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

Postal Questionnaire

A questionnaire, despatched in January, to 4899 surviving participants has obtained an 81% response. A small number of replies continue to arrive while the coding process is in progress. We hope to have all data entered by August. This new information includes reported new diagnoses, disabilities and changes in risk factors for CVD, particularly weight and exercise. Details of secondary prevention of CVD have also been obtained.

Website Update

The BRHS website was re-launched in July 2002 and since then has been accessed over 132,000 times from approximately 6000 distinct hosts (i.e. different computers). Visitors to the site have been mainly from UK registered domains although web-traffic is increasing from other European, USA, Canadian and Australian registered domains. The Website has recently been revised to improve access to documents and publications produced by the study and to facilitate the dissemination of research evidence. It provides up to date information on the design and content of the study, the latest Newsletter, the BRHS publication list linking to the appropriate abstracts and team members contact information. All publications have been keyword indexed to aid retrieval of relevant articles. Data collection forms used at both screening phases, questionnaires and record sheets can now be downloaded from the site.

British Regional Heart Study Newsletter No. 50

Celebrating 25 years of research

With this 50th Newsletter we send our greetings and thanks to all our colleagues in General Practice who have made this study possible over the last 25 years. Our cohort of survivors (63%) is now aged 65-84 years and all but 67 are still registered with a GP in Great Britain.
Re-evaluating the impact of population and high risk strategies for CHD prevention.

The potential effectiveness of “high-risk strategies” in the primary prevention of CHD has increased markedly in recent times following the increased use of risk scoring equations (e.g Framingham prediction charts) as well as the availability of several effective preventive treatments. However, the likely effectiveness of these policies compared with population strategies aimed at producing a “downward shift” in the population distribution of established risk factor levels has been little studied.

We examined the likely effects of various high-risk strategies of prevention and compared them with the potential effectiveness of strategies directed at the population control of blood pressure and blood total cholesterol levels (taking into account estimation bias introduced by measurement imprecision). Our results indicated that the effectiveness of “high-risk” strategies of prevention, though appreciable, is likely to be limited, and that increased emphasis should be placed on reducing the key risk factors throughout the population.

Overweight, obesity and weight change in middle-aged men: impact on cardiovascular disease and diabetes

The impact of BMI and of weight change on diabetes and major CV-related morbidity and mortality were examined using a wide spectrum of CVD outcomes (including stroke and angina). We also considered whether the effects of weight change are dependent on initial BMI, with particular reference to overweight and obese subjects. Risk of major CVD and diabetes increased significantly with increasing overweight and obesity and were also associated with weight gain. Weight loss was associated with a lower risk of diabetes than maintaining a stable weight, irrespective of initial weight. The benefits of weight loss on CVD risk were dependent on initial BMI and age. Weight loss in overweight middle-aged men is associated with reduction in risk of major CVD events and diabetes, particularly in severely overweight younger men, but in obese men is associated with lower risk of diabetes. Duration and severity of obesity may limit the benefits of weight reduction in older men.

Overweight and obesity and the burden of disease and disability in elderly men

Using the National Institute of Health and WHO guidelines for overweight (BMI 25-29.9 kg/m²) and obesity (BMI ≥ 30kg/m²), we examined the prevalence of disease burden and disability associated with overweight/obesity in British men aged 60-79 years. Seventeen per cent of these men were categorised obese, with a further 52% overweight. Prevalence of cardiovascular (CV) risk factors (hypertension, low HDL-cholesterol, high insulin resistance) increased significantly with increasing BMI. Men in the normal weight range (20.0-24.9 kg/m²) had the lowest prevalence of ill health, and the prevalence of most health outcomes increased in accordance with increasing degrees of overweight/obesity. Compared with normal weight men, obese men showed a twofold risk of major CVD and locomotor disability and were nearly three times as likely to have diabetes, CV interventions or to be on CV medication. Over 70% of the prevalence of high insulin resistance and 50% of cases of low HDL-cholesterol were attributable to overweight/obesity as were over a third of cases of diabetes and hypertension, a quarter of locomotor disability and a fifth of major CVD. In elderly men, overweight and obesity are associated with a significantly increased burden of disease, in particular CV-related disorders and disability.

