Hot topics in cardiovascular disease:
Challenges and opportunities

One-day meeting for health professionals in primary and secondary care

April 24, 2008
Royal College of Physicians, Regent’s Park, London

Delegate booklet
Supported by an unrestricted educational grant from Takeda UK
Chairman's introduction

Cardiovascular disease remains the leading cause of death in the UK and a key focus for all sectors of the NHS.

Considerable progress has been achieved in the prevention and treatment of cardiovascular disease. However, health care professionals still face considerable challenges in improving delivery of effective services in line with the National Service Frameworks, clinical guidelines from NICE and professional bodies, and the new Stroke Strategy.

Today's conference will tackle five current major areas in cardiovascular disease in the UK: lipids, stroke, heart failure, hypertension and diabetes.

We have a distinguished panel of speakers from secondary and primary care. They will update us on the evidence base to guide management of these conditions and will also pick up on relevant practical issues for primary care and key interface issues.

The conference is accredited for Continuing Professional Development by both the Royal College of Physicians and the Royal College of Nursing. It is intended to be an interactive meeting and there will be an opportunity for questions from the floor after each group of presentations. Please do not hold back from contributing to these discussion sessions.

Professor Martin R. Cowie

Professor Martin R. Cowie, chairman, is Professor of Cardiology, National Heart & Lung Institute, Imperial College London, and Honorary Consultant Cardiologist, Royal Brompton Hospital. He received his medical degree, Bachelor of Medical Biology, and doctorate degrees from the University of Aberdeen, and holds a Masters of Science degree in epidemiology from the University of London.

Professor Cowie lectures widely in the UK and Europe on cardiovascular disease. He is currently Chair of the British Society for Heart Failure, and of the Education Committee of the Heart Failure Association of the European Society of Cardiology. His major clinical and research interests are in the delivery of efficient and effective care for patients with heart failure. He has a keen interest in the process of improving the quality of health care and facilitating the diffusion of knowledge and up-to-date practice throughout the NHS.

Professor Cowie has worked as an advisor to the Department of Health, the National Institute for Health and Clinical Excellence (NICE), the Department of Work & Pensions, and the Healthcare Commission. He was clinical adviser for the NICE clinical guideline on the management of chronic heart failure.

He has published widely in cardiovascular medical journals and contributed chapters for medical textbooks, including sections on heart failure for the Oxford Textbook of Medicine.
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<td>Professor of Cardiology, National Heart &amp; Lung Institute, Imperial College London, and Honorary Consultant Cardiologist, Royal Brompton Hospital, London</td>
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<td>Professor John Betteridge</td>
<td>Professor of Endocrinology and Metabolism, Department of Medicine, University College London and Consultant Physician, University College Hospitals, London</td>
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<td>Dr Jonathan Morrell</td>
<td>General Practitioner, and Hospital Practitioner in Cardiology, Hastings</td>
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<td>Professor Gary Ford</td>
<td>Professor of Pharmacology of Old Age and Director of the Clinical Research Centre, University of Newcastle upon Tyne; Consultant Stroke Physician, Newcastle upon Tyne Hospitals NHS Foundation Trust and Director of the UK Stroke Research Network</td>
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<td>Gill Cluckie</td>
<td>Stroke Specialist Nurse, Guy's and St Thomas' NHS Foundation Trust, London</td>
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<td>Dr Theresa McDonagh</td>
<td>Consultant Cardiologist with an interest in heart failure, Royal Brompton Hospital, London</td>
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<td>Dr Nigel Rowell</td>
<td>General Practitioner, and Clinical Assistant in Cardiology, James Cook University Hospital, Middlesbrough</td>
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<td>Professor Neil Poulter</td>
<td>Professor of Preventive Cardiovascular Medicine and co-Director of the International Centre for Circulatory Health, Imperial College London, and Honorary Consultant Physician and Epidemiologist, Peart-Rose Hypertension Clinic, St Mary’s Hospital, London</td>
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<td>Dr Terry McCormack</td>
<td>General Practitioner, Whitby; Chairman of the Primary Care Cardiovascular Society</td>
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<td>Dr Miles Fisher</td>
<td>Consultant Physician, Glasgow Royal Infirmary</td>
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<td>Sara Da Costa</td>
<td>Nurse Consultant in Diabetes, Worthing &amp; Southlands NHS Trust</td>
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Update on the evidence for lipid management

