



British Hypertension Society

Annual Scientific Meeting



24th - 26th September 2007
St. John's College, Cambridge

Final Programme



The British Hypertension Society would like to express its gratitude to Novartis Pharmaceuticals UK Ltd. for providing an educational grant towards the costs of the meeting



BRITISH HYPERTENSION SOCIETY

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24th – 26th September 2007
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Executive Committee:

President:	Professor M.J. Brown
Vice-President:	Professor G.T. McInnes
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BHS Administrative Officer:

Mrs. Jackie Howarth
BHS Administrative Officer
Clinical Sciences Building
Level 5, Leicester Royal Infirmary
PO Box 65, Leicester, LE2 7LX

Tel: 07717 467973
E-mail: bhs@le.ac.uk
BHS website: www.bhsoc.org

Meetings Secretariat:

Hampton Medical Conferences Ltd.,
113-119 High Street, Hampton Hill, Middlesex, TW12 1NJ

Tel: 020 8979 8300
Fax: 020 8979 6700
Email: hmc@hamptonmedical.com
Website: www.hamptonmedical.com

Contact: Mrs. Gerry McCarthy
Email: gmccarthy@hamptonmedical.com

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We are grateful to St. John's College for providing the front cover image

WELCOME

Dear Colleague,

On behalf of the Executive Committee, we should like to welcome you to the Annual Scientific Meeting of the British Hypertension Society.

The Executive Committee was pleased to receive 67 abstract submissions this year, the highest number ever. We should like to thank BHS members and their colleagues who have submitted abstracts for inclusion in the programme. We are also grateful to those members of the Society who have assisted the Executive Committee in its difficult task of reviewing the abstracts and compiling the programme.

The top scoring abstracts have been accepted for oral or poster presentation at this year's meeting. In addition to the free communications, the programme includes case presentations focusing on hypertensive extremes, and reviews of the management of obesity and of hypertension in pregnancy.

We are also pleased to welcome one of our own members, Professor Paul Stewart, who will be giving this year's Pickering Lecture, and James Sharman from Brisbane, who is the Society's guest as the winner of the High Blood Pressure Research Council of Australia Young Investigator award in December 2006. In addition, we welcome Sverre Kjeldsen and Stephane Laurent, who are both giving presentations at the meeting.

The Society is also pleased to welcome members of the Nurses Hypertension Association, who will again be holding their own meeting in parallel to ours. BHS members are welcome to attend the NHA lectures, which will be held in the School of Pythagoras.

We are very grateful to **Novartis Pharmaceuticals UK Ltd** for providing an educational grant towards the costs of this meeting.

We are looking forward to another stimulating and enjoyable conference.



Professor Morris Brown
President



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GENERAL INFORMATION

Venue:

St. John's College
Cambridge, CB2 1TP.

Tel: 01223 338600 (Porters' Lodge)
01223 337714 (Registration Desk during the conference)
Fax: 01223 337718 (for incoming faxes during the conference)
Website: www.joh.cam.ac.uk

CPD Accreditation:

This event, Code Number 37864, has been approved for External Credit (14 hours) for the CPD Scheme of the Federation of Royal Colleges of Physicians of the UK. Physicians wishing to claim CPD accreditation should sign the Attendance Register at the Registration Desk.

Oral Presentations:

British Hypertension Society lectures will take place in the Palmerston Lecture Theatre.
Nurses Hypertension Association lectures will take place in the School of Pythagoras.

Poster Presentations:

Posters will be displayed for the whole meeting. Presenters will be available for discussion during the chaired Poster Discussion Session from 10.30 – 12.00 hrs on Wednesday 26th September.

Young Investigators' Prizes:

Orals: *BHS Young Investigator's Clinical Prize:*
Abstracts shortlisted for this prize will be given in Session 2 (16.30 – 18.00 hrs on Monday 24th September).

BHS Young Investigator's Basic Science Prize:
Abstracts shortlisted for this prize will be given in Session 3 (09.00 – 10.30 hrs on Tuesday 25th September – Presentations 3.1 – 3.4 only).

The winners will be announced at the Conference Dinner on Tuesday 25th September.

Posters: *The BHS Jack Ledingham Young Investigator's Poster Prize*
Abstracts eligible for this prize (indicated with an asterisk in the Programme) will be presented in the Poster Discussion Session at 10.30 hrs on Wednesday 26th September. The winner will be announced at the end of the meeting.