Modifiable lifestyle factors and the onset of and recovery from mobility difficulty in older men

Predictors of the onset of and recovery from mobility difficulty and the effects of lifestyle changes in later life on mobility status were examined. Mobility difficulty was defined as difficulty in any one or more of the following: able to get outdoors, to walk 400 metres or to climb stairs. In the 4430 men with no reported mobility difficulty at a postal questionnaire in 1992 (Q92), 10.5% reported mobility difficulty 4 years later. Chronic conditions were strongly associated with mobility difficulty. Lifestyle factors (smoking, obesity, physical inactivity, heavy drinking and manual social class) were significantly and independently associated with onset of mobility difficulty even after further adjustment for chronic diseases. Ex-smokers showed similar risk of mobility difficulty to never smokers. Among the 645 men with reported mobility difficulty at Q92, the recovery rate over 4 years was 27.1%. Taking up or maintaining physical activity was associated with increased odds of recovery. Obesity was not associated with recovery rates but weight gain was associated with reduced likelihood of recovery. Smoking, obesity, physical inactivity and heavy drinking in middle-aged men are associated with increased mobility difficulty in later life. Taking up or maintaining physical activity and prevention of weight gain may improve the likelihood of recovery from mobility difficulty.
On March 7th 2003 the Heart Study celebrated its 25th Anniversary with a meeting in the Sir William Wells Atrium, Royal Free Hospital. Over 100 invited guests attended, including ex members of staff and collaborators. Prof. Anne Johnson (HoD) chaired and introduced the first session, with Prof. Sir George Alberti giving the opening address. Presentations were given on the origins of the study (Prof. Gerry Shaper), and the practicalities of carrying out the fieldwork and follow-up (Mary Walker). Further research papers were given by current members of staff (Jonathan Emberson, Dr Fiona Lampe, Dr Richard Morris, Dr Goya Wannamethee, Prof. Shah Ebrahim and Prof. Peter Whincup). A study participant Mr Colin Cookman and two General Practitioners (Dr Robin Graham from Wigan and Dr David Elliott from Guildford) who have been involved in the research since 1978 provided personal perspectives on what it is like to be involved in this national study.

Prof. Peter Whincup closed the meeting by outlining the future plans for the study. These include looking at the effect of obesity on an ageing cohort, assessing the impact of newer risk markers related to nutrition, inflammation, haemostasis, insulin resistance and adiposity and comparing the relative importance of a wide range of social, biological and behavioural risk factors for chronic disease in women and men. Plans to establish a DNA databank to examine the extent of genetic influences on risk factor phenotypes were outlined. Prof. Leon Fine, the Dean of Clinical Sciences, UCL, closed the meeting affirming that after 25 years, the BRHS continues to address interesting and important questions about the causes and prevention of cardiovascular disease and the resources required to meet the needs of the retired population.
Recent Publications available on request


Papers in press


Presentations at meetings

Cardiovascular Disease Prevention VI, Kensington, London March 12-14th 2003
1. Re-assessing the contribution of serum cholesterol, blood pressure and cigarette smoking to the aetiology of coronary heart disease: impact of regression dilution bias. JR Emberson et al
2. The north-south gradients in Britain for stroke and CHD – are they explained by the same factors? R Morris et al.
3. The impact of overweight/obesity and weight change on cardiovascular disease and diabetes in middle-aged men. SG Wannamethee et al.
4. ‘Do genetic factors really matter?’ Speaking against the motion AG Shaper.

British Cardiac Society Glasgow April 30th 2003
1. Re-assessing the contribution of serum cholesterol, blood pressure and cigarette smoking to the aetiology of coronary heart disease: impact of regression dilution bias. JR Emberson et al.
2. The Framingham risk score overestimates CHD risk in British middle-aged men. PH Whincup et al

Faculty of Public Health Medicine Annual Scientific Meeting, Eastbourne June 24-26th 2003.
1. The new burden of diabetic care. M Walker et al

With all good wishes (for the next 25 years)

Professor Peter Whincup
Mrs Mary Walker
Dr Goya Wannamethee