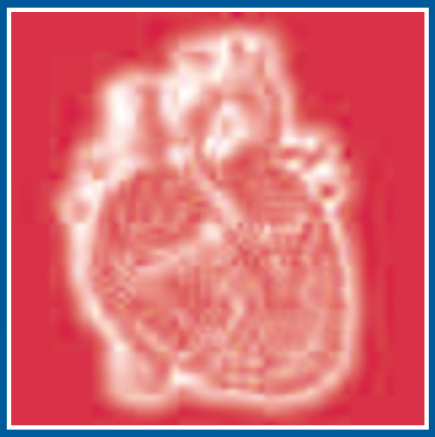

British Society for Heart Failure

15th Annual Autumn Meeting

Heart failure, a multidisciplinary approach

Fleming Room, Queen Elizabeth II Conference Centre, London

29–30 November 2012

Programme and Abstracts

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Contents

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Programme – Day One THURSDAY 29 NOVEMBER 2012

Programme directors: John Baxter (Sunderland) / Roy Gardner (Glasgow) / Theresa McDonagh (London) / Simon Williams (Manchester)

09:00–09:25	*Registration – Tea / Coffee*	
09:25–09:30	**Introduction**	*Suzanna Hardman (London)*
09:30–10:00	**Guest Lecture**	
	The role of mineralocorticoid receptor antagonists for reduced ejection fraction heart failure	*Faiez Zannad (Nancy, France)*
10:00–11:00	**Session 1: What's new?**	
Chairs:	**Suzanna Hardman (London) / Simon Williams (Manchester)**	
10:00–10:30	Heart Failure Audit	*Henry Dargie (Glasgow)*
10:30–11:00	How can national policy drive improvements in heart failure outcomes?	*Sir Mike Richards (London)*
11:00–11:20	*Coffee*	
11:20–12:50	**Session 2: Palliative care: a truly multidisciplinary approach**	
Chairs:	**John Baxter (Sunderland) / Jackie Taylor (Glasgow)**	
11:20–11:35	What can a cardiologist do to improve palliative care in chronic heart failure?	*Karen Hogg (Glasgow)*
11:35–11:50	Practical advice on difficult symptoms: a general practitioner's contribution	*Nigel Rowell (Middlesbrough)*
11:50–12:05	How to approach implantable cardioverter-defibrillator deactivation discussions	*Annie MacCallum (Gloucestershire)*
12:05–12:20	Palliation and congestive heart failure: issues in the elderly	*John Baxter (Sunderland)*
12:20–12:35	Supporting the palliative heart failure patient and carers	*Michael Connolly (Manchester)*
12:35–12:50	Panel discussion	
12:50–14:15	*Lunch and Meet the Expert sessions (see page 4)*	
14:15–16:10	**Session 3: Cardiac remodelling in left ventricular systolic dysfunction** (supported by an educational grant from Pfizer)	
Chairs:	**Henry Dargie (Glasgow) / Theresa McDonagh (London)**	
14:15–14:45	Ventricular remodelling: stepping back – looking forward	*Marc Pfeffer (Boston, MA, USA)*
14:45–15:05	How can we detect it non-invasively?	*Robin Weir (Glasgow)*
15:05–15:25	Biomarkers to monitor the effects of therapies that target remodelling	*Iain Squire (Leicester)*
15:25–15:55	New European Society of Cardiology guidelines	*Theresa McDonagh (London)*
15:55–16:10	Panel discussion	
16:10–16:35	*Coffee*	
16:35–17:37	**Session 4: Research and abstract presentations / Hyde Park presentations**	
Chairs:	**Paul Kalra (Portsmouth) / Iain Squire (Leicester)**	
	Abstract discussion panel: John Baxter (Sunderland) / Theresa McDonagh (London) / Simon Williams (Manchester)	
16:35–17:05	**Young Investigators' Award**	
16:35–16:45	Abstract presentation	*Syed Ahsan (London)*
16:45–16:55	Abstract presentation	*Colette Jackson (Glasgow)*
16:55–17:05	Abstract presentation	*Donah Zachariah (Portsmouth)*
17:05–17:37	**Hyde Park presentations**	
17:05–17:13	Telehealth – is it just another machine that goes bing!?	*Kevin Goode (Hull)*
17:13–17:21	The fatal cloak of congestion	*Hugh McIntyre (Hastings)*
17:21–17.29	Heart transplantation should be banned	*Andrew Clark (Hull)*
17:29–17:37	KISS (Keep It Simple Stupid) we're broke	*Rob Howlett (Thaxted)*
17:40	*Wine and cheese reception*	

Programme – Day Two FRIDAY 30 NOVEMBER 2012

08:30–08:55	**BSH Annual General Meeting (BSH members only)**	
Chairs:	**Suzanna Hardman (London) / Paul Kalra (Portsmouth)**	
08:55–09:00	**Prize for best abstract**	
09:00–10:00	**Session 5: Case studies**	
Chairs:	**Roy Gardner (Glasgow) / Paul Kalra (Portsmouth)**	
09:00–09:20	Nurse	*Jayne Masters (Southampton)*
09:20–09:40	Primary care	*Jim Moore (Cheltenham)*
09:40–10:00	Cardiology trainee	*Steve Shaw (Manchester)*
10:00–10:20	*Coffee*	
10:20–11:50	**Session 6: The management of atrial fibrillation in congestive heart failure** (with HRUK)	
Chairs:	**Peter Cowburn (Southampton) / Suzanna Hardman (London)**	
10:20–10:40	What really causes arrhythmias in heart failure?	*Christopher George (Cardiff)*
10:40–11:00	New drugs (i.e. factor Xa inhibitors / dronedarone)	*John Cleland (Hull)*
11:00–11:20	Ablation in CHF	*Stephen Furniss (Hastings)*
11:20–11:40	Does cardiac resynchronisation therapy work in atrial fibrillation?	*Rakesh Sharma (London)*
11:40–11:50	Panel discussion	
11:50–13:10	*Lunch and Meet the Expert sessions (see page 4)*	
13:10–14:40	**Session 7: Controversies in heart failure: role of heart rate lowering**	
Chairs:	**Andrew Clark (Hull) / Theresa McDonagh (London)**	
13:10–13:30	Importance of heart rate in cardiovascular disease	*Andrew Clark (Hull)*
13:30–13:50	Beta blockers	*Henry Dargie (Glasgow)*
13:50–14:10	Ivabradine	*Suzanna Hardman (London)*
14:10–14:30	Devices & heart rate	*Roy Gardner (Glasgow)*
14:30–14:40	Panel discussion	
14:40–14:55	*Coffee*	
14:55–16:25	**Session 8: Acute heart failure / decompensation**	
Chairs:	**Jayan Parameshwar (Papworth) / Mark Petrie (Glasgow)**	
14:55–15:15	Medical perspective	*Simon Williams (Manchester)*
15:15–15:35	Intensivist approach	*Robyn Smith (Glasgow)*
15:35–15:55	Surgical approach (including ventricular assist devices)	*Steve Tsui (Cambridge)*
15:55–16:10	Patient with long-term VAD	*Harry Prentice (Glasgow)*
16:10–16:25	Panel discussion	
16:25–17:35	**Session 9: What to do with mitral regurgitation in congestive heart failure**	
Chairs:	**Andrew Clark (Hull) / Roy Gardner (Glasgow)**	
16:25–16:40	A case of mitral regurgitation	*Alison Duncan (London)*
16:40–16:55	A non-interventionalist's view	*Alison Seed (Blackpool)*
16:55–17:10	A surgeon's view	*Ben Bridgewater (Manchester)*
17:10–17:25	An interventionalist's view	*Jonathan Byrne (London)*
17:25–17:35	The panel and vote	
17:35	***Meeting close***	

THURSDAY 29 NOVEMBER 2012

Expert: **Professor Theresa McDonagh** (King's College Hospital, London)
Time: 13:45–13:55
Topic: Relieving symptoms and improving outcomes in acute heart failure: results of RELAX-AHF
Location: Novartis exhibition stand

Expert: **Professor Simon Redwood** (St. Thomas' Hospital, London)
Time: 13:55–14:05
Topic: TAVI – an emerging option for your high risk patients with aortic stenosis
Location: Edwards Lifesciences exhibition stand

Expert: **Dr Paul Kalra** (Queen Alexandra Hospital, Portsmouth)
Time: 14:05–14:15
Topic: Biomarkers - what's hot and clinical unity
Location: Alere exhibition stand

FRIDAY 30 NOVEMBER 2012

Expert: **Dr Simon Williams** (Wythenshawe Hospital, Manchester)
Time: 12:40–12:50
Topic: Heart rate in heart failure, ivabradine, the SHIFT trial, guidelines and NICE
Location: Servier exhibition stand

Expert: **Dr Guy MacGowan** (Freeman Hospital, Newcastle upon Tyne)
Time: 12:50–13:00
Topic: Who should be referred for a VAD?
Location: HeartWare exhibition stand

Expert: **Dr Steve Shaw** (Wythenshawe Hospital, Manchester)
Time: 13:00–13:10
Topic: LVAD: bridging the gap
Location: Thoratec exhibition stand

The role of mineralocorticoid receptor antagonists for reduced ejection fraction heart failure

Faiez Zannad

Centre d'Investigation Clinique – INSERM 9501 CHU de Nancy, Institut Lorrain du Coeur et des Vaisseaux Louis Mathieu, Université de Lorraine, Nancy, France

Mineralocorticoid receptor antagonists (MRAs) improve survival and reduce morbidity in patients with heart failure (HF), reduced ejection fraction (HF-REF) and mild-to-severe symptoms, and in patients with left ventricular systolic dysfunction and heart failure after acute myocardial infarction (MI). These clinical benefits are observed in addition to those of angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs) and beta blockers. The morbidity and mortality benefits of MRAs may be mediated by several proposed actions, including antifibrotic mechanisms that slow HF progression, prevent or reverse cardiac remodelling, or reduce arrhythmogenesis. Both eplerenone and spironolactone have demonstrated survival benefits in individual clinical trials. Pharmacologic differences exist between the drugs, which may be relevant for therapeutic decision making in individual patients. Although serious hyperkalaemia events were reported in the major MRA clinical trials, these risks can be mitigated through appropriate patient selection, dose selection, patient education, monitoring and follow-up. When used appropriately, MRAs significantly improve outcomes across the spectrum of patients with HF-REF. Consequently, in the latest international guidelines, an MRA is strongly recommended (grade I, level of evidence A) for all patients with persisting symptoms (New York Heart Association class II–IV) and an ejection fraction ≤35% despite treatment with an ACE inhibitor (or ARB) to reduce the risk of HF hospitalisation and the risk of premature death. As the totality of evidence grows, new strategies are needed to ensure the uptake of clinical trial evidence into clinical practice, from appropriate patient selection to optimal monitoring practices. The expansion of guideline recommendations for MRAs to include less sick patients may serve as a stimulus to develop such strategies or processes of care. MRAs are being evaluated in several new patient populations, including HF with preserved systolic function, ST segment elevation MI without HF, end-stage renal disease on haemodialysis, atrial fibrillation, diabetic nephropathy and other diseases in which aldosterone contributes to disease pathology. Other novel methods of blocking the deleterious effects of aldosterone, such as aldosterone synthase inhibition, are also under development.