Internet Access:

Wireless internet access is available in the Fisher Building (location for the BHS Lectures and Registration Desk). There are also four computers available for delegates to use (free of charge) in the Drawing Room (1st Floor, Fisher Building).

10.00 – 12.30

Arrival of delegates and registration

12.30 – 14.30

Lunch, Dining Hall

14.30 – 16.00

SESSION 1: Hypertensive Extremes

Chair: **Morris Brown** (Cambridge)

Case presentations to include discussion of:

- Hypertensive urgency
- Accelerated hypertension
- Hypertension following acute stroke
- Hypertension requiring parenteral treatment
- Severe hypertension due to renal artery stenosis

An interactive voting system will be used during this session

16.00 – 16.30

Tea

16.30 – 18.00

SESSION 2: Submitted Abstracts

Chair: **Gordon McInnes** (Glasgow)

**All presentations in this session are shortlisted for the BHS Young Investigator's Clinical Prize*

- | | | |
|-------------|------|--|
| 16.30-16.40 | 2.1* | Does the aldosterone : renin ratio (ARR) predict the efficacy of spironolactone over bendroflumethiazide in hypertension? The RENALDO Study
H.K. Parthasarathy , K. Alhashmi, A. McMahon, A.D. Struthers, J.M.C. Connell, G.T. McInnes, I. Ford, T.M. MacDonald (Dundee and Glasgow) |
| 16.40-16.45 | | Discussion |
| 16.45-16.55 | 2.2* | Development and validation of a blinded electronic auscultatory blood pressure device
E. Sheppard, N. Ahmed, A. de Greeff , A. Shennan (London) |
| 16.55-17.00 | | Discussion |
| 17.00-17.10 | 2.3* | Long term incidence of hypertension and cardiovascular events is significantly higher in women with pregnancy induced hypertension
A. Dhawan , P. Baker, P. Lewis (Stockport and Manchester) |
| 17.10-17.15 | | Discussion |
| 17.15-17.25 | 2.4* | The genetic basis of haemorrhagic stroke: a meta-analysis of 12 genes involving ~20,000 subjects
G.E. Peck , P. Sharma (London) |
| 17.25-17.30 | | Discussion |
| 17.30-17.40 | 2.5* | Inducible nitric oxide synthase activity is increased in patients with rheumatoid arthritis and contributes to endothelial dysfunction
K.M. Maki-Petaja , J. Cheriyan, F.C. Hall, C.M. McEniery, S.M.L. Wallace, M.J. Ashby, J. Brown, I.B. Wilkinson (Cambridge) |
| 17.40-17.45 | | Discussion |
| 17.45-17.55 | 2.6* | Pharmacogenetics of aspirin resistance: a comprehensive systemic review
T. Goodman , A. Ferro, P. Sharma (London) |
| 17.55-18.00 | | Discussion |

19.30 – 20.30

Buffet supper, Dining Hall

20.30 – 21.30

Post-Dinner Debate (Dining Hall)Title: **New onset diabetes is an artificial concept which should not influence the management of hypertension**Chair: **Bryan Williams** (Leicester)For: **Gordon McInnes** (Glasgow)Against: **Naveed Sattar** (Glasgow)

An interactive voting system will be used during this session

Tuesday 25th September 2007

07.30 – 09.00

Breakfast, Buttery

09.00 – 10.30

SESSION 3: Submitted AbstractsChair: **Donald Singer** (Warwick)**Presentations 3.1 - 3.4 are shortlisted for the BHS Young Investigator's Basic Science Prize*

