

**THE ADAPT CENTRE**  
**&**  
**BLOOD PRESSURE UNIT**

**Beaumont Hospital & RCSI**

**ANNUAL REPORT, PUBLICATIONS**

**AND**

**SCIENTIFIC PRESENTATIONS**

**VOLUME 20**

**2004**

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## Introduction

### *History & background*

The Blood Pressure Unit was founded in collaboration with Professor Kevin O'Malley 25 years ago in the Charitable Infirmary, Jervis Street, with support provided by the Charitable Infirmary and the Royal College of Surgeons in Ireland. From the outset the Unit has concentrated on research into the pharmacology of blood pressure lowering drugs, particularly in the elderly, and on the development of blood pressure measuring techniques, especially techniques of ambulatory blood pressure measurement. The 2004 report will constitute the 20<sup>th</sup> bound volume of the publications and presentations from the Blood Pressure Unit and latterly the ADAPT Centre, giving details of nearly 500 papers published in peer-reviewed journals together with numerous editorials, letters, books, book chapters, general and educational articles and abstracts. The report also lists the scientific and educational presentations made since 1988 in many countries around the world. The full report will be available at [http://www.ecf.ie/adapt\\_website](http://www.ecf.ie/adapt_website)

The Blood Pressure Unit is the point of entry of patients into the shared-care program in which trained nurses establish a patient database and initiate the translational research model that allows patients to pass into clinical trials.

The Arterial Disease Assessment Prevention and Treatment (ADAPT) Clinic was established in collaboration with Professor David Bouchier-Hayes and Professor Desmond Fitzgerald in 1997. The rationale for this unique clinic was based on the concept that disease of the arterial organ was a fundamental denominator in all cardiovascular disease. The ADAPT Clinic was established to ensure that all patients with cardiovascular disease, regardless of the speciality to which they present, receive the most comprehensive risk factor assessment with appropriate life-style modification, and that appropriate drug treatment is directed at the arterial organ.

The ADAPT concept was further developed in 1999 with the establishment of the ADAPT Centre. This research area houses out-patient facilities and a cardiovascular laboratory equipped to perform state-of-the-art cardiovascular assessment, which includes echocardiography, electrocardiography with stress testing, Holter monitoring, applanation tonometry, pulse wave velocity analysis, 24-hour ambulatory blood pressure monitoring, beat-to-beat non-invasive blood pressure monitoring, 24-hour silent ischaemia monitoring, fundal photography and imaging, and carotid wall (intima-media thickness) imaging. Through its association with the Molecular Medicine Laboratories in the RCSI Building at Beaumont Hospital, the Department of Clinical Pharmacology, the Centre for Proteomics, SURGEN, and BIOSYS at RCSI, the ADAPT Centre can assess biochemical and genetic markers of risk, thrombosis, and endothelial damage. The ADAPT Centre works in close collaboration with the Clinical Research Centre and the support of Dr. Dermot Kenny is acknowledged with gratitude.

The goal of ADAPT is to apply common protocols of risk factor management to all patients with cardiovascular disease. This has been achieved for patients with hypertension, dyslipidaemia, surgical vascular disease, diabetes, stroke and transient cerebral ischaemic events and the elderly with hypertension, and the active participation of Dr. Patricia McCormack, Professor David Bouchier-Hayes, Dr. Joan Moroney and Dr. Christopher Thompson in furthering the ADAPT principle of management is gratefully acknowledged. This year saw continuation of the RHASP (Reduction of Heart Attack and Stroke through Prevention) Pilot Project, supported by the Department of Health and Children as part of the Cardiovascular Strategy, whereby the ADAPT concept has been extended to primary care.

### *Personnel changes and achievements*

In 2004 Dr. Alice Stanton was appointed Director of Cardiovascular Research and Senior Lecturer in Clinical Pharmacology in the Royal College of Surgeons and Associate Director of the Clinical Research Centre at Beaumont Hospital; Professor Desmond Fitzgerald resigned as Professor of Clinical Pharmacology in RCSI to take up the position of Vice-president of Research at University College, Dublin; Professor Brian Harvey was appointed Director of the Institute of Biopharmaceutical Sciences and Professor Eoin O'Brien retired from clinical consultant duties in December 2004 after nearly 40 years of service to the Richmond Hospital, the Charitable Infirmary in Jervis Street and to Beaumont Hospital but continues in the Servier Chair of Cardiovascular Pharmacology.

David Farrell received the Certificate in Professional Development in Clinical Trials from John Moores University in Liverpool and the Institute of Clinical Research and Evelyn Clarke was conferred with a BSc in Nursing.