Cholesterol and particularly LDL-cholesterol is causal in atherosclerotic disease. Although initial trials of lipid-lowering were equivocal, the arrival of the statin group of drugs, which proved to be highly effective and well-tolerated, enabled definitive randomised controlled trials (RCTs) to be performed. These trials in primary and secondary cardiovascular disease prevention showed that statin therapy not only reduced cardiovascular events but also overall mortality. This benefit was seen in all sub-groups of patients. There have been trials in specific populations including hypertension (ASCOT) and diabetes (CARDs) showing benefit for primary prevention. A relative surprise to emerge from the statin trials is the positive impact in reducing stroke.

Despite the benefit of statin therapy, a residual risk was observed. For instance, in the Heart Protection Study the residual risk in diabetic patients with coronary heart disease (CHD) on simvastatin remained higher than in CHD patients without diabetes on placebo. This residual risk, together with information from the meta analysis performed by the Cholesterol Trialists' Collaboration, suggested that perhaps more benefit could be achieved with more intensive cholesterol lowering. A recent meta analysis of four studies that compared conventional lipid-lowering with more intensive treatment in patients with chronic stable CHD or acute coronary syndromes points to a further 18% benefit in reducing stroke and a further 16% benefit in reducing CHD with more intensive treatment.

Based on this new information from clinical trials the Joint British Societies' guidelines intensified the targets for cholesterol and LDL to 4 and 2mmol/L respectively. This has not been received well in some quarters but is based on the available evidence from clinical trials.

Most patients will respond to statin therapy alone and physicians are under pressure to choose simvastatin on cost grounds. If targets are not met more effective statins (eg, atorvastatin and rosuvastatin) should be used. It is possible to add ezetimibe, a specific inhibitor of cholesterol absorption, which produces a further 20% reduction in LDL, if goals are not met on maximum statin dose or maximum tolerated dose.

Information for increasing HDL is not available from RCTs. However, most physicians would try to increase HDL in high risk individuals. Diet and lifestyle measures are used first. The best drug is nicotinic acid but this has numerous side effects. A new approach is to give an extended release nicotinic acid preparation together with an inhibitor of the flush.

There is good RCT evidence for the fibrate gemfibrozil but this drug should not be used with a statin because of increased risk of muscle problems. RCT evidence for the other fibrates is disappointing but better for bezafibrate than fenofibrate. These fibrates can be added to statin therapy. The author's approach to low HDL is to target non-HDL cholesterol as a secondary target if LDL is to goal. Similarly if triglycerides remain elevated with LDL to goal, non-HDL cholesterol is the next target.

Further reading:

Professor John Betteridge is Professor of Endocrinology and Metabolism, Department of Medicine, University College London and Consultant Physician, University College Hospitals, London. Professor Betteridge is a past Chairman of the British Hyperlipidaemia Association (now HEART UK) and past President of the Council on Lipids in Clinical Medicine at the Royal Society of Medicine. He is a committee member of the European Chapter and an elected Distinguished Fellow of the International Atherosclerosis Society. He is a Fellow of the American Heart Association and a member of numerous international bodies, including the European and American Diabetes Associations and the European Atherosclerosis Society.

Professor Betteridge is co-chair of the executive committee of CARDS and is the UK principal investigator and member of the International Steering Committee for PROactive. He is a member of the Joint European Society of Cardiology and European Association for the Study of Diabetes taskforce group on Diabetes and Vascular Disease and was a member of the Medical Research Council Steering Committee for the UKPDS. He is a member of the Project Grants Committee of the British Heart Foundation.

Professor Betteridge’s main clinical interests are in the care of patients with diabetes mellitus and patients with lipid disorders. His main research interests relate to the pathogenesis of atherosclerosis, and in particular the role of lipoprotein metabolism. He has authored over 300 publications in peer-reviewed journals.
How to make it happen

The impact of the landmark statin trials has ensured that lipid-lowering has become a core activity in the day to day lives of all health professionals involved in the prevention of cardiovascular disease. The spectrum of risk for which lipid-lowering is suggested includes patients with coronary heart disease (CHD), those with cerebrovascular and peripheral arterial disease, those with diabetes and those with a 10-year cardiovascular risk in excess of 20%. Recent national initiatives, culminating in the new GMS contract for GPs, are in place to maximise the implementation of evidence-based practice. The results have been impressive and by April 2006, nearly 70% of non-excepted patients with CHD achieved a total cholesterol of <5.0mmol/L, an achievement that compares favourably with other international audits.