- | | | |
|-------------|------|--|
| 09.00-09.10 | 3.1* | Association of the WNK1 gene with essential hypertension, blood pressure variability and serum and urine electrolytes
S. Newhouse , C. Wallace, M. Hoti, B. Burke, A. Marcano, A. Onipinla, R. Dobson, C. Mein, D. Clayton, N.J. Samani, A.F. Dominiczak, M.J. Brown, J. Webster, M. Lathrop, M. Farrall, J.M.C. Connell, M.J. Caulfield, P. Munroe (London, Cambridge, Leicester, Glasgow, Aberdeen, Evry and Oxford) |
| 09.10-09.15 | | Discussion |
| 09.15-09.25 | 3.2* | Expression of the epithelial Na ⁺ channel and other components of an aldosterone response pathway in human zona glomerulosa cells
T.J. Burton , G. Cope, M.J. Brown (Cambridge) |
| 09.25-09.30 | | Discussion |
| 09.30-09.40 | 3.3* | A prospective study of maternal endothelial function, angiogenic factors and placental function in women at risk of pre-eclampsia
M. Noori , A. Donald, A. Hingorani, D.J. Williams (London) |
| 09.40-09.45 | | Discussion |
| 09.45-09.55 | 3.4* | Cardiac overexpression of angiotensin converting enzyme 2 (ACE2) in stroke prone spontaneously hypertensive rats (SHRSP) leads to fibrosis
R. Masson , S.A. Nicklin, L.M. Work, K. Gilday, P. Gregorevic, J. Allen, J.S. Chamberlain, D. Graham, A.F. Dominiczak, A.H. Baker (Glasgow and Seattle) |
| 09.55-10.00 | | Discussion |
| 10.00-10.10 | 3.5 | Improvement of cardiovascular function by mitochondrial-targeted antioxidant treatment
D. Graham , A. Spiers, E. Beattie, K. Taylor, M.P. Murphy, C. Hamilton, W.H. Miller, A.F. Dominiczak (Glasgow, Cambridge and San Francisco) |
| 10.10-10.15 | | Discussion |
| 10.15-10.25 | 3.6 | The highly conserved acidic motif of WNK4 is essential for its role in the regulation of renal potassium handling through suppression of ROMK expression
M. Murthy , G. Cope, K.M. O'Shaughnessy (Cambridge) |
| 10.25-10.30 | | Discussion |

10.30 – 11.00

Coffee

11.00 - 11.45

SESSION 4: Submitted AbstractsChair: **Ian Wilkinson** (Cambridge)

- 11.00-11.10 4.1 Novel vasoconstrictor activity of the chemokine MIP1- β in human vasculature in vitro is antagonized by the CCR5 receptor antagonist maraviroc
J.J. Maguire, R.E. Kuc, S.D. Katugampola, K.L. Jones, R.W. Mansfield, C.M. Napier, A.P. Davenport (Cambridge and Sandwich)
- 11.10-11.15 Discussion
- 11.15-11.25 4.2 Acute blood pressure lowering and vasoprotective effects of beetroot juice: relationship to nitrite derived from dietary nitrate
A.J. Webb, N. Patel, S. Loukogeorgakis, M. Okorie, R. Rashid, J. Deanfield, N. Benjamin, R. MacAllister, A. Hobbs, A. Ahluwalia (London and Plymouth)
- 11.25-11.30 Discussion
- 11.30-11.40 4.3 **High Blood Pressure Research Council of Australia Young Investigator Award Speaker**
Patients with type 2 diabetes mellitus have an exaggerated brachial and central blood pressure response to exercise: relation to left ventricular hypertrophy
J.E. Sharman, J.A. Scott, J.S. Coombes, J.B. Prins, R. Leano, T.H. Marwick (Brisbane)
- 11.40-11.45 Discussion

11.50 – 12.50**SIR GEORGE PICKERING LECTURE**Chair: **Morris Brown****Liquorice and allsorts of steroids – the erosion of 'essential' hypertension****Professor Paul M. Stewart**

Professor of Medicine, University of Birmingham, UK

Paul Michael Stewart is Professor of Medicine in the Department of Medicine, joint director of The Wellcome Trust Clinical Research Facility and Associate Dean for Clinical Research at the The Medical School, University of Birmingham. His research specialties include reproductive endocrinology, steroid hormone metabolism, mineralocorticoids, glucocorticoids and endocrine hypertension. Specifically, Professor Stewart is head of a research group exploring the hypothesis that altered cortisol metabolism might underpin diverse diseases including hypertension, obesity-glucose tolerance, glaucoma, malignancy, bone disease and problems in fetal life such as fetal growth restriction (funded by Wellcome Trust programme grant, MRC Co-op, NIH). His group has particular expertise in corticosteroids and 11 β -hydroxysteroid dehydrogenase. Professor Stewart was previously a Medical Research Council Senior Clinical Fellow (1992-2002) and is a Fellow of the Royal College of Physicians and the Academy of Medical Sciences.