Heart Failure Audit

Henry Dargie

University of Glasgow

The National Heart Failure Audit (NHFA), which is now in its 6th year of activity, is a joint project of the British Society for Heart Failure (BSH) and the Healthcare Quality Improvement Partnership (HQUIP) of the National Health Service. It is also now a member of the National Institute for Cardiac Outcomes Research (NICOR), a partnership of clinicians, IT experts, statisticians, academics and managers which manages six other cardiovascular clinical audits and three clinical registers.

The NHFA collects data on deaths and discharges from hospital associated with a primary diagnosis of heart failure in England and Wales. There are now >130,000 records in the database, which has become a potent source of information on how well we manage patients admitted as an emergency to hospital with acute heart failure. It is now probably the largest continuous unselected audit of acute heart failure in the world.

The database has recently been revised to include a series of new fields that will allow credible risk-adjusted data to be produced thereby enabling reasonable comparisons of outcomes among centres.

The data continue to suggest that managing heart failure patients in a specialist setting is beneficial with in-hospital mortalities in 2010/11 of 14% in general medical wards, 17% in other wards and 8% in cardiology wards. These figures are higher than those reported from Europe and the USA. We think this reflects much better case-ascertainment and the relatively unselective nature of our data. The average age of our patients is 78 years, which is about a decade older than many other large surveys and much closer to the real clinical experience of heart failure.

An NHFA research group (HALO) has been established and several projects are underway or under discussion which we hope will greatly expand the output. The projects involve both users of the audit, external researchers and collaborations among the six cardiovascular audits within NICOR. For example, we are developing a programme of research with MINAP, the myocardial infarction audit, to investigate the incidence of heart failure and its outcome subsequent to myocardial infarction, a major cause of heart failure in the UK.

Data from the 5th annual report of the National Heart Failure Audit will be presented on patients discharged from NHS Trusts in England and Health Boards in Wales between 1 April 2011 and 31 March 2012.

This presentation is on behalf of the Project Group of the NHFA which includes Theresa McDonagh (Chair), John Cleland, Henry Dargie, Suzanna Hardman and Polly Mitchell.

How can national policy drive improvements in heart failure outcomes?

Sir Mike Richards

Department of Health

The abstract for this presentation was not submitted before going to press.

What can a cardiologist do to improve palliative care in chronic heart failure?

Karen Hogg

Glasgow Royal Infirmary and the Golden Jubilee National Hospital, Glasgow

Despite varied and complex therapeutic strategies for managing patients with heart failure the prognosis remains extremely poor. Patients with advanced heart failure often have multiple co-morbidities and this, combined with the unpredictable illness trajectory, commonly results in uncoordinated care, which precipitates recurrent hospital admissions. In comparison to patients with malignant disease, heart failure patients are less likely to have access to palliative care and consequently tend not to be involved in end-of-life discussions; they are also more likely to remain symptomatic and to die in hospital.

The importance of palliative care in advanced heart failure is well recognised and is now integrated into national and international guidelines for heart failure management. However, access to palliative care for patients with advanced heart failure is often hindered by a poor understanding of the term 'palliative'. It is imperative that healthcare professionals recognise that palliative care is not specifically or exclusively for patients with malignancy or where death is imminent, but is appropriate management for any patient with distressing symptoms. A further barrier to initiating palliative care in patients with heart failure is the difficulty with prognostication. Traditionally, clinicians have focused on predicting which patients were developing end-stage disease, which is notoriously difficult in heart failure due to the erratic illness trajectory. It is essential, therefore, that we shift our focus from attempting to predict impending death to recognising when symptom management is inadequate despite optimisation of heart failure therapy.

Cardiologists, therefore, have an extremely important role to play in providing palliative care for patients with heart failure. This includes identifying patients with palliative needs using symptom triggers and then managing these symptoms whilst maintaining appropriate heart failure therapy. Additionally, the cardiologist should lead the development of medical anticipatory care plans to direct the routine and emergency management of patients' chronic symptoms and clinical deteriorations in accordance with patients' priorities of care. Successful palliative care in advanced heart failure is dependent on collaborative working within a multi-disciplinary team, which in addition to a cardiologist variably includes heart failure and palliative care specialist nurses, geriatricians, the patient's general practitioner, and physio- and occupational therapists. The cardiologist, however, is essential to this process, and to providing equity of access to palliative care where appropriate for patients with advanced heart failure.

Further reading

Connolly C, Beattie J, Walker D et al. *End of Life Care in Heart Failure. A Framework for Implementation*. Heart Improvement Programme, NHS Improvement. Available at: http://www.endoflifecareforadults.nhs.uk/assets/downloads/End_of_Life_Care_in_heart_failure.pdf.

Goodlin SJ. Palliative care in congestive heart failure. *J Am Coll Cardiol* 2009;54:386–96.

Hogg KJ, Jenkins SM. Prognostication or identification of palliative needs in advanced heart failure: where should the focus lie? *Heart* 2012;98:523–4.

Johnson M, Hogg K, Beattie J. *Heart Failure. From Advanced Disease to Bereavement*. Oxford Specialist Handbooks in End of Life Care. Oxford University Press, 2012.

Practical advice on difficult symptoms: a general practitioner's contribution

Nigel Rowell

Endeavour Practice, Middlesbrough

Cardiologists have not had to work with palliative care teams very much in the past but, with increasing numbers of patients with heart failure and uncontrolled symptoms at the end of life, this is all changing.

Joint working to tackle difficult symptoms proves to be the most effective management strategy.

The most common symptoms that require tackling in the closing overs of heart failure are breathlessness, pain, depression and fatigue, and there are a number of strategies that we draw on from our palliative care colleagues. In addition, there is the added dimension of turning off devices, which doesn't apply in many other disease end states.

There is increasing research in this area with the result that more patients are being supported in the community and given the opportunity to die in their preferred location.

How to approach implantable cardioverter-defibrillator deactivation discussions

Annie MacCallum

NHS Gloucestershire Care Services

As the indications for implantable cardioverter-defibrillator (ICD) implantation continue to expand, the issue of device deactivation will become increasingly relevant as the population ages. ICD implanted patients may later become terminally ill, either from their underlying cardiac disease or from an unrelated cause such as cancer. During the terminal phase of illness patients may experience hypoxia, sepsis, pain, worsening heart failure and electrolyte disturbances predisposing them to the risk of arrhythmias and unwanted shock therapy. Lampert et al.[1] suggest that in the last weeks of life, 20% of patients receive shocks which are painful and distressing.

Healthcare professionals involved in the care of patients with an ICD are recognising the importance of patients and their relatives having the opportunity to discuss elective deactivation of their device, and whilst deactivation of the device is a simple procedure, there are many challenges for the patient, their relatives and healthcare professionals.

Recognition of the complex and unique issues relating to ICD deactivation has led to the development of expert consensus statements from the Heart Rhythm Society[1] and the European Heart Rhythm Association[2] to guide all healthcare professionals who treat patients with implanted ICDs nearing the end of life. The consensus statements outline all the principles which must be considered, and state the importance of ensuring that patients receive comprehensive information so that they can understand why deactivation should be considered and make an informed decision to have their device deactivated or to decline deactivation.

Whilst discussion about elective deactivation is recommended as part of pre-ICD counselling,[1,3,4] it is questionable how many patients can retain the quantity of information given at that time. Discussions about elective deactivation before the terminal phase of illness could reduce some of the difficulties encountered in explaining complex decisions at the end of life. Advanced directives can be a useful tool, although research by Berger et al.[5] suggests that what patients may want will vary. In practice, the majority of discussions about ICD deactivation are introduced very near the end of life. The presentation will discuss approaches to ICD deactivation discussions.

References

1. Lampert R, Hayes DL, Annas GJ et al., for American College of Cardiology; American Geriatrics Society; American Academy of Hospice and Palliative Medicine; American Heart Association; European Heart Rhythm Association; Hospice and Palliative Nurses Association. HRS Expert Consensus Statement on the Management of Cardiovascular Implantable Electronic Devices (CIEDs) in patients nearing end of life or requesting withdrawal of therapy. *Heart Rhythm* 2010;1:1008–26.
2. Padeletti L, Arnar DO, Boncinelli L et al., for European Heart Rhythm Association; Heart Rhythm Society. EHRA Expert Consensus Statement on the management of cardiovascular implantable electronic devices in patients nearing end of life or requesting withdrawal of therapy. *Europace* 2010; 12:1480–9.
3. Beattie JM. *Implantable cardioverter defibrillators in patients who are eeaching the end of life.* British Heart Foundation, London, 2007. Available at: http://www.bcs.com/documents/ICS_in_patients_who_are_reaching_the_end_of_life.pdf.
4. Raphael CE, Koa-Wing M, Stain N et al. Implantable cardioverter-defibrillator recipient attitudes towards device deactivation: how much do patients want to know? *Pacing Clin Electrophysiol* 2011;34:1628–33.
5. Berger JT, Gorski M, Cohen T. Advanced health planning and treatment preferences among recipients of implantable cardioverter-defibrillators: an exploratory study. *J Clin Ethics* 2006;17:72–8.