For the majority of practitioners, the current focus of lipid-lowering in at-risk individuals is centred on total cholesterol reduction, despite recognition that low density lipoprotein cholesterol (LDL-C) is the chief pathophysiological moiety involved in the atherosclerotic process and understanding of the protective effects of raised levels of high density lipoprotein cholesterol (HDL-C) and the influence of triglyceride-rich lipoproteins.

Unfortunately, the cholesterol target of the Quality and Outcomes Framework is out of kilter with the latest recommendations of the Joint British Societies (which set targets of <4.0mmol/L for total cholesterol and <2.0mmol/L for LDL-C and desirable values for HDL cholesterol and triglycerides) and the increasing amount of evidence from trials that explore the lower reaches of LDL-C attainment.

Primary care lipid targets need to evolve in time to reflect national standards. More high-risk individuals need to be identified for primary prevention and secondary prevention should be maximised in patients with stroke and peripheral arterial disease, who fall behind the standards set for CHD. With lower targets and lower thresholds for treatment ultimately driving increasing contractual demands, practitioners will require a range of strategies to ensure target achievement. Dietary and drug adherence are clearly important but in the real world of side effect issues, drug interactions and biological and measurement variability, responses to lipid lowering treatments are not always uniform. Practitioners will need to be skilled in the use of available statins and other lipid-lowering agents either as monotherapy or, increasingly, in combination.

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<td>CHD</td>
<td>26.7</td>
<td>68.8</td>
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<td>CVA/TIA</td>
<td>13.4</td>
<td>61.3</td>
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<td>DM</td>
<td>31.8</td>
<td>73.8</td>
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Percentage of non-excepted patients in England achieving total cholesterol of <5mmol/L (QOF website 28/9/07)

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<tr>
<th></th>
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<th>HDL-C</th>
<th>TG</th>
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<tr>
<td>Statins</td>
<td>20-55%↓</td>
<td>5-10% ↑</td>
<td>7-30% ↓</td>
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<tr>
<td>Fibrates</td>
<td>5-20% ↓</td>
<td>10-20% ↑</td>
<td>20-50% ↓</td>
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<tr>
<td>Resins</td>
<td>10-20%↓</td>
<td>3-5% ↑</td>
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<tr>
<td>Nicotinic acid</td>
<td>5-25% ↓</td>
<td>15-35% ↑</td>
<td>20-50% ↓</td>
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<tr>
<td>Ezetimibe</td>
<td>15-20%↓</td>
<td>(↑)</td>
<td>(↓)</td>
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<tr>
<td>CETP inhib.</td>
<td>8-17% ↓</td>
<td>46-106%↑</td>
<td>7-19% ↓</td>
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Effects of lipid-lowering drugs
Dr Jonathan Morrell has been a General Practitioner for 29 years and is now based in Hastings where he is also a hospital practitioner in cardiology. He was a founding member of both HEART UK and the Primary Care Cardiovascular Society and is also a member of the British Cardiovascular Society. He is executive editor for the 'Drugs in Context' publications group and is an editorial board member, referee and contributor to a range of other medical journals. He is the author of 11 books, mostly on the prevention of heart disease, including the recently published 'Lipids - Your Questions Answered', 'Best Medicine Simple Guide to Cholesterol' and 'Pocket Science - Lipid Disorders'.

Dr Morrell's current research interests include the European Society of Cardiology EUROACTION project, the REACH Registry and the IDEA and INSPIRE-ME studies.
What's new in stroke care?

The care of stroke patients has undergone great change in the past 20 years and can be anticipated to undergo radical change in England with implementation of the recently published national Stroke Strategy and forthcoming NICE guidance on the management of acute stroke and transient ischaemic attack.

Stroke can be effectively prevented or delayed in most cases through good management of hypertension, atrial fibrillation and other conventional vascular risk factors. Following transient ischaemic attack, early assessment of patients is necessary to initiate early risk factor modification and to detect symptomatic severe carotid stenosis. Urgent carotid endarterectomy within two weeks of symptoms reduces the subsequent 15% risk of disabling stroke in these patients. Delivering thrombolysis with intravenous alteplase within three hours of symptom onset to eligible acute ischaemic stroke patients requires urgent assessment and brain imaging. This treatment is associated with a 14% absolute increase in survival with no or minimal disability.