### ***Servier Chair of Cardiovascular Pharmacology***

The Servier Chair of Cardiovascular Pharmacology, to which Eoin O'Brien was appointed in 2001, is a unique partnership between the Institute of Biopharmaceutical Sciences at the Royal College of Surgeons in Ireland and the Servier Group in Paris. The Chair was endowed with the purpose of facilitating research into the treatment and management of cardiovascular disease with a particular emphasis on risk factor management and the identification of techniques to measure cardiovascular target organ involvement. The Chair has facilitated translational research at Beaumont Hospital by bringing the clinical facilities in the hospital into close liaison with the laboratory facilities in RCSI to provide a unified approach to research into cardiovascular disease.

### ***Research***

*ASCOT Study:* The Anglo-Scandinavian Cardiovascular Outcome Trial (ASCOT) is the largest international endeavour in which the Unit has participated. ASCOT has recruited over 20,000 patients at moderate risk from cardiovascular complications of hypertension to determine which blood pressure lowering or cholesterol-lowering drug is most beneficial in preventing stroke and heart attack. Dr. Alice Stanton has supervised a team of doctors and nurses specially recruited for the ASCOT programme. The ADAPT Centre, is one of the major centres (with over 500 participating patients) in ASCOT. The Lipid Lowering arm of the study was closed prematurely in 2003 because the benefit to patients receiving statin treatment was of the order of 30% reduction in heart attack and 25% in stroke compared with those patients receiving placebo.

The Data Monitoring Committee has now recommended that the blood pressure lowering arm of ASCOT be closed prematurely because of a lower total mortality in the 10,000 patients receiving the calcium-channel blocker and ACE inhibitor combination compared to the 10,000 patients receiving the beta-blocker and thiazide combination. These results, which have major implications for the future management of cardiovascular disease, are undergoing full analysis and will be published in the New Year.

*The RHASP Project:* The ADAPT Centre has collaborated with the Department of Health and Children in linking the *dabl*<sup>®</sup> data base at Beaumont Hospital to six selected practices in primary care so as to transmit information on cardiovascular risk from specialist hospital clinics to primary care physicians. RHASP is bringing best management of cardiovascular disease to primary care so as to effect the 30% reduction in stroke and heart attack that has been possible in the ASCOT Study with rigorous drug treatment of hypertension and dyslipidaemia. The pilot project has now been completed and has been independently audited by Professor John Cairns from the London School of Hygiene and Tropical Medicine. This report will be launched by An Tainaiste and Minister for Health, Mary Harney in January 2005. The extension of the RHASP model to 50 general practices in Heartwatch is being considered by the Department of Health and Children as a potential means of reducing Ireland's burden of cardiovascular disease, which is one of the highest in Europe.

### ***Publications and communications***

In 2004 the ADAPT Centre continued to contribute to hypertension research, publishing more than 20 scientific papers, and delivering research presentations at home, in the UK, Italy, Switzerland, France, Spain and Brazil.

### ***International collaborative research***

The ADAPT Centre continued to participate in a number of important international collaborative studies, which included the ASCOT, HYVET, ADVANCE, ON-TARGET and AIB Phase III studies. Participation in these studies has necessitated collaborative research with a number of institutions and universities abroad, which include Imperial College, London, St. Mary's Hospital, London, St. Bartholomew's Hospital, London, the Hammersmith Hospital, London, the Western Infirmary, Glasgow, the University of Louvain, the University of Ghent, Columbia University, New York, Sydney University, Australia, and the Universities of Florence and Milan, Italy.

### ***Epidemiological research projects***

The Allied Irish Bank Phase III Study, collected genetic samples from 700 AIB personnel to replenish the valuable genetic bank originally provided in the AIB Phase II Study, and the a further 300 genetic samples will be collected in the New Year. The data from the Phase II Study, which will provide

## Introduction

information for the first time on the changes in 24-hour ambulatory blood pressure with age and the relationship of such change to target organ status, will be submitted for publication shortly.

The ADAPT Centre data base contains comprehensive blood pressure data on over 26,000 patients. A collaborative partnership has been established with Dr. Jan Staessen in the Catholic University of Leuven to analyse the predictive value of blood pressure parameters in 700 cardiovascular deaths in this cohort. Led by Dr. Eamon Dolan, this study will prove the superior value of ambulatory blood pressure and particularly nocturnal blood pressure in the management of hypertension. Other research projects conducted during the year included are listed under 'On-going Research'.

### *Working Parties*

Eoin O'Brien continued to act during the year as Chairman of the Blood Pressure Measurement Working Group of the European Society of Hypertension. Dr. Alice Stanton is Chairman of the Irish Heart Foundation Council on High Blood Pressure. Eoin O'Brien is a member of the EU Standards Committee on Blood Pressure Measurement, the British Standards Institute and the Association for the Advancement of Medical Instrumentation in the US. He is also a member of the ASCOT Steering Committee and Genetics Committee and Chairman of the ASCOT Sub-study Committee, and Professor Desmond Fitzgerald and Dr. Alice Stanton are also members of the ASCOT Genetics Committee. During the year, Eoin O'Brien was asked by WHO in Geneva to select and Chair a Committee of experts to determine how best to measure blood pressure in the Developing World. As a member of Board of the International Centre for Health and Cooperation at Fordham University, he continued to participate in international humanitarian endeavours.