Palliation and congestive heart failure: issues in the elderly

John Baxter

Sunderland Royal Hospital

A multi-disciplinary approach is the most effective way to achieve the best possible palliative care for our elderly heart failure patients. The management of elderly congestive heart failure (CHF) patients is complicated by the presence of co-morbidities and functional decline.

When dealing with elderly heart failure patients we need to ensure timely and accurate communications, and this should start with our patients, their relatives and carers.

An obstacle to this approach is dealing with patients who may not have the capacity to participate in those communications. All healthcare professionals in the CHF team need to have the skills to assess patient capacity and have clear understanding of the Mental Capacity Act. They should also have the communication skills to share best interest decisions with relatives. The 'deciding right' approach, developed by NHS North East, may help CHF teams approach difficult ethical and medico-legal issues in elderly CHF patients.

Many CHF patients require hospital admissions during the course of their illness. As age increases so may the total number of hospital admissions. The outcomes from each admission may change over time and it is important to recognise that there may be a mismatch in outcome expectations and outcome realities. Managing the expectations of an older CHF patient, their relatives and carers is a vital part of successful palliation. This is particularly difficult on acute wards where the culture of aggressive management is the norm rather than a palliative approach. These units may find tools such as the AMBER care bundle and Liverpool Care Pathway for the Dying Patient useful in some, but not all, elderly CHF patients. Using these tools requires sensitive negotiation skills and expectation management.

Anticipation of unstable symptoms is the best approach to achieving symptom control in end-stage CHF patients. We have shown that anticipatory prescribing is very successful in dealing with these symptoms, when used in conjunction with regular review and escalation to regular medication, as required.

Further reading

Baxter J, McDonagh T. Can geriatricians improve inpatient heart failure care? Time for a heart to heart. *Age Ageing* 2012;41:140–1.

Guy's and St Thomas' NHS Foundation Trust. AMBER care bundle. Available at: www.ambercarebundle.org.

NHS North East. Deciding Right. *An integrated approach to making care decisions in advance with children, young people and adults*. Available at: http://www.theclinicalnetwork.org/uploads/doc/vid_14439_Deciding%20Right-%20full%20document%20v15-%203Feb12.pdf.

Supporting the palliative heart failure patient and carers

Michael Connolly

Hospital of South Manchester NHS Foundation Trust

People with advanced heart failure experience difficult symptoms including tiredness and breathlessness. Their quality of life has been found to be poor in many cases. Their carers experience anxiety and isolation: they describe a searching for support. Whilst diagnosis and treatments for advanced heart failure continue to improve, the investment in supportive care structures and the communication skills of professionals lag far behind similar developments in cancer care.

Patients with heart failure, however, are not all the same. Some would like frank and open discussions with their professional carers whilst others would prefer not to discuss end of life at all. Discussing end-of-life care, therefore, is neither comfortable nor easy for the professionals. Heart failure clinicians focus on symptom management and medication protocols rather than the concerns and priorities of the patients. This presentation will discuss the implications of these findings for our practice.

Further reading

Barclay S, Momen N, Case-Upton S et al. End-of-life care conversations with heart failure patients: a systematic literature review and narrative synthesis. *Br J Gen Pract* 2011;61:e49–62.

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Pattenden JF, Roberts H, Lewin R. Living with heart failure; patient and carer perspectives. *Eur J Cardiovasc Nurs* 2007;6:273–9.

Sanders S, Harrison S, Checkland K. Personalizing protocol-driven care: the case of specialist heart failure nurses. *J Adv Nurs* 2010;66:1937–45.

Ventricular remodelling: stepping back – looking forward

Marc Pfeffer

Dzau Professor of Medicine, Cardiovascular Division, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA

As physicians, we are fundamentally biologists with the objective of utilising this knowledge to limit disease burden. As medical practitioners and investigators, we strive to contribute meaningfully to this growing body of knowledge to improve the understanding of physiology and pathophysiology in an attempt to develop better therapeutic approaches for patients. The objective of this lecture to the British Society for Heart Failure will be to present a hopefully entertaining lecture concerning my personal professional journey exploring the interfaces of cardiac plasticity and therapies.

How can we detect it non-invasively?

Robin Weir

Hairmyres Hospital, Glasgow

The importance of ventricular remodelling in the progressive course of heart failure has become increasingly recognised as a key focus for therapies aimed at improving outcomes in this condition. Several trials have used effects on ventricular remodelling as a surrogate endpoint for major adverse cardiovascular events in both acute myocardial infarction and chronic heart failure. In this talk, the definition of remodelling will be re-visited, and the various imaging modalities that are used to measure and monitor this process will be reviewed, compared and contrasted.

Biomarkers to monitor the effects of therapies that target remodelling

Iain Squire

Glenfield Hospital, Leicester

The importance of left ventricular remodelling to the development and progression of heart failure is well recognised. Similarly, we are all aware of the disease-modifying effect of a number of interventions, pharmacological and mechanical, in patients with heart failure. How can we assess or quantify the impact of our interventions in patients? Recent years have seen the identification of a myriad of biomarkers which we use variously to aid the identification of, or to risk stratify, patients with heart failure. More challenging has been the application of such biomarkers to the identification of patients likely to respond to intervention with favourable reverse remodelling. This presentation will explore some of the data in this area, with reference not only to patients with heart failure, but also to those with other pathology.

New European Society of Cardiology guidelines

Theresa McDonagh

King's College Hospital, London

The new European Society of Cardiology (ESC) guidelines for the diagnosis and treatment of heart failure are available online at http://www.escardio.org/guidelines; a printed copy is also available in the *European Heart Journal*.[1]

The principal changes introduced by John McMurray and his Task Force relate to:

1. *An expansion of the indication for mineralocorticoid (aldosterone) receptor antagonists (MRAs).* MRAs such as spironolactone or eplerenone are now recommended for all heart failure patients with persisting symptoms (New York Heart Association [NYHA] class II–IV) and an ejection fraction (EF) ≤35% despite treatment with an angiotensin-converting enzyme (ACE) inhibitor and a beta-blocker to reduce the risk of heart failure hospitalization and the risk of premature death (I-A recommendation).
2. *A new indication for the sinus node inhibitor ivabradine*. Based on the results of the SHIFT-trial, ivabradine should now be considered to reduce the risk of heart failure hospitalization in patients in sinus rhythm with an EF ≤35%, a heart rate remaining ≥70 bpm and persisting symptoms (NYHA class II–IV) despite treatment with an evidence-based dose of beta-blocker, ACE inhibitor and MRA (IIa-B recommendation). Ivabradine may also be considered to reduce the risk of heart failure hospitalization in patients in sinus rhythm with an ejection fraction ≤35% and a heart rate ≥70 bpm, who are unable to tolerate a beta-blocker (IIb-C recommendation).
3. *An expanded indication for cardiac resynchronization therapy (CRT)*. CRT (preferably CRT-D) is now recommended in patients with NYHA class II heart failure if they are in sinus rhythm, with a QRS duration of ≥130 ms, left bundle branch block (LBBB) QRS morphology and an EF ≤30%, and are expected to survive with good functional status for >1 year to reduce the risk of heart failure hospitalization and the risk of premature death. In contrast, in patients who do not have a LBBB QRS morphology, a QRS duration of ≥150 ms is required and the level of recommendation is only IIa-A. The guideline also indicates that the evidence for CRT is uncertain in 2 two commonly encountered clinical situations, namely in patients with atrial fibrillation and when a patient with a reduced EF has an indication for conventional pacing and no other indication for CRT.
4. *New information on the role of coronary revascularisation in heart failure.* The STICH trial led to a I-B recommendation to use coronary artery bypass graft (CABG) surgery in patients with angina and 2- or 3-vessel coronary disease, including a left anterior descending stenosis, who have a left ventricular EF ≤35% and who are otherwise suitable for surgery and expected to survive ≥1 year with good functional status.
5. *Recognition of the growing use of ventricular assist devices*. Left ventricular or biventricular assist devices are recommended in selected patients with end-stage heart failure despite optimal pharmacological and device treatment, and who are otherwise suitable for heart transplantation, to improve symptoms and reduce the risk of heart failure hospitalization and to reduce the risk of premature death while awaiting transplantation (I-B recommendation). However, this recommendation is restricted to patients who have severe heart failure symptoms for >2 months despite optimal medical and device therapy and additional clearly defined conditions.
6. *The emergence of transcatheter valve interventions*. Transcatheter aortic valve replacement should be considered in patients with heart failure and severe aortic stenosis if patients are not medically fit for surgery (in general because of severe pulmonary disease). In patients with secondary mitral regurgitation who are judged inoperable or at unacceptably high surgical risk, percutaneous edge-to-edge repair (mitral clip) may be considered in order to improve symptoms.

Reference

1. McMurray JJV, Adamopoulos S, Anker SD et al. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012. *Eur Heart J* 2012;33:1787–847.

Young Investigators' Award

Multipolar left ventricular pacing to optimise acute haemodynamic response to cardiac resynchronisation therapy

***SY Ahsan**,* B Sabberwal, C Hayward, P Lambiase, M Thomas, GG Babu, S Aggarwal, MD Lowe, AWC Chow*

The Heart Hospital, Institute of Cardiovascular Science, University College Hospitals NHS Foundation Trust

Purpose: Cardiac resynchronisation therapy (CRT) reduces morbidity and mortality in a sub-group of patients with heart failure, though up to 30% of patients have no benefit. CRT patients are heterogeneous and an individualised approach to CRT may be needed to increase response rate. We evaluated the impact of different left ventricular (LV) pacing sites and configurations on the acute haemodynamic response (AHR) to CRT.