Organised acute and rehabilitation stroke unit care reduces death and disability and should be provided to all patients. Aspirin should be commenced as soon as possible where cerebral haemorrhage has been excluded to reduce recurrent stroke. Early stroke care focuses on mobilisation, dysphagia management and the prevention of complications, particularly pneumonia and venous thromboembolism.

Evidence for the efficacy of specific rehabilitation interventions, such as constraint therapy, indicates that considerable brain plasticity is present in many adult stroke patients. More research is necessary to provide a good evidence base for interventions to reduce long-term disability and maintain cognitive function in stroke survivors.
Professor Gary Ford is Professor of Pharmacology of Old Age and Director of the Clinical Research Centre, University of Newcastle upon Tyne. He is also Consultant Stroke Physician and Clinical Director of Research and Development in the Newcastle upon Tyne Hospitals NHS Foundation Trust.

Professor Ford is a graduate of Cambridge University and King’s College Hospital Medical School, London. He undertook a Clinical Pharmacology Fellowship at Stanford University, California and was a recipient of an American Federation of Aging Research Fellowship in Geriatric Clinical Pharmacology. He returned to the UK in 1992 and established an acute stroke unit and stroke rehabilitation service in Newcastle, which accepts all adult patients with suspected stroke.

Professor Ford’s current research interests include interventions to improve early diagnosis of stroke and increase access of stroke patients to acute pharmacological interventions, and the study of ageing changes in cerebrovascular and cardiovascular pharmacodynamics. In June 2005, he was appointed Director of the UK Stroke Research Network with the Coordinating Centre based in Newcastle upon Tyne.
Implementing good practice in stroke care

There have been a number of drivers for change within stroke care in the UK in the past few years. These have included the National Audit Office report in 2005, which identified improvements that needed to be made to stroke care delivery, stroke staffing levels and the prevention of long-term disability from stroke. The recently published national Stroke Strategy highlights areas where significant changes are required in stroke care delivery across the pathway of the stroke patient and how these might be achieved. In the light of these reports, stroke services are now in the position of identifying where their service is performing well and where change is required.

These reports provide many opportunities to impact service delivery. However, there are also many challenges in implementing change to provide best practice in stroke care. The challenges for stroke services include engaging with Trust management and PCT commissioners about the service provision, tariff and community service provision for stroke patients. There are also challenges in identifying and implementing new ways of working or innovative practice across the patient pathway that may have significant benefits for length of stay and quality of rehabilitation. Many stroke services can identify areas for improvement using audit, specifically the National Sentinel Stroke Audit. This also, however, creates challenges in how services can be improved at both organisational and patient level.

This presentation will examine some of the key challenges and opportunities in stroke service development and care and offer examples of how these can be tackled to improve practice standards.

Further Reading:

Gill Cluckie is Stroke Specialist Nurse at Guy’s and St Thomas’ NHS Foundation Trust, London. She received her Bachelor of Nursing degree at Glasgow University in 1993 followed by MSc and rehabilitation nursing qualifications. She has been working at St Thomas’ Hospital stroke unit since 2000 and has been key in implementing acute stroke unit care and a thrombolysis service for stroke within the Trust. She has been involved in the educational requirements for this service, including training ambulance personnel and developing nursing skills for the service.

Ms Cluckie is an independent prescriber and recently participated in the King’s Fund stroke leadership programme. She was on the management group of the Modernisation Initiative, a local project to improve stroke services across two London boroughs. She is on the steering group for the Royal College of Physicians Stroke Peer Review project and is providing clinical advice to the Healthcare for London project team on developing a pan-London commissioning strategy for stroke services.
Modern management of heart failure

The modern management of heart failure starts with a secure diagnosis, normally validated by echocardiography to prove that cardiac dysfunction is the cause of the patient's symptoms and signs. The use of BNP should facilitate access to a more rapid diagnosis.

Following the diagnosis of chronic heart failure due to systolic dysfunction, the majority of patients are started on angiotensin converting enzyme inhibitors (ACEIs) (or angiotensin receptor blockers [ARBs], if ACEI intolerant) and beta-blockers (BB).