### *DABL<sup>®</sup> Program*

The efficient outpatient management of cardiovascular disease and the translational research facility in the Blood Pressure Unit has been achieved by utilising a management system that is dependent on a specially designed computer program - *dabl<sup>®</sup>* Cardiovascular - which has been developed over the past decade. During the year this program was further developed to include many additional functions, such as automatic generation of drug treatment and diagnoses, a flow chart, a pharmacopoeia, a scheduling system and security features. The *dabl<sup>®</sup>* Anticoagulant program was used to transfer 2000 patients attending the Anticoagulant Clinic from a traditional clinic to a computer managed virtual clinic. The *dabl<sup>®</sup>* Program has also been applied to a number of research projects being conducted by the ADAPT Centre. The *dabl<sup>®</sup>* Programs are now being incorporated for cardiovascular disease management in Florence, Milan, Leuven, London, New York and many institutions and practices in Ireland. Further details of the *dabl<sup>®</sup>* programs can be obtained on [www.dabl.ie](http://www.dabl.ie).

### *Websites*

During the 14th Scientific Meeting of the European Society of Hypertension the *dabl* Educational Trust website – [www.dableducational.org](http://www.dableducational.org) - was officially launched by Ambassador Pádraic MacKernan at the Embassy of Ireland in Paris. The occasion was attended by scientists from around the world, by members of international hypertension societies and representatives from manufacturers of blood pressure measurement devices. This not-for-profit website clarifies the current stage of knowledge about equipment used to measure blood pressure, and provides a valuable resource for all lay and medical consumers and for those with responsibility for purchasing blood pressure devices.

The ADAPT web site – [http://www.ecf.ie/adapt\\_website](http://www.ecf.ie/adapt_website) - provides a comprehensive bibliography of publications from the Blood Pressure Unit since 1978 and it is possible to obtain PDF copies of recently published papers.

### *Acknowledgements*

The research achievements outlined in this report have been facilitated by the Charitable Infirmary Charitable Trust, which has given valuable support to the Blood Pressure Unit and ADAPT Centre over many years. Research has also been funded by grants from RCSI, Servier Laboratories, Imperial College, London, HEA PRTL Cycle 3, Pfizer International, Institute for International Health, University of Sydney, Boehringer Ingelheim and MacMaster College, Department of Health and Children and the European Society of Cardiology, all of which are acknowledged with gratitude. Finally, tribute is paid to the diligence and loyalty of all the staff in the Blood Pressure Unit and ADAPT Centre, characteristics, which facilitate the team approach so necessary in scientific research.

**The ADAPT Centre & Blood Pressure Unit**

**Staff 2004**

**Medical**

Eoin O'Brien	Patricia McCormack
Desmond Fitzgerald	Emily Ho
David Bouchier-Hayes	Ailsa Fulton
Alice Stanton	Basil Al Aloul
Joan Moroney	Eamonn Dolan