Methods: 28 patients (male 75%, female 25%, age 66.4±11.5, DCM 50%, IHD 50%, NYHA class 2.7±0.4, LVEF 24.6±6.5% and QRS 149±31 ms) referred for CRT underwent an acute study to analyse the AHR with CRT, using single and multi-site pacing from within a coronary sinus (CS) branch. Electrophysiology catheters were positioned in the right atrium and ventricle. An octapolar catheter was introduced to one or more branches of the CS. 15 pre-determined biventricular pacing configurations stimulating single and multiple sites within each CS branch were analysed in all patients. AV intervals were optimised invasively in all patients. For each pacing configuration, a pressure-sensor tipped guidewire was passed to the LV cavity to measure dP/dt max. Acute trans-thoracic echo data (aortic VTI and tissue doppler measurements to assess dysynchrony) were acquired simultaneously.

Results: Major intra- and inter-individual variations in the AHR were noted. The mean dp/dt max during sinus rhythm was 947±221. When using a conventional biventricular configuration, this increased to 1177±306 (an increase of 24.3%; p<0.001). Selecting the best LV pacing configuration for each patient (either single or multisite) led to a further increase in dP/dt max to 1291±333 (Figure). This represents an increase in dP/dt max of 9.9% compared to conventional biventricular pacing (p<0.001) and an absolute increase of 36.3% from baseline (p<0.001). Compared to standard biventricular pacing, significant improvements in dP/dt max were also observed using either the best single LV site (6.8%; p<0.002) or LV multi-site (5.8%; p=0.005) configurations.

Conclusions: Significant improvements in the AHR to CRT, over and above that observed with conventional biventricular pacing, can be achieved by selecting the best single or multi-site LV pacing configuration tailored individually to each patient.

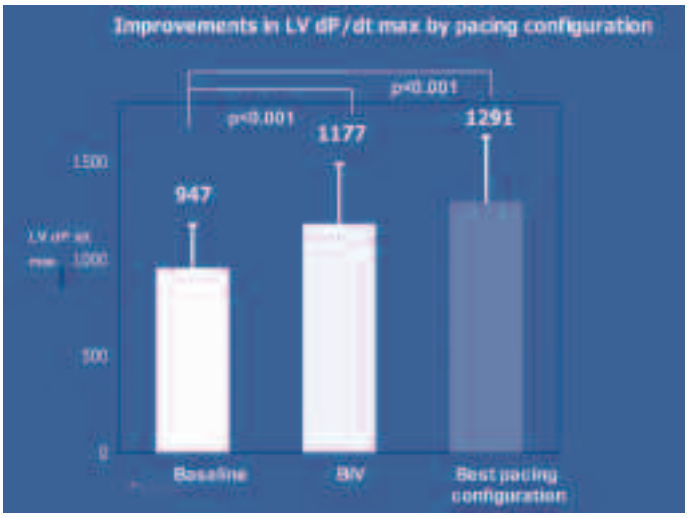

Figure. Improvements in LV dP/dt max by pacing configuration.

**Presenting author*

Young Investigators' Award

Microvolt T-wave alternans testing has no prognostic value in patients recently hospitalised with decompensated heart failure

Colette E Jackson,[1]* *Rachel C Myles*,[1] *Ioannis K Tsorlalis*,[1] *Jonathan R Dalzell*,[1] *J Paul Rocchiccioli*,[1] *John R Rodgers*,[2] *Richard J Spooner*,[3] *Nicola Greenlaw*,[4] *Ian Ford*,[4] *Roy S Gardner*,[5] *Stuart M Cobbe*,[1] *Mark C Petrie*,[5] *John JV McMurray*[1]

[1]British Heart Foundation Cardiovascular Research Centre, University of Glasgow; [2]Department of Cardiology, Glasgow Royal Infirmary; [3]Department of Biochemistry, Gartnavel General Hospital; [4]Robertson Centre for Biostatistics, University of Glasgow; [5]Scottish National Advanced Heart Failure Service, Golden Jubilee National Hospital, Glasgow

Purpose: Ventricular arrhythmias contribute to the high risk of sudden cardiac death in heart failure (HF). Microvolt T-wave alternans (MTWA) testing identifies beat-to-beat fluctuations in T-wave morphology, which have been linked, mechanistically, to ventricular arrhythmias. Observational studies in highly selected populations have suggested that MTWA testing may identify individuals likely to benefit from a primary prevention implantable cardioverter-defibrillator. However, clinical studies in HF have been limited and produced conflicting results. The aims of this study were to determine the prevalence and incremental prognostic value of MTWA testing in an unselected cohort of patients recently hospitalised with HF.

Methods: Consecutive admissions with confirmed HF (typical clinical findings and BNP >100 pg/ml) were recruited in three hospitals from 1/12/06–12/01/09. Survivors were invited to attend 1 month post-discharge for MTWA testing and followed-up until death or censoring at 31/08/11.

Results: 648 of 1003 enrolled patients returned for MTWA testing (58% male, mean age 71 years). 49% were ineligible due to atrial fibrillation, pacemaker-dependency or inability to exercise. Of the 330 MTWA test results, 30% were positive, 24% negative and 46% indeterminate. Overall, 268 deaths occurred during a median follow-up of 3.1 [IQR1.9–3.9] years. 48% of ineligible patients died vs 35% of eligible patients ($p<0.001$, see Figure). 27%, 35% and 40% of patients with positive, negative and indeterminate tests, respectively, died ($p=0.12$). Even when analysed as non-negative (positive/indeterminate) vs negative, there was still no between-group difference in mortality ($p=0.95$). MTWA results categorised as positive, negative or indeterminate showed no incremental prognostic value in a multivariable mortality model, which included B-type natriuretic peptide (BNP). Paradoxically, when compared in a binary fashion with a non-negative result, a negative test was an independent predictor of death, as was ineligibility for MTWA testing.

Conclusion: MTWA testing was not widely applicable in typical patients with HF and failed to predict mortality. Established clinical variables for prognostication in HF, including BNP, identified the patients at greatest risk in this study. At present MTWA cannot be endorsed as a risk stratification tool in HF.

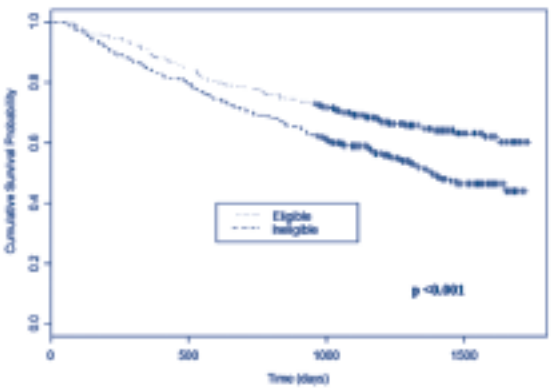

Figure. Survival curves for all-cause mortality stratified by eligibility for MTWA testing

*Presenting author

Young Investigators' Award

Does chronic kidney disease adversely impact on secondary prevention in the era of primary percutaneous coronary intervention (PPCI)?

D Zachariah,[1]* *R Brown,*[2] *P Callan,*[2] *P Kanagala,*[3] *R Hendra,*[3] *A Clark,*[2] *I Squire,*[3] *C Lang,*[4] *PR Kalra*[1]

[1]Portsmouth Hospitals NHS Trust; [2]University of Hull, Department of Academic Cardiology; [3]University Hospitals of Leicester NHS Trust; [4]Department of Cardiology Ninewells Hospital, Dundee

Purpose: Chronic kidney disease (CKD) is associated with development of chronic heart failure (CHF) or death post myocardial infarction (MI). Previous studies have shown that patients with CKD receive suboptimal secondary prevention following MI and have less frequently been considered for revascularisation. Reasons may include the perception that such patients are too high risk for procedures and/or unlikely to benefit from interventions.

Optimisation of drugs post MI is essential to minimise progression to CHF. The current standard treatment for ST elevation MI (STEMI) is primary percutaneous coronary intervention (PPCI), irrespective of renal function. We evaluated the impact of CKD on secondary prevention following PPCI in a contemporary unselected cohort.

Methods: Retrospective study of 1159 consecutive patients from 5 UK centres receiving PPCI for STEMI. The population was divided according to estimated glomerular filtration rate (eGFR, ml/min/1.73m^2): eGFR ≥60, eGFR 45–59 and eGFR <45. Beta-blocker, angiotensin-converting enzyme (ACE) inhibitor and statin use was evaluated at discharge and early follow-up (n=567). Drug dosages were compared between groups for beta-blockers (expressed as bisoprolol equivalent) and ACE inhibitors (ramipril equivalent).

Results: See Table. 18% had eGFR <60 ml/min/1.73 m^2. Declining renal function was associated with age, gender and lower haemoglobin. Overall, at discharge, in the eGFR <60 ml/min/1.73 m^2 cohort, 89.5% were on beta-blockers, 83.5% on ACE inhibitors and 96% on statins. By 6 weeks these were 86%, 77.5% and 93%, respectively. Advanced CKD (<45 ml/min/1.73 m^2) was associated with lower use of ACE inhibitors at both discharge and follow-up (including a reduction in dose at 6 weeks).

Conclusions: Compared to historic data secondary prevention is very good post PPCI irrespective of CKD stage. However, the use of ACE inhibitors remains lower than beta-blockers and statins for those with worst renal function. Whilst a small drop off in therapy is seen at early follow-up the overall impression is that secondary prevention is relatively well tolerated. Immediate PPCI, irrespective of renal function, may reduce previous bias resulting from concerns regarding worsening renal function and potential complications of coronary intervention. Further evaluations are warranted to see if this translates into reduced risk of CHF development.

Table 1. Data classified as per eGFR showing demographics as well as utilisation of secondary prevention medication at discharge from hospital and at 6 weeks post primary angioplasty.