Over the last few years many more drug and device therapies have become available for patients who remain symptomatic despite good baseline therapy. Regarding drug therapy to add, evidence exists for spironolactone, the ARB candesartan and digoxin. Spironolactone was added to patients with CHF in NYHA class III and IV and compared with placebo in the RALES trial. This addition improved all-cause mortality. Following publication of this trial, the drug was widely taken up in the more "real-world" heart failure patients rather than the clinical trial prototypes, with considerably higher rates of hyperkalaemia. The addition of spironolactone to ACEI and BB in heart failure patients needs careful monitoring of renal function afterwards.

The ARBs valsartan and candesartan have both been used in randomised controlled trials versus placebo in patients with continuing symptoms. In the VAL-HeFT trial the addition of valsartan significantly reduced the composite morbidity and mortality primary endpoint. However, there was a concern of harm occurring in the group of patients treated with an ARB, ACEI and BB.

One of the three arms of the CHARM Study – "CHARM-Added" – examined the effect of adding candesartan to ACEI and BB versus placebo in patients in NYHA class II and III heart failure. Candesartan significantly reduced the primary endpoint of cardiovascular death or hospitalisation for heart failure. Again there was a cost, in terms of renal dysfunction. This is also an approach which can be used with appropriate patient monitoring.

There is also evidence that digoxin can reduce hospitalisations for heart failure in patients with sinus rhythm, especially in those with large ventricles.

Other pharmacological approaches to ongoing symptoms with signs of fluid retention involve alteration of loop diuretics and the addition of diuretics acting at differing sites within the nephron, such as thiazides and metolazone.

Device therapy, in particular cardiac resynchronisation therapy (CRT), has also proved beneficial in selected patients with ongoing symptoms in NYHA class III or IV heart failure who have a wide QRS and/or ventricular dyssynchrony echocardiographically. Many small studies have shown that these patients benefit both symptomatically and haemodynamically from CRT. Two large randomised controlled trials (COMPANION and CARE-HF) comparing device therapy to optimal pharmacological treatment also confirm that CRT or CRT-D improve patient outcomes in these patients.

Finally, for a selected few patients, cardiac transplantation remains an option, sometimes also involving LV assist devices (LVADs) as a bridge to this. Permanent use of LVADs as "destination" therapy is not usually available in the UK and is confined to a few centres with a research interest in this area.

The treatment for heart failure with preserved systolic function is less advanced than systolic dysfunction but evidence is now emerging for the use of ACEI, ARB and BB. No evidence exists for device therapy, to date.

Above all it should be remembered that for optimal outcomes for patients with heart failure, therapy should be delivered by a multiprofessional team working across all sectors of care.
Dr Theresa McDonagh is a Consultant Cardiologist with an interest in heart failure at the Royal Brompton Hospital, London. Clinically, she has a long track record in heart failure. In addition to having a hands-on input in clinical heart failure, she has an active research profile in the epidemiology of left ventricular dysfunction and in the clinical utility of the novel biomarkers in both the diagnosis and prognosis of heart failure.

Dr McDonagh is currently chair-elect of the British Society for Heart Failure and has previously served as a councillor and treasurer. She has taken a particular interest in developing clinical standards for heart failure and, through the Specialty Advisory Committee in Cardiology, has been involved with developing the heart failure curriculum for subspecialty cardiology registrar training. In addition, she has been part of the group moving the BSH Heart Failure Audit forward.
Primary care's changing role in heart failure

Over the last 20 years there has been a major shift in emphasis for the management of six main disease areas: stable ischaemic heart disease; diabetes; hypertension; asthma; COPD; and epilepsy. While long-term follow-up of patients with these conditions used to be undertaken in hospital outpatient clinics, and often by relatively inexperienced senior house officers, during the 1980s and 1990s there was a drift of management to GP practices. However, this change has often taken place in a haphazard and unplanned way.

The new GP contract in 2004 incentivised GPs for the management of these long-term conditions. But were the incentives for the appropriate parameters? Were GPs skilled enough to take it on? And was the correct evidence applied?

