona Lampe was awarded her PhD in October 2003 for a thesis on “Chest pain on questionnaire and coronary heart disease in British men”. Data from the BRHS questionnaires and medical record reviews were used to examine the prevalence, prognosis, and diagnosis of angina from a population-based perspective. Diagnosed angina and angina symptoms (effort-induced chest pain) were common. Angina was a very strong risk factor for major CHD and cardiovascular events, but prognosis was better than that for definite MI. Excess risk diminished with increasing event-free survival, and classical risk factors (age, smoking, blood pressure, cholesterol) determined the level of risk. Men with a diagnosis of angina were at higher risk than those with symptoms only. Nevertheless, among men without diagnosed CHD, effort-induced chest pain was strongly predictive of major CHD events, emphasising its importance as an indicator of medically unrecognised CHD. Effort-induced chest pain increased risk whether or not all the additional classical angina criteria were fulfilled, but CHD was more likely to be diagnosed if symptoms conformed to the classical definition. This suggests the need for re-appraisal of angina diagnostic criteria. The results did not suggest an important role of social class in the prognosis, diagnosis or investigation of angina. The strongest determinant of referral to secondary care was age: the likelihood of referral fell substantially with increasing age. An examination of trends over the period of study (1978-1997) showed encouraging declines in the major CHD event rate and the prevalence of angina symptoms, and evidence of improvements in the prognosis of angina and MI. However the prevalence of diagnosed CHD remained stable (due to improvements in both survival and diagnosis), emphasising the ongoing burden of CHD in Britain and the need for secondary preventive treatment.

Recent Publications available on request


Papers in press


Presentations at meetings

**Society of Social Medicine, Edinburgh September 2003**

**Presentation**

Has the impact of passive smoking on CHD risk been underestimated? – evidence from the British Regional Heart Study. Whincup PH et al.

**Poster**


With all good wishes and seasons greetings, on behalf of the BRHS team.

Professor Peter Whincup                   Mrs Mary Walker

Dr Goya Wannamethee                     Dr Richard Morris