Discharge						Follow up				
		eGFR ≥60	eGFR 45-59	eGFR <45	p-value		eGFR ≥60	eGFR 45-59	eGFR <45	p-value
N (%)	1167	962 (82)	138 (12)	67 (6)		567	464 (82)	74 (13)	29 (5)	
MALE %		77	61	51	**0.03**		78	58	45	**<0.001**
AGE in yrs (SD)		62 (12)	73 (10)	75 (12)	0.11		61 (13)	72 (9)	77 (11)	0.09
% ON BB		94	88	91	0.87		90	86	86	0.90
% ON ACE/ARB		95	91	76	**<0.001**		92	89	66	**0.02**
% ON STATIN		98	96	96	0.914		96	96	90	0.45
RAMIPRIL		3.8 (2.4)	4.0 (2.9)	4.0 (2.6)	**<0.001**		3.65 (2.32)	3.58 (2.14)	3.24 (2.08)	0.57
BISOPROLOL		3.4 (1.97)	2.91 (1.44)	3.55 (2.86)	0.3		3.43 (1.99)	3.13 (1.80)	3.75 (3.13)	**0.002**

Drug doses expressed as mean equivalent dose mg (SD).

*Presenting author

ABSTRACTS: SESSION 4

Hyde Park presentations

Telehealth – is it just another machine that goes bing!?

Kevin M Goode

Academic Cardiology, University of Hull

No abstract was required for this presentation.

The fatal cloak of congestion

Hugh F McIntyre

Conquest Hospital Hastings

No abstract was required for this presentation.

Heart transplantation should be banned

Andrew Clark

Castle Hill Hospital, Kingston upon Hull

No abstract was required for this presentation.

KISS (Keep It Simple Stupid) we're broke

Rob Howlett

Thaxted Practice, Essex

No abstract was required for this presentation.

ABSTRACTS: SESSION 5

No abstracts were required for this session.

What really causes arrhythmias in heart failure?

Christopher George

Wales Heart Research Institute, Cardiff University

Arrhythmias result from abnormalities in Na^+ and K^+ ion fluxes across the surface membrane of cardiac cells (cardiomyocytes). Many 'anti-arrhythmic' pharmacologies target the cell-surface Na^+ and K^+ ion channels involved, but this approach is at best only modestly effective.[1] There is now a growing appreciation that arrhythmogenic Na^+ and K^+ ion dysfunction at the surface membrane may ultimately be driven by events occurring inside the cell.[2,3] This opens up the possibilities of new modes of anti-arrhythmic therapies tailored towards intracellular drivers of arrhythmias. An emerging target for therapeutic modulation is the intracellular calcium release channel (also known as the ryanodine receptor or RyR2) that mediates massive calcium release from the sarcoplasmic reticulum (SR) to initiate muscle contraction.[4] This gargantuan protein acts as a sentinel to the SR Ca^{2+} store and, under normal scenarios, is tightly regulated via an exquisite sensitivity to its localised cellular environment.[5] Chronic cardiac disease, though, is associated with defective RyR2 regulation that gives rise to a pathogenic Ca^{2+} leak, a hallmark of heart failure at the cellular level. 'Fixing the leak' has become something of a mantra in the development of new anti-arrhythmic strategies.

This talk will cover the use of molecular, imaging and computational techniques to investigate normal and disease-linked RyR2-dependent Ca^{2+} signalling. I will describe our understanding of intra-RyR2 molecular interactions that help stabilise and maintain the structural integrity of the channel under normal circumstances. The progression of heart disease is associated with the weakening of these so-called interdomain interactions leading to 'leaky channels' and perturbed Ca^{2+} homeostasis.[6] The talk will discuss new methodologies for targeting interacting motifs within RyR2 to positively manipulate RyR2-dependent Ca^{2+} signals in cardiac cell networks. Data will be described that suggest the prospective utility of this approach for preventing/rescuing Ca^{2+} defects in heart disease.

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2. George CH, Barberini-Jammaers SR, Muller CT. Refocussing therapeutic strategies for cardiac arrhythmias: defining viable molecular targets to restore cardiac ion flux. *Expert Opin Ther Patents* 2008;18:1–19.
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4. Zalk R, Lehnart SE, Marks AR. Modulation of the ryanodine receptor and intracellular calcium. *Annu Rev Biochem* 2007;207:367–385.
5. George CH. Sarcoplasmic reticulum Ca^{2+} leak in heart failure: mere observation or functional relevance? *Cardiovasc Res* 2008;77:302–14.
6. Yano M, Yamamoto T, Ikeda Y *et al*. Mechanisms of disease: ryanodine receptor defects in heart failure and fatal arrhythmia. *Nat Clin Pract Cardiovasc Med* 2006;3:43–52.

New drugs (i.e. factor Xa inhibitors / dronedarone)

John Cleland

University of Hull

Atrial fibrillation (AF) is common in patients with heart failure and their onsets often coincide. More than 40% of patients admitted with heart failure may have new-onset, paroxysmal or chronic AF, whilst the prevalence of AF in patients with chronic heart failure is approximately 25%, although this varies with age and New York Heart Association class. The annual incidence of AF in patients with established heart failure is fairly modest at 4–6%.

New-onset AF complicating pre-existing heart failure indicates a poor prognosis. There is strong evidence that drugs that favourably influence the natural history of heart failure and reduce mortality also reduce the incidence of AF. This includes angiotensin-converting enzyme (ACE) inhibitors, beta blockers and aldosterone antagonists but not ivabradine or digoxin.

A large trial of rate versus rhythm control (with prescription of amiodarone in 7% vs 82%) in patients with heart failure, left ventricular systolic dysfunction (LVSD) and predominantly (~70%) persistent AF showed that attempted cardioversion and maintenance of sinus rhythm did not improve survival. The benefits of restoring sinus rhythm may have been neutralised by an adverse effect of amiodarone. Other trials suggested improved quality of life with maintenance of sinus rhythm. Trials of dronedarone in patients with heart failure suggested increased mortality. The safety of pharmacological conversion of AF with vernakalant is uncertain but dofetilide appears, on balance, safe and effective, but neither of these agents is likely to become available in the UK.

Death is a much more common outcome than stroke in patients with heart failure and AF. Trials of AF suggest that heart failure increases the risk of stroke and death although the latter is increased disproportionately. Compared to warfarin, newer agents might be associated with a lower risk of bleeding amongst patients with heart failure but no reduction in stroke or death.

Beta blockers alone may not provide adequate control of ventricular rate. Addition of digoxin leads to better 24 hour rate control. The optimal ventricular rate (at clinic) may be higher than for sinus rhythm with a suggestion that risk may climb if rate is dropped below 70 bpm. Interestingly, there is also evidence of a diminished effect of beta blockers in patients with heart failure due to LVSD if they are in AF.

Newer approaches to rhythm control include use of low-dose dronedarone and ranolazine (HARMONY trial) and vanoxerine. The use of ablation techniques and devices will be discussed in the next talks.

Ablation in CHF

Stephen Furniss

East Sussex Healthcare NHS Trust, Hastings

Atrial fibrillation (AF) is the commonest arrhythmia in the world and is particularly common in the context of heart failure. Traditionally, AF has been viewed as a consequence of heart failure, but increasingly it is realised that, in some patients, AF may be an important cause of their left ventricular (LV) dysfunction. Rate-related LV dysfunction is a recognised cause of reversible LV dysfunction in some patients with sustained atrial and ventricular tachycardia, and the possible relevance of this to the huge numbers of patients with AF and heart failure is being debated. Pulmonary vein isolation for symptom control in paroxysmal AF is now well established and is superior to drug therapy in maintaining sinus rhythm. Increasingly, the question is being asked whether left atrial ablation should be considered for patients with both heart failure and AF as a way of not only achieving rate control but also atrioventricular synchrony.

Does cardiac resynchronisation therapy work in atrial fibrillation?

Rakesh Sharma

Royal Brompton Hospital, London

Cardiac resynchronisation therapy (CRT) is an established treatment for selected patients with symptomatic left ventricular systolic impairment. Despite atrial fibrillation (AF) being a common finding in patients with advanced heart failure, there is a paucity of randomised controlled trial data regarding the use of CRT in this cohort.

It is known that AF can detrimentally influence the efficacy of CRT delivery. Whether such patients should routinely be offered an AF ablation or an atrioventricular nodal ablation strategy remains debatable.

This presentation will evaluate the evidence regarding the role of CRT in patients with AF, including a review of the latest clinical trials.

Further reading

Camm AJ, Lip GY, De Caterina R et al. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESC Guidelines for the management of atrial fibrillation. Developed with the special contribution of the European Heart Rhythm Association. *Eur Heart J* 2012;33:2719–47.

Holzmeister J, Leclercq C. Implantable cardioverter defibrillators and cardiac resynchronisation therapy. *Lancet* 2011;378:722–30.

McMurray JJ, Adamopoulos S, Anker SD et al. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012: the Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2012 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association (HFA) of the ESC. *Eur Heart J* 2012;33:1787–847.

Importance of heart rate in cardiovascular disease

Andrew Clark

Castle Hill Hospital, Kingston upon Hull

The notion that resting heart rate is related to longevity is popular. In many populations, there appears to be an almost linear relation between the two variables, and this relation extends to cover mammalian species too, suggesting that a life span is determined by a fixed number of potential heart beats. In cardiovascular disease states, the relationship holds also: in patients with chronic heart failure, there is apparently a relation between reduction in heart rate with therapy and improvement in prognosis.

However, it is important not to take correlation of variables as proof of cause: resting heart rate increases with the severity of illness and could thus simply be a marker of severity, not a determinant of outcome. Drugs that reduce heart rate, particular beta blockers, have effects other than simply modifying heart rate. However, the availability of newer agents that purely reduce heart rate with minimal other cardiovascular effects will allow the heart rate hypothesis to be investigated.

Beta blockers

Henry Dargie

University of Glasgow

Of all the mechanisms that govern the oxygen needs of the heart, by far the most dominant is the heart rate. Unsurprisingly, therefore, the injured heart benefits, in terms of energy requirements, from beating more slowly. Beta blockers achieve this by modulating the influence of the autonomic nervous system on the heart in two ways: mainly by antagonising the accelerating effect on the sinus node of increased sympathetic nervous activity which, thereby, increases the relative importance of the decelerating effect of the parasympathetic nervous activity mediated through the vagus nerve.