Heart failure is difficult to diagnose and manage. What help has been given to GPs to enable them to take on the management of this condition? Has the right specialist back-up been available? Why are patients with cancer so much better catered for at the end of their life than those with heart failure? How does the future shape up and what challenges does the GP face? Are “polyclinics” the answer and what might an “ideal model of care” look like?

The presentation will explore all these themes.
Heart failure

Notes:

Dr Nigel Rowell

Dr Nigel Rowell is a GP in Middlesbrough and, since 1988, has also been a Clinical Assistant in Cardiology at the James Cook University Hospital. He ran echocardiography clinics until 2003 when he helped to set up the Heart Failure Assessment Service.

Dr Rowell was a non-executive director of the former Tees Health Authority.
Treating hypertension: Current evidence

Hypertension is too frequently undetected and is usually undertreated when it is detected in the UK. Nevertheless, detection, treatment and control rates of hypertension have improved dramatically over the last 20 years, largely as a result of efforts made in primary care. It seems likely that British guidelines (BHS III and IV, NICE/BHS and JBS I and II) have contributed to this improved management. In 2006 the NICE/BHS document fine-tuned the treatment algorithm included in the BHS IV guideline which proposed the AB/CD algorithm. The modification demoted the use of beta-blockers (unless compelling indications apply) to fourth-line agents. The residual A/CD algorithm for drug sequencing appears an excellent simple logical approach to hypertension management (Figure 1).

More recently the ACCOMPLISH trial has reported, providing guidance as to whether "A" and "C" drugs in combination are preferable to "A" and "D" drugs – the two currently recommended combinations of agents included in British guidance. The recently announced ONTARGET trial has provided the best evidence to date as to whether ACE-inhibitors or ARBs should be used preferentially or in combination.

The latest European and American guidelines have both proposed the use of two agents as first-line antihypertensive therapy for a significant proportion of patients. While logical, hard evidence to support the preferential use of two drugs rather than monotherapy as a first-line approach is limited. However, the BHS and others have received funding to carry out trials to compare these two approaches.

Evidence for optimal third and fourth-line therapy is almost non-existent although good data (albeit observational) suggest that low-dose spironolactone is an extremely effective and well tolerated agent when used fourth-line.

The ASCOT-LLA trial and subpopulations of other statin trials have confirmed the benefits of treating with a statin most patients with hypertension, not on the basis of lipid levels but rather on the basis of having an estimated 10-year cardiovascular risk of ≥20%. Aspirin should also probably be co-administered for those hypertensives in this risk category.

Further reading:

Abbreviations:
A = ACE inhibitor (consider angiotensin-II receptor antagonist if ACEI intolerant)
C = calcium-channel blocker
D = thiazide-type diuretic

Black patients are those of African or Caribbean descent, and not mixed race, Asian or Chinese patients

Figure 1: Choosing drugs for patients newly diagnosed with hypertension (NICE/BHS algorithm, 2006)
Professor Neil Poulter is Professor of Preventive Cardiovascular Medicine and co-Director of the International Centre for Circulatory Health, Imperial College London. He is also Honorary Consultant Physician and Epidemiologist at the Peart-Rose Hypertension Clinic, St Mary’s Hospital, London.

Professor Poulter gained his medical degree from University of London in 1974, later becoming Reader at University College London. He was President of the British Hypertension Society from 2003-2005, and was co-author of the 1998 and 2005 Joint British Recommendations on Prevention of Coronary Heart Disease and Cardiovascular Disease, the 2003 World Health Organization/International Society of Hypertension Statement on Management of Hypertension, the 2003 European Society of Hypertension-European Society of Cardiology guidelines for the management of arterial hypertension, and the 2004 British Hypertension Society guidelines for management of hypertension.

Professor Poulter was director of operations of the UK half of the ASCOT Trial and he is a member of management committee and director of the North European region of the ADVANCE study. Other current research activities include: the optimal investigation and management of essential hypertension and dyslipidaemia; the association between birth weight and hypertension; the cardiovascular effects of exogenous oestrogen and progesterone; the prevention of type 2 diabetes; and ethnic differences in cardiovascular disease.
The majority of blood pressure management takes place in primary care and therefore there is a need for primary care doctors and nurses to take a lead in this sphere. The Quality and Outcomes Framework (QOF) should be about "quality" not just points and prizes. This requires a team approach with appropriate doctor and nurse leads for the locality or, in the case of large practices, the practice itself. Practice based commissioning and practitioners with a specialist interest may have an influence here. The availability of nurse prescribing takes this away from being a doctor orientated subject.