He has over 200 original peer reviewed publications and has delivered over 100 plenary/symposium lectures to specialist societies. In his discipline Professor Stewart is actively involved in the Society for Endocrinology, the USA Endocrine Society (Clinical Chair 2004, Council 2005-) and the International Society for Endocrinology (Secretary General). Professor Stewart has previously served as a member of the Clinical Interest Group of the Wellcome Trust and now serves on committees for the MRC (CRAG, Clinical Panel), Wellcome Trust (Chair, Physiological Sciences strategy committee) and BHF (Chairs and programme grants committee). As a clinical endocrinologist and Consultant Physician he is actively involved in Acute Medical takes and the management of a spectrum of patients with endocrinopathies including pituitary and adrenal disease, infertility, PCOS, neuroendocrine tumours and endocrine hypertension.

SCIENTIFIC PROGRAMME: Tuesday 25th September 2007

13.00 – 14.15

Lunch, Dining Hall

14.15 – 15.45

SESSION 5: Submitted Abstracts

Chair: **Francesco Cappuccio** (Warwick)

- 14.15-14.25 5.1 Gitelman syndrome: a novel and paradoxical cause of secondary hypertension
S.J. Waller, A.G.W. Norden, N. Fluck, M.J. Brown, **F.E. Karet** (Cambridge and Aberdeen)
- 14.25-14.30 Discussion
- 14.30-14.40 5.2 Severe uncontrolled hypertension treated with microvascular decompression of the brainstem
G. Rull, G. Arunachalam, J. Wadley, G. Mandersloote, **M.D. Lobo** (London)
- 14.40-14.45 Discussion
- 14.45-14.55 5.3 Acute aldosterone responses to ACTH predict both cortisol responses and blood pressure
R.M. Reynolds, B.R. Walker, D.I.W. Phillips, H.E. Syddall, E. Davies, R. Fraser, J.M.C. Connell (Edinburgh, Southampton and Glasgow)
- 14.55-15.00 Discussion
- 15.00-15.10 5.4 Impact of heart rate on the differential effect of blood pressure lowering agents on peripheral and central pressures: data from the Conduit Artery Function Evaluation (CAFE) Study
B. Williams, P.S. Lacy (Leicester)
- 15.10-15.15 Discussion
- 15.15-15.25 5.5 Role of metabolic syndrome, independent of its components, in prediction of cardiovascular outcomes in hypertensive patients in the ASCOT-BPLA
A.K. Gupta, N.R. Poulter, B. Dahlof, P. Sever, H. Wedel (London and Goteborg)
- 15.25-15.30 Discussion
- 15.30-15.40 5.6 Association of the CYP11B1 and CYP11B2 gene polymorphisms with hypertension in the British Genetics of Hypertension case-control study
S. Padmanabhan, E. Davies, S.M. MacKenzie, W. Lim, M. Barr, E.C. Friel, P.B. Munroe, M.J. Brown, N.J. Samani, M. Farrall, R. Dobson, J. Webster, M. Lathrop, M.J. Caulfield, A.F. Dominiczak, J.M.C. Connell (Glasgow, London, Cambridge, Leicester, Oxford, Aberdeen and Paris)
- 15.40-15.45 Discussion

15.45 – 16.15

Tea

16.15 – 17.00

SESSION 6: Invited Speaker

Chair: **Mark Davis** (Leeds)

16.15 – 16.45 The European View: Pre-Hypertension
Sverre Kjeldsen (Oslo)

16.45 – 17.00 Discussion

17.00 – 18.00 hrs

Annual Business Meeting (BHS Members only)

19.15

Reception

20.00

Conference Dinner

Awards: BHS Young Investigator's Clinical and Basic Science Prizes
NHA Best Abstract Prize

SCIENTIFIC PROGRAMME: Wednesday 26th September 2007

07.30 – 09.00

Breakfast, Buttery

09.00 – 10.30

SESSION 7: Invited Speakers

Chair: **Mark Caulfield** (London)

09.00-09.10 7.1

Genetics of hypertension

John Connell (Glasgow)

09.10-09.15

Discussion

09.15-09.25 7.2

Genome-wide association scan for human hypertension

Patricia Munroe (London)

09.25-09.30

Discussion

09.30-09.40 7.3

Dissecting genetic variation of hypertension associated co-phenotypes

Chris Wallace (London)