**Nursing - Blood Pressure Unit**

Cora McTiernan	Mary Lyons
Evelyn Clarke	Helen O'Neill

**Nursing - ADAPT Centre**

David Farrell	Cathal Collier
Joanne Goodnough	Anne Murphy
Geraldine McCarthy	

**Technical**

<i>Echocardiographer</i>	<i>Computer Analyst</i>
Simon Lyons	Neil Atkins

**Secretarial**

Valerie Hughes	Eunice Carey
Barbara Gallagher	Orla Lambe
Kim Smyth	

## SCIENTIFIC AND EDUCATIONAL PUBLICATIONS 2004

### Original papers

1. PROGRESS Collaborative Group. Effects of a perindopril-based blood pressure lowering regimen on cardiac outcomes among patients with cerebrovascular disease. *European Heart J* 2003;**24**:475-484
2. Fagard R, Staessen JA, Thijs L, Bulpitt CJ, Clement D, deLeeuw P, Jaaskivi M, Mancia G, O'Brien E, Palatini P, Tuomilehto J, Webster J. Relationship between ambulatory blood pressure and follow-up clinic blood pressure in elderly patients with systolic, R. Huxley, C. Anderson, M.G. Bousser, J. Chalmers, S. Colman, S. Davis, G. Donnan, S. MacMahon, B. Neal, C. Warlow, and hypertension. *J Hypertens* 2004;**22**:81-87
3. N. Chapman M. Woodward. Effects of a Perindopril-Based Blood Pressure-Lowering Regimen on the Risk of Recurrent Stroke According to Stroke Subtype and Medical History: The PROGRESS Trial. *Stroke* 2004;**35**: 116 – 121
4. Staessen JA, Den Hond E, Celis H, Fagard R, Keary L, Vandenhoven G, O'Brien ET, for the Treatment of Hypertension Based on Home or Office Blood Pressure (THOP) Trial Investigators. Antihypertensive Treatment Based on Blood Pressure Measurement at Home or in the Physician's Office. A Randomized Controlled Trial. *JAMA* 2004;**291**:955-964
5. Mallion J-M, Chamontin B, Asmar R, De Leeuw PW, O'Brien E, Fitzgerald D, Duprez D, O'Rourke MF, Rahn K-H, Romero R, Battegay E, Hitzenberger G, Safar ME on behalf of the Reason project. Twenty-Four-Hour Ambulatory Blood Pressure Monitoring Efficacy of Perindopril/Indapamide First-Line Combination in Hypertensive Patients. The REASON Study. *Am J Hypertension* 2004;**17**:245-251
6. Staessen JA, Thijs L, Fagard R, Celis H, Birkenhager WH, Bulpitt CJ, de Leeuw PW, Fletcher AE, Forette F, Leonetti G, McCormack P, Nachevi C, O'Brien E, Rodicio JL, Rosenfeld J, Sarti C, Tuomilehto J, Webster J, Yodfat Y, Zanchetti A for the Systolic Hypertension in Europe (Syst-Eur) Trial Investigators. Effects of immediate versus delayed antihypertensive therapy on outcome in the Systolic Hypertension in Europe Trial. *J Hypertens* 2004; **22**:847-857
7. Rodgers A, Chapman N, Woodward M, Liu L-S, Colman S, Lee A, Chalmers J, MacMahon S, on behalf of the PROGRESS Collaborative Group. Perindopril-based blood pressure lowering in individuals with cerebrovascular disease: consistency of benefits by age, sex and region. *J Hypertens* 2004, **22**:653–659
8. Berthet K, Neal BC, Chalmers JP, MacMahon S, Bousser G, Colman SA, Woodward M on behalf of the PROGRESS Collaborative Group. *Blood Pressure* 2004;**13**:7-13
9. Celis H, Staessen J, Thijs L, Buntinx F, De Buyzere M, Den Hond E, Fagard R, O'Brien E. Cardiovasculair risico bij patienten met witte jashypertensie en constante hypertensie. *Huisarts Nu* 2004;**33**:281-285
10. de Luca N, Asmar RG, London GM, O'Rourke MF, Safar ME, on behalf of the REASON Project investigators. Selective reduction of cardiac mass and central blood pressure on low-dose combination perindopril/indapamide in hypertensive subjects. *J Hypertens* 2004; **22**:1623–1630
11. de Luca N, Mallion J-M, O'Rourke MF, O'Brien E, Rahn K-H, Trimmarco B, Romero R, De Leeuw PE, Hitzenberger G, Battegay E, Duprez D, Sever P, Safar ME, on behalf of the REASON project. Regression of left ventricular mass in hypertensive patients treated with perindopril/indapamide as a first-line combination: The REASON echocardiography study. *AJH*.2004;**17**:660-667
12. Staessen JA, Den Hond E, Celis H, Fagard R, Keary L, Vandenhoven G, O'Brien ET, for the Treatment of Hypertension Based on Home or Office Blood Pressure (THOP) Trial Investigator. Trial finds adjusting antihypertensive drugs based on home measurement may not improve blood pressure control [Commentary by Kjeldsen SE, Reims HM, Mancia G]. *Journal of Evidenced-Based Cardiovascular Medicine* 2004; **8**: 202-205.
13. O'Brien E, Atkins N. Can improved software facilitate the wider use of ambulatory blood pressure measurement in clinical practice? *Blood Press Monit* 2004;**9**:237-241
14. Den Hond E, Staessen JA, Celis H, Fagard R, Keary L, Vandenhoven G, O'Brien ET, for the Treatment of Hypertension Based on Home or Office Blood Pressure (THOP) Trial Investigators. Antihypertensive Treatment based on Home or Office Blood Pressure – the THOP trial. *Blood Press Monit* 2004;**9**:311-314
15. Dolan E, Stanton A, Atkins N, Den Hond E, Thijs L, McCormack P, Staessen J, O'Brien E. Determinants of White Coat Hypertension. *Blood Press Monit* 2004;**9**:307-310

16. Fagard RH, Staessen JA, Thijs L, Celis H, Birkenhager WH, Culpitt CJ, de Leeuw PW, Leonetti G, Sarti, Tuomilehto J, Webster J, Yodanis Y, for the Systolic Hypertension in Europe (Syst-Eur) Trial Investigators. Prognostic Significance of Electrocardiographic Voltages and Their Serial Changes in Elderly With Systolic Hypertension. *Hypertension*. 2004;44:459-464.