It should be stressed that the pharmacology of beta blockers extends well beyond simply slowing the heart down. In addition to increasing the force of myocardial contraction, myriad intracellular pathways are activated by the sympathetic nervous system causing cell death due both to necrosis and apoptosis leading to further permanent myocardial damage. To what extent beta blockers inhibit these pathways in human heart failure remains unclear, but the breadth and magnitude of their beneficial effects, which include reducing morbidity and mortality, atrial fibrillation which commonly precipitates acute heart failure, and protection from ventricular fibrillation and sudden cardiac death, suggest a multiplicity of mechanisms at play in the complex and sophisticated organisation of heart action.

Safety and efficacy are the criteria by which we judge the value of the medicines we promote and prescribe. For beta blockers we have very reassuring evidence, not only from more clinical trials than for any other medicine recommended for the treatment of heart failure, but also from an impressive portfolio of safety acquired over more than 20 years of clinical practice.

If there is an ‘Achilles Heel’ for beta blockers it is a perception that they are relatively poorly tolerated. This may be justifiable in, for example, proven asthma, but even there one must balance the unlikely precipitation of acute asthma by beta blockade with the loss of the survival and other quality-of-life benefits, including lower admission rates for acute heart failure, that they confer. Recent data from our national audits of heart failure show that non-asthma chronic obstructive pulmonary disease is among the most common reasons given for not prescribing beta blockers. A range of other putative side effects are quoted when justifying low prescribing rates to the extent that the national audit shows that rates of prescriptions of beta blockers consistently lag behind those of angiotensin-converting enzyme inhibitors/angiotensin receptor blockers. Yet, in large clinical trials of potential new heart failure medicines, there are very high rates of both agents. Not only is the rate of prescription of beta blockers sub-optimal, the doses reached are often lower than those used in clinical trials especially in older patients. Nevertheless, studies in clinical practice show that both can be optimal when management is by a multi-disciplinary team involving both cardiologist and heart failure specialist nurse. Perfection in the prescribing of beta blockers requires both patience and time. Failure to acknowledge this and to provide sufficient time prevents perfect prescribing while promoting poor practice and, almost certainly, is likely to prove to be a false economy. It bears emphasising that there is no other medicine in the entire cardiovascular pharmacopoeia with the proven track record of safety and efficacy of beta blockers.

Ivabradine

Suzanna Hardman

Whittington Hospital, London

This presentation will explore the role of ivabradine, a specific inhibitor of the I_f current in the sinoatrial node, designed to reduce heart rate alone, in the management of patients with chronic heart failure.

Further reading

Fox K, Ford I, Gabriel PG et al., on behalf of the BEAUTIFUL Investigators. Ivabradine for patients with stable coronary artery disease and left-ventricular systolic dysfunction (BEAUTIFUL): a randomised, double-blind, placebo-controlled trial. Kim Fox, Ian Ford, P Gabriel Steg, Michal Tendera, Roberto Ferrari, on behalf of the BEAUTIFUL Investigators. *Lancet* 2008;372:807–16.

National Institute for Health and Clinical Excellence. Chronic heart failure: management of chronic heart failure in adults in primary and secondary care. Chronic heart failure (CG109), 2010. Available at: www.nice.org.uk/CG108.

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Swedberg K, Komajda M, Böhm M et al., on behalf of the SHIFT Investigators. Ivabradine and outcomes in chronic heart failure (SHIFT): a randomised placebo-controlled study. *Lancet* 2010;376:875–85.

Devices & heart rate

Roy Gardner

Scottish National Advanced Heart Failure Service, Golden Jubilee National Hospital, Glasgow

There has been a renewed interest in heart rate in patients with heart failure. Over 50 years ago, it was proposed that all mammals have a finite number of heart beats, and that that number is consistent across the various species – from the mouse to the whale. More recently, it has been recognised that a raised heart rate confers an adverse prognosis in patients with heart failure. In this presentation, the role of devices in heart failure will be discussed – in particular, their influence on heart rate.

Medical perspective

Simon Williams

Wythenshawe Hospital, Manchester

Contemporary assessment and management of acute heart failure (including decompensation and cardiogenic shock) will be presented and discussed. New European Society of Cardiology guidance on assessment will be addressed, leading onto the monitoring of the condition then the objectives of medical treatment. Diuretic use, vasodilators, ionotropes (different types) and ongoing oral pharmacological agents will be presented. Data from the National Heart Failure Audit will be used to highlight the importance of seeing heart failure teams during admission and after discharge. Indications for referral to the local regional centre for mechanical support and transplantation will be also be introduced.

Further reading

Banner NR, Bonser RS, Clark A et al. UK guidelines for referral and assessment of adults for heart transplantation. *Heart* 2011;97:1520–7.

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National Institute for Cardiovascular Outcomes Research. National Heart Failure Audit annual report 2010/11. Available at: www.ucl.ac.uk/nicor/nicor/hfannualreport10-11.

Intensivist approach

Robyn Smith

Golden Jubilee National Hospital, Glasgow

The provision of intensive care for patients with advanced heart failure unresponsive to standard medical therapy will be discussed including consideration of:

- non-technical skills of the intensivist and decision making in the multi-disciplinary team
- model of care within the cardiac intensive care unit
- specific organ support.

Further reading

Gray A, Goodacre S, Newby DE et al. on behalf of the 3CPO Trialists. Noninvasive ventilation in acute cardiogenic pulmonary edema. *N Engl J Med* 2008;359:142–51.

Patel AK, Hollenberg SM. Cardiovascular failure and cardiogenic shock. *Semin Respir Crit Care Med* 2011;32:598–606.

Weng CL, Zhao YT, Liu QH et al. Meta-analysis: noninvasive ventilation in acute cardiogenic pulmonary edema. *Ann Intern Med* 2010;152:590–600.

Surgical approach (including ventricular assist devices)

Steve Tsui

Papworth Hospital NHS Foundation Trust, Cambridge

The abstract for this presentation was not submitted before going to press.

Patient with long-term VAD

Harry Prentice

Glasgow

No abstract was required for this presentation.

What to do with mitral regurgitation in congestive heart failure

Speakers: Alison Duncan (Royal Brompton Hospital, London), Alison Seed (Lancashire Cardiac Centre, Blackpool), Ben Bridgewater (University Hospital of South Manchester) and Jonathan Byrne (King's College Hospital, London)

Panel: Andrew Clark (Castle Hill Hospital, Kingston upon Hull) and Roy Gardner (Scottish National Advanced Heart Failure Service, Golden Jubilee National Hospital, Glasgow)

The management of functional mitral valvular regurgitation in the setting of CHF will be discussed and debated.

An index case will be presented by Alison Duncan and treatment options will be considered.

Alison Seed will present medical (and pacing) options and highlight the evidence and reasoning for this.

Ben Bridgewater will consider potential surgical treatments and whether they have a role in this case.

Jonathan Byrne will lead a discussion on whether intervention (mitral clip) is appropriate and present the evidence for this.

The panel will consider comments from the audience. An audience vote will be taken as to the consensus treatment option. Alison Duncan will conclude the session by telling us which treatment was given and the updating us on progress of the patient.

BIOGRAPHIES

Dr Syed Ahsan

I am a Cardiology SpR at the Heart Hospital, UCLH NHS trust. I have a particular interest in cardiac resynchronisation therapy for the treatment of patients with heart failure and completed my postgraduate research in this area. My other interests include general cardiology and cardiac electrophysiology.

Dr John Baxter

I am a Consultant Geriatrician at Sunderland Royal Hospital, with an interest in heart failure in older persons.

I am clinical lead for heart failure at Sunderland Royal Hospital.

I am a Councillor on the Board of the British Society for Heart Failure. I am a committee member of the British Geriatrics Society Cardiovascular Section. I am a clinical advisor to the National Council for Palliative Care.

Mr Ben Bridgewater

This biography was not submitted before going to press.

Dr Jonathan Byrne

Career biography: Consultant interventional Cardiologist at Kings College Hospital, London. Major interests include percutaneous coronary intervention and structural heart disease and, in particular, transcatheter treatment of aortic and mitral valve disease. 'Non-interventional' interests include transoesphageal echocardiography and CT coronary angiography. Completed undergraduate medical training at the University of Bristol and then undertook general professional training in London and the South-East. Specialty training and interventional training in cardiology on the South Thames rotation in London, and in British Columbia, Canada. Research interests include the molecular basis underlying left ventricular hypertrophy, with a PhD from the University of London in 2004, a period of research sponsored by the Wellcome Trust and the British Heart Foundation. Clinical research interests include trans-radial coronary intervention, primary angioplasty and applied physiology.

Professor Andrew Clark

Professor Andrew Clark was educated at Pembroke College, Cambridge, and trained in medicine at the Westminster Medical School, London. He trained in cardiology at Manchester Royal Infirmary, the National Heart and Lung Institute in London and the Western Infirmary in Glasgow. Whilst at the National Heart and Lung Institute, under the guidance of Philip Poole-Wilson and Andrew Coats, he developed an interest in exercise physiology, particularly in patients with heart failure.

He became a Senior Lecturer in cardiology at the University of Hull in 1999 and was promoted to Reader in 2004. He is responsible for running the echocardiography service in Hull, and plays an active role in the day-to-day provision of cardiology services to the population of Hull and the East Riding of Yorkshire. He became a professor in 2009.

He is a member of the Working Groups for Heart Failure and Cardiac Rehabilitation and Exercise Physiology in the European Society of Cardiology. He is a founder member of the British Society for Heart Failure, and became Chair-Elect in the 2011 elections.

Professor John Cleland

Professor John Cleland qualified in medicine in 1977 at the University of Glasgow. After a period of postgraduate training and an introduction to research he was appointed from 1986 to 1994 first as a Senior Registrar and subsequently as Senior Lecturer in Cardiology and Honorary Consultant Cardiologist at St Mary's Hospital, Paddington, and the Hammersmith Hospital, London. In 1994 Professor Cleland was awarded a Senior Research Fellowship by the British Heart Foundation to transfer to the Medical Research Council's Clinical Research Initiative in Heart Failure. Professor Cleland was appointed to the Foundation Chair of Cardiology at the University of Hull in 1999.