09.40-09.45

Discussion

09.45-09.55 7.4

Meta-analysis of genome-wide scans and novel candidates for hypertension

Mark Caulfield (London)

09.55-10.00

Discussion

10.00-10.20 7.5

Arterial stiffness

Stephane Laurent (Paris)

10.20-10.30

Discussion

10.30 – 12.00

Coffee and Poster Discussion Session

Parallel Poster Groups:

Posters PA – Basic Science

Chair: A. Davenport

Posters PB – Pathogenesis and Aetiology

Chair: A. Hughes

Posters PC – Cardiovascular Disease

Chair: J. Ritter

Posters PD – Clinical Studies

Chair: A. Stanton

Posters PE – Arterial Stiffness and Haemodynamics

Chair: P. Chowienyczk

12.00 – 13.00

SESSION 8: 'How to' Session

Chair: **Adrian Brady** (Glasgow)

12.00-12.30

Management of obesity

Nick Finer (Cambridge)

12.30-13.00

Hypertension in pregnancy

David Williams (London)

13.00

Award: The BHS Jack Ledingham Young Investigator's Poster Prize

Close of Meeting and Lunch

POSTER PRESENTATIONS

* Posters marked with an asterisk are eligible to be considered for The BHS Jack Ledingham Young Investigator's Poster Prize

Posters PA Basic Science

Chair: **A. Davenport** (Cambridge)

- PA.1 Improved left ventricular mass index and left ventricular function in a hypertensive congenic strain
K. Gilday, D. Graham, M.W. McBride, A.F. Dominiczak (Glasgow)
- PA.2* RNA-interference and adenovirus mediated selective modulation of cardiovascular candidate genes
J.M. Polke, L. Graham, W.H. Miller, S.A. Nicklin, M.W. McBride, A.H. Baker, A.F. Dominiczak (Glasgow)
- PA.3 Microarray analysis identifies salt sensitive candidate genes in the SHRSP
M.W. McBride, J.D. McClure, J.M. Polke, D. Graham, A.F. Dominiczak (Glasgow)

Posters PB Pathogenesis and Aetiology

Chair: **A.D. Hughes** (London)

- PB.1* Effects of early growth on blood pressure of British European and South Asian origin children at 12 months of age
N. Bansal, O.O. Ayoola, I. Gemmell, A. Vyas, A. Koudsi, J. Oldroyd, P.E. Clayton, J.K. Cruickshank (Manchester)
- PB.2 Small artery changes precede overt hyperglycaemia or 'diabetes': the Manchester Mothers' Vascular Health Study
M. Banerjee, C. Auston, R.A. Malik, V. Charlton-Menys, J.K. Cruickshank (Manchester)
- PB.3 Investigating the relationship between microvascular rarefaction and systemic hypertension: a mathematical and computational model of the circulation
G.A. Vaughan, J.M.C. Connell, M.K. Johnson, M.S. Olufsen, N.A. Hill, **C.A.R. Sainsbury** (Glasgow and Raleigh)
- PB.4 The role of the central sympathetic drive in the growth of left ventricular mass as determined by MRI in human essential hypertension
J. Burns, M.U. Sivananthan, S.G. Ball, A.F. Mackintosh, D.A.S.G. Mary, J.P. Greenwood (Leeds)
- PB.5 The contribution of central sympathetic drive to the reversal of left ventricular hypertrophy in human hypertension as quantified by microneurography and MRI
J. Burns, M.U. Sivananthan, S.G. Ball, A.F. Mackintosh, D.A.S.G. Mary, J.P. Greenwood (Leeds)

Posters PC Cardiovascular Disease

Chair: **J. Ritter** (London)