#### **Editorials**

1. Stergiou G, Mengden T, Padfield PL, Parati G, O'Brien E. Self monitoring of blood pressure at home, *BMJ* 2004;329:870-871
2. O'Brien E. What's new in blood pressure measurement? A workshop of the European Society of Hypertension. *Blood Press Monit* 2004;9:281-282

#### **Letters**

1. Staessen JA, Den Hond E, O'Brien ET Guidelines for Home- and Office-Based Blood Pressure Monitoring. *JAMA*, 2004;291:2315-216

#### **General and Educational**

1. O'Brien E, Stanton A. The RHASP Project. *Medicine Weekly*. 25 February 2004. 62-63
2. Dolan E, McCormack P. Management of hypertension in the elderly population. *Medicine Weekly*. 25 May 2004. 62
3. Ho E, Stanton AV. The role of the microcirculation in hypertension. *MEDICOGRAPHIA* 2003;25:??
4. Stanton A, O'Brien E. Should Clinic or 24hr Ambulatory BP Monitoring Guide Physicians? International Proceedings. 3<sup>rd</sup> Asian-Pacific Congress of Hypertension 2004;21-27
5. O'Brien E. European Society of Hypertension guidelines on blood pressure measurement. *Irish Medical News*. 18<sup>th</sup> October 2004
6. O'Brien E. Misdiagnosing hypertension: the importance of ABPM in identifying white coat and masked hypertension. *Forum* 2004
7. O'Brien E. How useful is self monitoring of blood pressure at home. *Forum* 2004;4:17-18

#### **Abstracts**

1. Ho E, Rooney Cm, Harhen B, Sever P, Hughes A, Thom S, Fitzgerald D, Stanton A. Doubling of isoprostane formation in a large cohort of hypertensive patients despite optimal medical management. *J Hypertens* 2004;22 (suppl 1): 43S
2. Dolan E, Atkins N, McClory S, Hinedi K, Stanton A, McCormack P, Staessen J, Thijs L, O'Brien E. A protocol for ascertaining mortality outcome in the absence of a national identifier or common fields. *J Hypertens* 2004;22 (suppl 1): 51S
3. Moore N, Stojanovic M, Lyons S, O'Brien E, O'Brien J, Stanton A. A newly discovered polymorphism in the rennin gene enhancer region is associated with elevated ambulatory BP levels in a large community population. *J Hypertens* 2004;22 (suppl 1): 178S
4. Al Aloud B, Fulton A, Cheng E, O'Brien E, Stanton A. Acute effects of hyperoxia and hypercapnia on retinal arteriolar and venular diameters. *J Hypertens* 2004;22 (suppl 1): 186S
5. Silveira E, Beckett N, Peters R, Banya W, Gil-Exterema B, Nachev C, Chodrouski Z, Fletcher A, Bulpitt C. Anti-hypertensive treatment does not lead to an increase in postural hypotension in most elderly patients – Results from the HYVET Pilot Study. *J Hypertens* 2004;22 (suppl 1): 93S
6. Peters R. The assessment of the quality of life in the Hypertension in the Very Elderly (HYVET) Trial. *J Hypertens* 2004;22 (suppl 1): 96S
7. Peters R on behalf of the HYVET investigators. Change of cognitive function within the first year of entering the Hypertension in the Very Elderly Trial (HYVET). *J Hypertens* 2004;22 (suppl 1): 54S
8. E. Den Hond, H. Celis, R. Fagard, E. O'Brien, J.A. Staessen, for the THOP investigators. Diagnostic threshold to define hypertension by self-measured home blood pressure – the clinical evidence. ECR. Nice. October 2004.



SCIENTIFIC AND EDUCATIONAL COMMUNICATIONS 2004

**Galway General Practice Symposium. Raddison Hotel. Galway. 14<sup>th</sup> January 2004.**

O'Brien E. *How can 24 hour blood pressure control be achieved?*

**Cork General Practice Symposium. Fota House. Cork. 15<sup>th</sup> January 2004.**

O'Brien E. *How can 24 hour blood pressure control be achieved?*

**Dublin General Practice Symposium. Dublin. 22<sup>nd</sup> January 2004.**

O'Brien E. *How can 24 hour blood pressure control be achieved?*

**Scientific Meeting. *The Great Debate*. RDS. Dublin. 29<sup>th</sup> January 2004.**

*ACE inhibitors are obsolete!* For the motion: E. O'Brien. Against the motion: H. McCann

**Centre for International Health & Cooperation. International Diploma in Humanitarian Affairs Course. Geneva University. Switzerland. 30<sup>th</sup> January 2004**

O'Brien E. *The global burden of cardiovascular disease.*

**20<sup>th</sup> Scientific Meeting of the International Society of Hypertension, Brazil. 15-19<sup>th</sup> February 2004**

O'Brien E. Is ABPM indispensable for good clinical practice? Breakfast Workshop: *Clinical utility of ambulatory and home blood pressure monitoring in the management of hypertension.*

Ho E, Rooney Cm, Harhen B, Sever P, Hughes A, Thom S, Fitzgerald D, Stanton A. Doubling of isoprostane formation in a large cohort of hypertensive patients despite optimal medical management. Poster presentation.