Professor Cleland's main field of interest is in heart failure, extending from its epidemiology, detection and prevention, through the development and implementation of guidelines for the application of current knowledge, to large randomised trials to study new (and old) treatments for heart failure. Particular current interests include the role of myocardial hibernation contributing to heart failure and its treatment (including beta blockers and revascularisation), 'diastolic' heart failure, vascular dysfunction, the potential deleterious effect of aspirin in heart failure, ventricular resynchronisation, telemonitoring, implantable haemodynamic monitoring devices, co-morbidities including diabetes, anaemia, atrial fibrillation and renal dysfunction, and new interventions for acute decompensated heart failure. Active programmes for the assessment of heart failure and its optimal management using cardiac impedance, magnetic resonance, computer tomography and advanced electrophysiology are also in place.

Professor Cleland heads The Academic Unit of Cardiology that includes a Chair in Clinical Cardiology, two Senior Lecturers and a team of basic and clinical scientists, technicians and research nurses dedicated to the above research programme.

BIOGRAPHIES

Mr Michael Connolly

Michael Connolly is a Macmillan Consultant Nurse in Supportive and Palliative Care at the University Hospital of South Manchester NHS Foundation Trust (UHSM) and is a National Clinical Lead for Supportive and Palliative Care with NHS Improvement. Having worked in the fields of HIV/AIDS in London in the late 1980s, and then in hospice care, he began working in hospital palliative care in 1993.

For many years he extended his clinical practice beyond the care of people with cancer. This has led to research and educational opportunities, and an influence on national policy. He was an elected member of the National Council for Palliative Care for 7 years. He contributed to the national End of Life Care Strategy (2008) and is a co-author of '*End of Life Care in Heart Failure: a Framework for Implementation*' (2010).

He developed a communication skills workshop that uses the mnemonic SAGE & THYME to guide practitioners through active listening (SAGE) and simple patient-centred problem solving (THYME). SAGE & THYME is taught under licence across the UK and is the focus of research and dissemination projects.

Dr Peter Cowburn

Dr Peter Cowburn is a Consultant Cardiologist with a specialist interest in heart failure at Southampton General Hospital. His MD thesis was undertaken in Glasgow studying the haemodynamic effects of endothelin and endothelin receptor antagonists in patients with chronic heart failure (CHF). Following SpR training in the Wessex region, he completed an 18-month heart failure/device fellowship in Toronto, Canada, where he trained in cardiac resynchronisation therapy (CRT). He reported the first case series of inotrope-supported CRT and has an interest in the haemodynamic and renal effects of CRT. He was Deputy Chair of the British Society for Heart Failure (BSH) in 2007–9, having served as a Councillor to the Board in 2005–7. He represented the BSH as a clinical expert for the National Institute for Health and Clinical Excellence CRT appraisal process. At Southampton General he has helped establish a nurse-led inpatient heart failure service, which has led to a dramatic reduction in inpatient mortality. He has also helped set up an inpatient ultrafiltration programme, the first in the UK. He was a member of the working group who recently published guidelines for the referral and assessment of adults for cardiac transplantation (*Heart* 2011).

Professor Henry Dargie

Most recently the Director of the Scottish Advanced Heart Failure Service at the Golden Jubilee National Hospital in Clydebank, Henry Dargie is now an Honorary Consultant Cardiologist at the Western Infirmary in Glasgow where he has spent most of his career since his consultant appointment in 1980.

A graduate of Glasgow University, he trained in general medicine and nephrology at Glasgow Royal Infirmary and in clinical pharmacology and cardiology at the Royal Postgraduate Medical School and Hammersmith Hospital in London.

He has had a longstanding interest in several aspects of heart failure, including epidemiology, investigation and treatment, and was the Principal Investigator for several large clinical trials including the CIBIS II and CAPRICORN trials of bisoprolol and carvedilol in heart failure.

Other previous appointments include membership of the Commission of Human Medicines and Chairman of the External Advisory Group on Medicines for Cardiovascular and Renal disease and Diabetes of the Medicines and Healthcare Products Regulatory Agency of the UK and Chairman of the Specialist Advisory Group on Cardiovascular Medicines for the Committee on Human Medicinal Products of the European Medicines Agency.

His most recent major interest has been in the national audits of heart failure in the UK, and in the raising of the standard of management of heart failure to that afforded patients with other major cardiovascular conditions such as heart attacks where specialist treatments have greatly improved outcomes.

Dr Alison Duncan

Dr Alison Duncan qualified from St. Bartholomew's Hospital, London, in 1995. After general medical training, she joined the Royal Brompton Hospital, London, in 1997, where she completed general cardiology training. In 1999, she undertook a doctorate jointly between the Royal Brompton and Imperial College, London. Her PhD, entitled 'Stress Echocardiography in Heart Failure', studied cardiac physiology at rest and during stress in patients with heart failure. She has published over 30 original papers, presented over 50 abstracts at national and international level, and has contributed to book chapters for national and international publishers. She has 15 years' experience in transthoracic, transoesophageal and stress echocardiography, and is fully accredited in transthoracic echocardiography and transoesophageal echocardiography with the British and European Societies of Echocardiography. She was Clinical Tutor for the MSc in Cardiology at Imperial College from 2004 to 2006, was Clinical Lead for the Department of Echocardiography at the Royal Brompton Hospital between 2006 and 2010, and is currently Lead for Education for the British Society of Echo and UK-Resuscitation Council approved FEEL-UK© (Focused Echocardiography in Emergency Life Support) courses. She continues to actively collaborate with ongoing research, both in heart failure (studying the effects of cardiac resynchronisation therapy in the peri-operative period and on ventricular remodelling), and most recently with surgical colleagues (in transcatheter valve programmes including transcatheter aortic-valve implantation and MitraClip).

Dr Stephen Furniss

Dr Stephen Furniss is President of Heart Rhythm UK and Consultant Cardiologist at East Sussex Healthcare NHS Trust. He trained in cardiology, and in catheter ablation in particular, in Newcastle, and was a consultant there for 15 years. He moved South to explore a new district hospital model for catheter ablation in the UK. He performs complex ablation including ventricular tachycardia and atrial fibrillation ablation, and has a training role in several centres. He continues to publish and lecture widely on ablation.

BIOGRAPHIES

Dr Roy Gardner

Dr Roy Gardner trained in cardiology in Glasgow and Edinburgh. He took up a position as a Consultant Cardiologist with the Scottish National Advanced Heart Failure Service in 2008. He has a specialist interest in advanced heart failure (including cardiac transplantation and mechanical circulatory support) and complex devices.

Dr Gardner has an active research profile in biomarkers and device therapy. He is also an Observer on the Board of the British Society for Heart Failure, and a member of the European Society of Cardiology Curriculum Committee for Advanced Heart Failure. He is an author/editor of the *Oxford Specialist Handbook of Heart Failure* and *Oxford Textbook of Heart Failure*.

Dr Christopher George

Chris has been unable to leave Cardiff since 1992. First as an undergraduate studying biochemistry and then as a PhD student looking at Ca^{2+} micro-environments in cell-to-cell communication, he became obsessed by the patterning of cellular Ca^{2+} signals. After a brief post-doc, and keen to take responsibility for his own mistakes, he got waylaid into a British Heart Foundation Fellowship that moved his work into the cardiac sphere to explore the link between abnormal Ca^{2+} patterns and genetic arrhythmias. Twelve years (and three fellowships) later, his group is now investigating broader questions relating to cardiac (dys)function from the perspectives of cellular noise and signalling–network architecture.

Dr Kevin Goode

Dr Kevin Goode has worked in the field of telehealth applied to heart failure for almost 7 years, working closely with industry (Philips, Tunstall). He was instrumental in Hull's first Telehealth Service pilot and continues to be involved in projects under the FP7 HeartCycle programme. An engineer by background, with strong computational and statistical skills, he has led and contributed to research into predicting decompensated heart failure using telehealth data. Having worked in both the health-technology industry and within the hospital environment, he has acquired strong clinical insights that help to bridge the gap between technologists and clinicians. As well as his work in telehealth he has also led research into computer algorithms for intelligent clinical referral, diagnosis and prognosis in heart failure; including the diagnostic and prognostic role of novel biomarkers and the epidemiology of disease in heart failure (diabetes, anaemia and renal dysfunction). He has acted as an analytical consultant for a number of medical device and pharmaceutical companies helping to drive decision making in future trial designs.

Dr Suzanna Hardman

Dr Suzanna Hardman is a Consultant Cardiologist with an Interest in Community Cardiology at the Whittington Health, London, an ICO, where she leads the Heart Failure Services and related research, and is an Honorary Senior Lecturer at University College London. She has worked closely with the community for many years to ensure consistent high-quality care for patients with heart failure, irrespective of where they present.

A lack of evidence to determine clinical practice has been the stimulus for her heart failure research, which has included the role of natriuretic peptides in diagnosis, and different models of care for heart failure patients – demonstrating the impact of early diagnosis, optimal inpatient care and self management for some, in effecting lower mortality and re-admission rates. The impact of interval on left ventricular function, using atrial fibrillation as a model, was the subject of her PhD and remains an area of interest.

She is very involved with the emerging Advanced Training in Heart Failure and advises the pan London Specialist Training Committee (cardiology) and Royal Society of Medicine Cardiology section on heart failure-related issues; she also continues to work with the British Society for Heart Failure (BSH) and British Cardiovascular Society on a wide range of issues including revalidation and work-force planning. She was a member of the National Institute for Health and Clinical Excellence Guideline Development Group for the partial update of Chronic Heart Failure Guideline (2010) and the related Quality Standards (2011). She is a member of the recently convened Guideline Development Group for Acute Failure. The Heart Failure Audit is an initiative which Dr Hardman is heavily committed to, currently providing support through a number of the National Audit committees, and is committed to using this data to drive change in the delivery of higher quality heart failure care, and heart failure research.

Dr Hardman has represented the BSH in various contexts in the UK and Europe. A longstanding member of the BSH, she has been elected Councillor, Deputy Chair and Treasurer. She is currently Chair of the Society.