- PC.1 EUROACTION: a European Society of Cardiology demonstration project in preventive cardiology – one year results for coronary patients and their partners
K. Kotseva, S.B. Connolly, C. Jennings, A. Mead, J. Jones, A. Holden, T. Collier, D. De Bacquer, G. De Backer, D. Wood (London and Ghent)
- PC.2 Treating blood pressure not cardiovascular risk: could we be doing harm?
P.R. Jackson (Sheffield)
- PC.3 New-onset diabetes in hypertensive patients: an evaluation of the association with drug therapy and cardiovascular mortality
D. Finn, **J. Dawson**, L. Murray, R. Morton, W. Sloan, M.R. Walters, G.T. McInnes (Glasgow)
- PC.4 Urinary albumin excretion in hypertensive siblings in the British Genetics of Hypertension study
S. Padmanabhan, C. Menni, C. Delles, P.B. Munroe, M.J. Brown, N.J. Samani, M. Farrall, R. Dobson, J. Webster, M. Lathrop, M.J. Caulfield, J.M.C. Connell, A.F. Dominiczak (Glasgow, London, Cambridge, Leicester, Oxford, Aberdeen and Paris)
- PC.5 Serum uric acid and stroke mortality in patients with hypertension
J. Dawson, Y. Nalci, G.T. McInnes, L. Murray, R. Morton, S. Radziwonik, W. Sloan, M.R. Walters (Glasgow)

POSTER PRESENTATIONS

Posters PD

Clinical Studies

Chair: **A. Stanton** (Dublin)

- PD.1* The metabolism of asymmetric dimethyl L-arginine (ADMA) is increased in chronic kidney disease
T.W.R. Doulton, M. Wood, N.D. Markandu, J. Barron, P. Vallance, R.N. Dalton, G.St.J. Whitley, G.A. MacGregor (London and Carshalton)
- PD.2* The effect of fludrocortisone on plasma aldosterone levels in healthy volunteers and patients with Conn's syndrome
F.A. Mir, M.J. Brown (Cambridge)
- PD.3 Improved blood pressure control in hypertensive patients with osteoarthritis treated with lumiracoxib compared with ibuprofen: a randomised controlled trial
T.M. MacDonald, D. Richard, K. Lheritier, G. Krammer (Dundee and Basel)
- PD.4 Acute elevation of free fatty acids has opposing effects on forearm and systemic vascular resistance
S.E. Brett, J.E. Tillman, J. Patel, J. Perinpanayagam, S.E. Berry, B.Y. Jiang, P.J. Chowienczyk (London)
- PD.5 Baroreceptor function changes with differing blood pressure treatment during the Anglo-Scandinavian Cardiac Outcomes Trial: principal results from the Cardiac Autonomic Reflex Assessment Trial (CARAT)
D.J. Collier, L.C. Davies, L. Bernardi, P. Sleight, S. Misra, J. Shiel, C.M. David, B. Scott, M.J. Caulfield (London, Pavia and Oxford)
- PD.6 Prediction of new-onset diabetes in patients randomly assigned to nifedipine or hydrochlorothiazide and amiloride: suggestive evidence for the importance of muscle blood flow in regulating glucose tolerance in hypertension
M.J. Brown (Cambridge)

Posters PE Arterial Stiffness & Haemodynamics

Chair: **P. Chowienczyk** (London)

- PE.1* Changes in arterial reservoir function, not wave reflection, account for the effect of ageing on pressure augmentation in the proximal aorta
J.E. Davies, D.P. Francis, N. Hadjiloizou, C.H. Manisty, J. Aguado-Sierra, R.A. Foale, K.H. Parker, J. Mayet, A.D. Hughes (London)
- PE.2* Exercise pulse wave velocity can be measured by photoplethysmography and increases with cardiovascular risk
R.A. Payne, S.R. Maxwell, D.J. Webb (Edinburgh)
- PE.3* Ambulatory recording of orthostatic hypotension is associated with increased arterial stiffness in chronic kidney disease
L. Tomlinson, R. Lee, S. Holt, S. Rajkumar (Brighton)
- PE.4* Pulsatile arterial pressure is predominantly determined by the aortic reservoir, which can be determined non-invasively from peripheral measurement sites
A.S.N. Malaweera, J.E. Davies, N. Hadjiloizou, C. Manisty, A. Zambanini, J. Aguado-Sierra, S.A. Thom, K.H. Parker, D.P. Francis, J. Mayet, A.D. Hughes (London)
- PE.5 A comparison of atenolol and nebivolol in isolated systolic hypertension
Z. Dhakam, **C.M. McEniery**, Y. Yasmin, T.J. Burton, M.J. Brown, I.B. Wilkinson (Cambridge)



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Conference Secretariat:

**Hampton Medical Conferences Ltd.
113-119 High Street, Hampton Hill, Middlesex, TW12 1NJ**

**Tel: 020 8979 8300 Fax: 020 8979 6700
Email: hmc@hamptonmedical.com Website: www.hamptonmedical.com**