Dolan E, Atkins N, McClory S, Hinedi K, Stanton A, McCormack P, Staessen J, Thijs L, O'Brien E. A protocol for ascertaining mortality outcome in the absence of a national identifier or common fields. Poster presentation.

Moore N, Stojanovic M, Lyons S, O'Brien E, O'Brien J, Stanton A. A newly discovered polymorphism in the rennin gene enhancer region is associated with elevated ambulatory BP levels in a large community population. Poster presentation.

Al Aloud B, Fulton A, Ch ng E, O'Brien E, Stanton A. Acute effects of hyperoxia and hypercapnia on retinal arteriolar and venular diameters. Poster presentation.

**Kerry General Practice Symposium. Kilorclin. Co. Kerry. 5<sup>th</sup> March 2004**

O'Brien E. How can 24 hour blood pressure control be achieved?

**Rehabilitation Congress. RDS. Dublin. 14<sup>th</sup> May 2004**

O'Brien E. Computerised management of cardiovascular risk: ADAPT and RHASP.

**Diversity in Unity. Irish/German Symposium Dublin. 15<sup>th</sup> May 2004**

O'Brien E. When is high blood pressure hypertension?.

**Mallow General Practice Symposium. Mallow. Co. Cork. 28<sup>th</sup> May 2004**

O'Brien E. How can 24 hour blood pressure control be achieved?

**WHO Fifth International Heart Health Conference Positioning Technology to Serve Global Heart Health Meeting. Milan. 14<sup>th</sup> June 2004**

O'Brien E. Technical Specifications for Blood Pressure Measuring Devices and Interaction with Private Sector.

**Fourteenth European Meeting on Hypertension. Palais des Congres. Paris. France. 13-17<sup>th</sup> June 2004**

Breakfast Workshop, Blood Pressure measurement.. Chirmen: E. O'Brien & G. Stergiou

O'Brien E. Do we need diastolic pressure?

European Society of Hypertension Working Group on Blood Pressure Measurement Scientific Workshop: *What's new in Blood Pressure Measurement?*

O'Brien E. Bringing ABPM directly to primary care

Dolan E. The Dublin dabl database

**Diversity in Unity. Irish/German Symposium Dublin. 26<sup>th</sup> June 2004**

O'Brien E. When is high blood pressure hypertension?.

**Mayo Clinic Alumni Association International Educational Meeting. Adare Manor. Co. Limerick. 10<sup>th</sup> September 2004**

O'Brien E. Let humour be thine medicine.

**British Hypertension Society. Cambridge. 13 – 15<sup>th</sup> September 2004**

Dolan E, Stanton A, Hinedi K, Atkins N, McClory S, Sharif S, Den Hond E, Thijs L, McCormack P, Staessen J O'Brien E. . Prediction of cardiovascular mortality by ambulatory blood pressure monitoring: The Dublin mortality outcome study

Ho E, Rooney C, Harhen B, Sever P, Hughes A, Thom S, O'Brien E, Fitzgerald D, Stanton A. Atherosclerotic Burden and Oxidative Stress Contributes to Incomplete Response to Aspirin in Hypertensive Patients

Moore N, Stojanovic, M, Lyons S, Conroy R, Brien E, Shields D, O'Brien J, Stanton A. Association between a single nucleotide polymorphism in the distal enhancer region of the rennin gene and BP level in a healthy community dwelling population.

**Athlone General Practice Symposium. Athlone. Co. Galway. 16<sup>th</sup> September 2004**

O'Brien E. How can 24 hour blood pressure control be achieved?

**27<sup>th</sup> World Congress International Medicine, Granada. Spain. 27<sup>th</sup> September 2004**

**Plenary Session: Hypertension. New approaches to Therapy.**

O'Brien E. Rationale for a new approach in treating hypertension.

**Joint Meeting of the Irish Heart Foundation Council on High Blood Pressure & The Belgian Hypertension Society. RDS. Dublin. 15 – 16<sup>th</sup> October 2004**

O'Brien E. Keynote address: Why ambulatory blood pressure measurement is now indispensable to clinical practice.

Dolan E, Stanton A, Hinedi K, Atkins N, McClory S, Sharif S, Den Hond E, Thijs L, McCormack P, Staessen J O'Brien E. Prediction of cardiovascular mortality by ambulatory blood pressure monitoring: The Dublin mortality outcome study

Moore N, Stojanovic, M, Lyons S, Conroy R, Brien E, Shields D, O'Brien J, Stanton A. Association between a single nucleotide polymorphism in the distal enhancer region of the rennin gene and BP level in a healthy community dwelling population.