But whoever takes the lead there is a requirement not just to manage the patient but also to manage the team of clinicians who are tackling this huge burden. No one person in any organisation could manage the whole problem hands on. A population of 10,000 people will have approximately 1,150 people with moderate hypertension and a further 700 people who need active control of their blood pressure because they are diabetic, have renal impairment or have suffered target organ damage such as ischaemic heart disease or stroke. Those people need the whole team to be identifying them and treating them.

The issues that the team leader or leaders need to address should be contained in a local protocol. That protocol should tackle accurate measurement including home measurement, who should be targeted for assessment, how we deal with the elderly patient, the use of appropriate medication and in particular the "ACD" approach. It also needs to answer the team's problems regarding what to do when the patient appears resistant to treatment. This might mean using a separate protocol in terms of treating the "difficult" patient or, if we cannot do this in primary care, deciding who to count as an "exception to treatment" or who to refer. Ultimately, hypertension should not be treated in isolation from other risk factors and the management must include global risk assessment.
Dr Terry McCormack lives in Robin Hoods Bay, North Yorkshire. He qualified in medicine in 1982 from St Mary's Hospital Medical School. He is a family doctor in the Whitby Group Practice, an anaesthetics hospital practitioner at the local community hospital, the local medical advisor for Whitby Lifeboat and an honorary teaching fellow of the Imperial College of Medicine.

Dr McCormack has for many years been interested in cardiovascular medicine as it relates to primary care. He is currently Chairman of the Steering Committee and an investigator for HYVET (Hypertension in the Very Elderly Trial) and a steering committee member for SPACE ROCKET (a cholesterol trial). He is the Chairman of the Primary Care Cardiovascular Society (PCCS) and a council member of the British Cardiovascular Society (BCS). He sits on the Prevention and Care Committee of the British Heart Foundation and he is an editor of the British Journal of Cardiology.
Diabetes – an expanding evidence base

The cardiovascular burden of diabetes is well described, and interventions based on aggressive reductions in blood pressure and intensive lipid-lowering with statins clearly reduce vascular events in people with diabetes. The management of hyperglycaemia to reduce macrovascular disease has been more problematic, partly because of the relatively small numbers of antidiabetic drugs that are available.

In patients with type 1 diabetes, intensive insulin treatment significantly reduced both microvascular and macrovascular events, but it was many years before the reduction in macrovascular events became evident (Figure 1). For patients with type 2 diabetes, the United Kingdom Prospective Diabetes Study (UKPDS) demonstrated that intensive treatment with a mean HbA1c of 7% reduced microvascular complications but the overall reduction in myocardial infarctions was not significant. In a small subgroup of overweight patients metformin reduced myocardial infarctions for the same reduction in HbA1c, suggesting that the benefit was due to some other mechanism of action.

Glitazones reduce insulin resistance and in the PROactive study pioglitazone reduced recurrent events in patients with existing vascular disease (Figure 2). Meta-analysis of pioglitazone studies suggests similar reductions in myocardial infarctions and strokes in patients without vascular disease. By contrast, rosiglitazone has been shown to cause a slight increase in acute vascular events in several meta-analyses. Both glitazones can cause fluid retention through the kidneys and are contraindicated in chronic heart failure.

The ACCORD trial was established to compare very intensive blood glucose lowering with standard treatment in type 2 diabetes. The study was stopped prematurely because of an increase in fatalities in the intensive treatment group. The intensively treated group received a mixture of treatments including glitazones (predominantly rosiglitazone) and insulin, but the researchers did not identify a link with any one antidiabetic therapy, or with hypoglycaemia, which was increased in this treatment group.

Some new treatments have beneficial effects on cardiovascular risk markers, but they will need long-term well-designed cardiovascular outcomes studies before their role is clear.