Ho E, Rooney C, Harhen B, Sever P, Hughes A, Thom S, O'Brien E, Fitzgerald D, Stanton A. Atherosclerotic Burden and Oxidative Stress Contributes to Incomplete Response to Aspirin in Hypertensive Patients

Dolan C, Shields D, Stanton A, O'Brien E, Lambert DM, Treacy EP. Polymorphisms of the Flavin Containing monooxygenase 3 (FMO3) do not predispose to Essential Hypertension in Caucasians.

**Diversity in Unity. Irish/German Symposium Dublin. 16<sup>th</sup> October 2004**

O'Brien E. When is high blood pressure hypertension?.

**2<sup>nd</sup> All Ireland Health Promotion Conference. Creating Healthy Environments. Enniskillen. Co. Fermanagh. 20<sup>th</sup> October 2004**

O'Brien E. Computerised management of an anticoagulant clinic using the *dabl Abticoagulant* Program.

**University of Florence. Florence. Tuscany, Italy. 2<sup>nd</sup> November 2004**

O'Brien E. Initiatives to manage the growing epidemic of cardiovascular disease.

**Healthcare Informatics Society of Ireland. 8<sup>th</sup> Annual Conference and Scientific Symposium. Dublin. 15<sup>th</sup> November 2003**

O'Brien E. A shared care approach to the management of cardiovascular disease: the RHASP project (Reduction of Heart Attack and Stroke through Prevention): A Cardiovascular Strategy Initiative.

**Dublin Molecular Medicine Course. RCSI. Dublin. 19<sup>th</sup> November 2004.**

O'Brien. E. A multifactorial approach to risk factor management in cardiovascular disease

ON-GOING RESEARCH 2004

1. CARDIOVASCULAR GENETICS		
	Project	Comment
1	<b>ASCOT Pheno-Geno Study: An ASCOT Sub-study</b> An intensive phenotyping study to enable the future examination of genetic influences on hypertension associated cardiovascular disease	Effect of aspirin and atorvastatin on thromboxane formation in a large cohort of hypertensive patients with normal to mildly raised cholesterol.
2		Determinants and consequences of increased isoprostane formation in hypertensive patients despite optimal medical management.
3	<b>Renin and ACE2 Gene Study</b> Studying the genetic variants in the genes for renin and ACE2, the influences on blood pressure levels, on responses to blockade and on the atherosclerotic process	A newly discovered polymorphism in the renin gene enhancer region is associated with elevated ambulatory BP levels in a large community population.
4		Study of renin gene polymorphisms, plasma renin activity and responses to rennin blockade
5	<b>Genetic Variance in Oxidant Stress</b> Studying the impact of oxidant stress on atherosclerotic burden	Novel single nucleotide polymorphisms detected by dHPLC variant scanning in Xanthine Oxidoreductase
6		Effects of promoter and coding polymorphisms in Xanthine Oxidoreductase on uric acid levels and on blood pressure.
7		Influence of Oxidant Stress on Enzyme Genetic Variance
8		Isoprostane formation and Carotid Intima-media Thickness
9	<b>Allied Irish Bank Study Phase III</b> Providing a DNA bank for normal carefully phenotyped subjects	Collection of DNA from 1000 normal subjects in the Allied Irish Bank, 600 of whom have been previously phenotyped

2. MEASURES OF CARDIOVASCULAR RISK AND TARGET ORGAN DAMAGE		
	Project	Comment
10	<b>The eye as a window to the arterial system</b> An in vivo study of human microvascular endothelial function.	Acute effects of hyperoxia, hypoxia and hypercarbia on retinal arteriolar and venular diameters
11		Effects of nitric oxide synthase and cyclooxygenase inhibition on retinal vascular reactivity – a novel non-invasive measure of endothelial function
12		Retinal vascular reactivity reflects coronary artery endothelial dysfunction
13	<b>Endothelial dysfunction in stroke patients</b>	Large vessel and microvascular endothelial dysfunction post acute ischaemic stroke
14	<b>Retinal Vascular Geometry in Glaucoma</b>	Assessment of retinal arteriolar and venular diameters in Glaucoma
15	<b>Retinal Vascular Geometry in Schizophrenia</b>	Abnormalities and asymmetry of retinal vasculature in people with schizophrenia

<b>3. EPIDEMIOLOGY OF AMBULATORY BLOOD PRESSURE</b>		
	<b>Project</b>	<b>Comment</b>
<b>16</b>	<b>The Allied Irish Bank Study. Phase II.</b>	A longitudinal study of changes in ambulatory blood pressure parameters in a healthy population. Patterns of age-related changes in ambulatory blood pressure parameters in 600 normal volunteers.
<b>17</b>	<b>ASCOT ABPM Sub-study</b>	24-h ambulatory blood pressure control as a predictor of outcome in treated hypertensive patients - a sub-study of ASCOT to assess the effect of Atorvastatin on ambulatory blood pressure parameters in the active and placebo limbs of the Lipid Lowering Arm of the ASCOT Study
<b>18</b>	<b>dabl Data base Outcome Study</b>	An outcome study to determine office and 24-hour ABPM blood pressure predictors of mortality in 700 cardiovascular deaths in 14,000 patients with hypertension followed from 1980 to 2002
<b>19</b>	<b>The OvA (Office versus Ambulatory Blood Pressure Measurement) in management of hypertension</b>	An on-going analysis of data from the OvA Study, the main results of which were published in <i>NEJM</i> 2003

<b>4. EFFECTS OF MANAGEMENT AND THERAPY</b>		
	<b>Project</b>	<b>Comment</b>
<b>20</b>	<b>Efficacy of Renin Inhibition in Essential Hypertension</b>	Blood pressure lowering in essential hypertension with an oral rennin inhibitor, aliskiren
<b>21</b>	<b>Anglo Scandinavian Cardiac Outcomes Trial (ASCOT).</b>	An on-going study of the efficacy of different blood pressure lowering agents in 20,000 moderate risk patients with hypertension; this study was ended in December 2004 because of benefit in on treatment limb; close-out will be completed in June 2005
<b>22</b>	<b>Action in Diabetes and Vascular Disease, Preterax and Diamicon MR Controlled Evaluation. (ADVANCE) Main Study</b>	A study of best management of cardiovascular risk in diabetic patients
<b>23</b>	<b>The RADOX Study: a Sub-study of ADVANCE</b>	A study of the effects of blood pressure lowering and blood glucose lowering on oxidative stress (urinary isoprostanes) among individuals with Type 2 diabetes
<b>24</b>	<b>The AdRem Study: Action in Diabetes and Vascular Disease Retinal Measurements Study - a Sub-study of ADVANCE</b>	A study of the effects of blood pressure lowering and glycaemic control on the retinal microvasculature
<b>25</b>	<b>OnTarget Study (Ongoing Telmisartan Alone and in combination with Ramipril Global Endpoint Trial)</b>	A study of the effects single and combination therapy in subjects with cardiovascular disease.
<b>26</b>	<b>TRANSCEND Study (Telmisartan Randomized Assessment Study in ACE intolerant subjects with cardiovascular Disease)</b>	A study of the effects of Telmesartan in subjects in subjects with cardiovascular disease who are intolerant to ACE inhibitors.
<b>27</b>	<b>The HYVET Study. Hypertension in the Very Elderly</b>	Evaluation of antihypertensive medication with Indapamide in the very elderly (over 80 years)

<b>5. COMPUTERISATION AND MEASUREMENT</b>		
	<b>Project</b>	<b>Comment</b>
28	<b>The RHASP (Reduction of Heart Attack and Stroke through Prevention): A Pilot Study</b>	A Department of Health sponsored pilot project to assess the feasibility of a shared care approach to the management of cardiovascular disease between general practice and a specialised centre using a common <i>dabl</i> cardiovascular data base. This study has ended and the independent assessment will be launched by An Tainaiste, Mary Harney in January 2005
29	<b>ASCOT: Sub-study: Omron Audit in ASCOT</b>	An ASCOT sub-study to assess the use of an automated device – OMRON CP-707 – in a large multicentre clinical trial
30	<b>Conduit Artery Functional Endpoint Study (CAFÉ Study)</b>	A sub-study of the ASCOT Study to determine the role of Applanation Tonometry in the ASCOT Study
31	<b>The international ABPM database</b>	A collaborative international study co-ordinated by Professor T. Pickering in Mount Sinai Hospital to establish an international data base of ABPM
32	<b>Computerised systems for Out-patient Management: <i>dabl</i> and ADAPT</b>	Computerisation of cardiovascular clinics to integrate management in the ADAPT, Blood Pressure, Lipid, Elderly, Stroke and TIA and Vascular Surgical Clinics in Beaumont Hospital.
33	<b>Computerised system for Management of anticoagulant Clinics: <i>dabl</i> Anticoagulant</b>	Development and application of a computerised management system for 2000 patients attending the Anticoagulant Clinic at Beaumont Hospital. A traditional clinic has been converted into a virtual clinic
34	<b>Computerised system for Ambulatory Blood Pressure Measurement in hospital and general practice: <i>dabl</i> ABPM</b>	Development of a computer program to analyse and interpret ABPM to facilitate introduction of the technique to general practice
35	<b>Computerised system for Blood Pressure Measurement in Clinical Trials: <i>dabl</i> Research</b>	Development of a computer program to standardise blood pressure measurement in clinical trials
36	<b>Development of the Sphygmocorder</b>	A collaborative venture with Bang & Olufsen Medicom to develop the Sphygmocorder for audio-visual evaluation of blood pressure measurement during device validation
37	<b>Specification of blood pressure measuring device for the developing world</b>	A WHO initiative to produce a specification for a blood pressure measuring device for the developing world and to oversee its manufacture.

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