Figure 1: Epidemiology of Diabetes Interventions and Complications (EDIC) trial, a follow-up to the DCCT in type 1 diabetes

- Hypothesis: tight control of glycaemia with intensive insulin therapy would reduce long-term cardiovascular disease in Type 1 diabetes
- 1394 (97%) of the DCCT cohort observed in passive follow up
- HbA1c in the intensive therapy group rose to 7.9%, and in the conventional treatment group fell to 7.8%
- Mean follow-up 17 years
- Cardiovascular disease (MI, stroke, CV death, angina, coronary revascularisation) reduced by 42% in the previous intensive treatment group

Figure 2: The PROactive trial

- Hypothesis: pioglitazone would reduce total mortality and macrovascular morbidity in type 2 diabetes when added to current therapy
- 5238 patients with type 2 diabetes and existing cardiovascular disease
- Pioglitazone 45mg or placebo
- Mean follow-up: 3 years
- Insignificant reduction in primary endpoint by 10%
- Significant reduction in ‘main secondary endpoint’ (death, MI, stroke) by 16%
Dr Miles Fisher is a Consultant Physician at Glasgow Royal Infirmary. He graduated from Glasgow University in 1979. He worked as a research fellow in the Department of Diabetes in Gartnavel General Hospital in the 1980s, where his interests were diabetes and the heart, and hypoglycaemia. He received his MD in 1988 for his thesis on 'Evidence for a diabetic cardiopathy.'

From 1992-2001, Dr Fisher was a consultant physician at the Royal Alexandra Hospital, Paisley, and since 2001 has been a consultant physician at Glasgow Royal Infirmary. He was on the steering committee of the DIGAMI 2 study and was the Scottish co-ordinator. He was an events adjudicator for the HOPE and HOPE-TOO studies.

Dr Fisher is the author or co-author of over 120 original papers and review articles. He is the editor or co-editor of three books on heart disease in diabetes, and two books on hypoglycaemia. He was the co-author of the diabetes chapter in the 19th and 20th Editions of Davidson’s ‘Principles and Practice of Medicine’.
Working together to improve diabetes care

Collaboration between primary and secondary care health professionals is key to improved management of patients with diabetes. It enables consistency of management and prescribing, with optimisation of control through consideration of hypertension, kidney disease and lipids as well as blood glucose. The traditional model, in which most specialist diabetes care is provided in hospitals, is no longer tenable in view of increasing patient numbers and political directives to move care closer to home and keep patients out of hospital. A joined-up service also makes sense clinically and there is growing recognition of the need to provide services that better mirror the patient journey.

In our area, diabetes services started to be redesigned three years ago with the aim of enhanced collaboration between primary and secondary care. This strategic change involved Worthing and Southlands NHS Trust taking steps to move specialist diabetes services into primary care.

Redesign was initially focused on the nursing service. The key change has been for diabetes specialist nurses and practice nurses to work together. The local PCT provided funding for three primary care diabetes specialist nurses. These nurses, who are based in the hospital, have both a clinical and a training role. They run clinics jointly with practice nurses in all 32 GP practices within the PCT, devising a plan of care that the practice nurse can then implement. Secondary care specialist diabetes nurses now focus on emergency care and on the wards.

They can discuss a patient’s care plan with the primary care specialist nurse who will later see the patient in clinic.

The change in nursing services has provided the infrastructure for the next step in service redesign: the plan is to move some of the diabetologist clinics into primary care.

This presentation will discuss the processes involved in implementing the integrated diabetes nursing model and audit data demonstrating how patients, clinicians and health care organisations have all benefited from the new service. It will also outline the challenges in achieving change in service provision, including the importance of:

- clinical leadership
- identification of what needs changing in the context of organisational targets
- identification of key stakeholders
- marketing the change to these stakeholders.
Sara Da Costa is Nurse Consultant in Diabetes for Worthing & Southlands NHS Trust. She has been involved in diabetes care since 1988, as specialist nurse and clinical manager, and became a Consultant Nurse in 2002. She is the clinical lead for diabetes across the Trust and PCT, and is a Visiting Fellow at the University of Brighton where she leads diabetes modules at degree and diploma level.

Ms Da Costa has published and presented nationally and internationally. Her areas of interest are clinical leadership, service redesign and integrating services in long-term conditions. She presented the Janet Kinson lecture at the Diabetes UK conference in 2007. Clinically, Ms Da Costa enjoys managing a complex diabetes caseload in emergency medicine, providing a specialist clinic in primary care, and care of the older person with diabetes.

She is a board member of the Institute of Diabetes for Older People and is on the editorial board of the *Journal of Diabetes Nursing*. She completed an MBA at Warwick University in 2004.