Dr Karen J Hogg

Dr Karen J Hogg gained degrees in science and medicine from the University of Glasgow in 1994 and 1999, respectively. In 2002, she undertook a British Heart Foundation Junior Fellowship and went on to achieve a postgraduate Doctor of Medicine degree in 2007, also conferred by the University of Glasgow, for research into heart failure with preserved systolic function.
Her subsequent specialist clinical training was based in Glasgow and, in 2010, she took up the post of consultant cardiologist with a specialist interest in heart failure, complex device therapy and palliative care based at Glasgow Royal Infirmary and the Golden Jubilee National Hospital. In this unique post she is the clinical lead for heart failure in North East Glasgow and the cardiology clinical lead for the Caring Together programme (joint funded by the British Heart Foundation, Marie Curie Cancer Care and Greater Glasgow and Clyde).

Dr Rob Howlett

GPSI in cardiology – 2 ½ days per week.

BSE accredited in transthoracic echocardiography.

Work closely with local heart failure teams; also work in secondary care trust and provide own community based cardiology and echo services. Particular interest in heart failure.

BIOGRAPHIES

Dr Colette Jackson

Colette Jackson trained in medicine at the University of Glasgow, graduating in 2002. She is currently a specialty registrar in cardiology on the West of Scotland rotation, working at the Western Infirmary in Glasgow and the Golden Jubilee National Hospital in Clydebank. She has a particular interest in heart failure and attained a PhD from the University of Glasgow in 2011 entitled 'Microvolt T-wave alternans in heart failure: a study of prevalence and incremental prognostic value'.

Dr Paul Kalra

Dr Paul Kalra is a Consultant Cardiologist at Portsmouth Hospitals NHS Trust with subspecialty interest in heart failure, including the implantation of implantable cardioverter defibrillator and cardiac resynchronisation therapy devices. He is current Treasurer of the British Society for Heart Failure (BSH). He is interested in medical education and research and has in excess of 70 peer-reviewed publications. He is UK Chief Investigator for a worldwide epidemiological study in patients with coronary artery disease (CLARIFY), which has recruited almost 35,000 subjects (nearly 2500 in the UK). He also has a clinical and academic interest in patients with cardio-renal disease. He was co-organiser of the UK's first national Cardio-Renal Conference in 2006; this has now developed into a very successful annual meeting (now in its 7th year) with around 150 delegates.

His previous role within the BSH was as Councillor (2009–11) during which time he was programme director for the National Trainees meeting for Heart Failure 2010 and (co) 2011, and co-programme director for the Annual Scientific Sessions in November 2010. He has ongoing responsibilities for the British Cardiovascular Society (member of the Knowledge Based Assessment Board & Standard Setting Group) and the European Society of Cardiology (member of the MCQ question setting and review group).

Mrs Annie MacCallum

Annie is the Professional Lead for Specialist Nursing Services at NHS Gloucestershire Care Services. She gained her cardiology experience in Edinburgh, Bristol and Gloucester, and has 10 years of coronary heart disease practice nurse experience. The experience gained in the acute hospital management of heart failure and her primary care experiences helped to inform her understanding of the unmet needs of heart failure patients.

Annie developed the proposal for a countywide Heart Failure Service in Gloucestershire. Launched in January 2004, and with the help of a successful bid to the British Heart Foundation, the Service offers community echo, GPSI clinics and eight Heart Failure Specialist Nurses based in primary care, but in close liaison with acute hospitals and cardiologists. Annie joined the Heart Failure Policy Group for the National Council for Palliative Care in 2009 and contributed to the development of the 2010 audit on, and subsequent publication of, the engagement of Heart Failure Specialist Nurses with palliative care services.

Keen to support specialist nurse education, Annie has helped launch and develop the programmes for the annual British Society for Heart Failure (BSH) Heart Failure Nurse Study Days. She is an Observer to the Board of the BSH and an Affiliate Board Member of the British Association for Cardiac Prevention and Rehabilitation.

Mrs Jayne Masters

Jayne Masters is the Nursing Lead for the Heart Failure Service at University Hospital Southampton NHS Trust.

Jayne qualified from the University Hospital of Wales in 1986 and went on to gain nursing experience in several areas before specialising in heart failure.

Jayne was appointed as a British Heart Foundation community heart failure nurse in the New Forest in 2005, and went on to develop a successful service that went on to be fully funded by the Primary Care Trust. In 2008, Jayne was appointed to lead a new inpatient heart failure service at Southampton General Hospital. The service, which sees heart failure patients in all areas of the hospital, has been instrumental in improving outcomes for patients admitted to the Trust with heart failure, in particular mortality.

Jayne was appointed as an Observer to the Board of the British Society for Heart failure in 2011 and is also a member of the National Institute for Health and Clinical Excellence (NICE) Acute Heart Failure Clinical Guideline Group. She is due to complete her MSc in Cardiology at Brighton University next year.

BIOGRAPHIES

Professor Theresa McDonagh

Theresa McDonagh is a Consultant Cardiologist and Clinical Lead for Heart Failure at King's College Hospital, London.

After completing her medical education at the University of Edinburgh Medical School in 1987, Professor McDonagh was appointed Research Fellow in Cardiology at the Western Infirmary, Glasgow, in 1991, and the Lecturer at the CRI in Heart Failure at the University of Glasgow (Honorary Senior Registrar), in 1994. In 1999, she was appointed a Senior Lecturer (Honorary Consultant Cardiologist) at the University of Glasgow and Glasgow Royal Infirmary, running the Heart Failure Service, and the cardiologist involved in the Heart Transplant Programme. She then spent 7 years as a Consultant Cardiologist with an Interest in Heart Failure at the Royal Brompton Hospital, London, before taking on her current role.

Her research interests are in clinical heart failure, in particular the epidemiology of heart failure and left ventricular dysfunction, and the role of biomarkers in both the diagnosis and prognosis of heart failure, and in the delivery of heart failure care.

She has been on the Board of the British Society for Heart Failure (BSH) for over 10 years in various capacities, and is now Past-Chair of the Society. She is also the Clinical Lead for the National Heart Failure Audit.

Dr Hugh F McIntyre

Educated at Oxford University and Westminster Medical School. Consultant Physician to the Conquest Hospital, Hastings, and Senior Lecturer to the University of Brighton.

Member of National Institute for Health and Clinical Excellence (NICE) Heart Failure Guideline Group and of Commissioning Group and Chair of the NICE Quality Standards Group and of Commissioning Outcome Framework Group. Acute Lead for Heart Failure (South East – Enhancing Quality Programme) and for Elderly/Frailty Group for NHS Sussex. Recently appointed Chair of NICE Quality Standards Advisory Committee.

Specialist interests include heart failure, quality improvement in healthcare.

Over 100 publications including book chapters and book (*Heart Failure in the Older Patient)*, Course Director for MSc Cardiology at the University of Brighton. Reviewer and editorial board member of UK and European Journals. Research programme investigator and DSMB Board member.

Dr Jim Moore

I studied medicine as an undergraduate in Edinburgh before moving to Gloucestershire to work as a GP principal. Throughout my medical career I have maintained an interest in cardiology and cardiovascular disease, particularly those aspects that are relevant to primary care. I was closely involved in the development of the primary care-based Gloucestershire Heart Failure service, where I continue to work as a GPwSI. I represent primary care in the cardiovascular arena, both at local and regional level. I am presently a Councillor on the Board of the British Society for Heart Failure.

Dr Jayan Parameshwar

Dr Jayan Parameshwar is a Consultant Cardiologist and has been associated with the Advanced Heart Failure programme at Papworth Hospital for over 20 years. He is involved in the assessment of patients for heart transplantation and mechanical circulatory support, and in the care of these patients after surgery. He studied medicine at Pondicherry, India, and completed an internal medicine residency at the All India Institute of Medical Sciences, New Delhi.

He did his cardiology training at Hillingdon Hospital, and at the National Heart and Royal Brompton Hospitals in London. His interest in heart failure was sparked by Dr George Sutton and Professor Philip Poole-Wilson. He has served on the Board of Directors of the International Society for Heart and Lung Transplantation and is Associate Editor of the *Journal of Heart and Lung Transplantation*.

Dr Mark Petrie

Mark Petrie is a Consultant Cardiologist in Glasgow. He sees patients in two weekly heart failure clinics and manages patients with severe, acute heart failure in a heart failure unit. He also has an interest in cardiac and coronary intervention.

Dr Marc Alan Pfeffer

Dr Marc Pfeffer is currently the Dzau Professor of Medicine at Harvard Medical School, Boston, MA, USA. He is Senior Physician in the Cardiovascular Division at the Brigham and Women's Hospital in Boston, and Director of the Cardiovascular Grand Rounds Program. He also serves as Medical Director of the Partners Research and Education Program (PREP).

A noted researcher, Dr Pfeffer, along with his late wife, Dr Janice Pfeffer, and Eugene Braunwald MD, is credited with introducing the concept that angiotensin-converting enzyme inhibitors (ACEIs) could attenuate ventricular remodelling following myocardial infarction and that this use would result in a prolongation of survival and other clinical benefits. Since this initial discovery, he has had a principal role in several practice-changing clinical trials, such as SAVE, CARE, HEART, VALIANT, CHARM, PEACE, ARISE and TREAT. He is currently a leading investigator in TOPCAT, ALTITUDE and ELIXA. In addition to his role as researcher, Dr Pfeffer plays an active role in the academic development of trainees and junior faculty collaborating in trials. As the leader of PREP, he has developed networks of community-based physicians who enjoy making meaningful contributions to clinical investigation.

Dr Pfeffer is Senior Associate Editor of *Circulation* and is a member of the Editorial Board of several other prominent journals.

An internationally recognised expert in the field of cardiology, he was, in 2006, recognised by Science Watch as having the most 'Hot Papers' (highly cited) in all of clinical medicine. He is the recipient of the William Harvey Award of the American Society of Hypertension, the Okamoto Award from Japan's Vascular Disease Research Foundation and the Clinical Research Prize of the American Heart Association.

Dr Pfeffer is an Honorary Fellow of the Royal College of Physicians and Surgeons of Glasgow.

BIOGRAPHIES

Harry Prentice

Kenneth Harry Belcher Prentice, known to all as Harry, is from a small village near Lanark. Middle son; born October 1994; attends Lanark Grammar. It is now known that Harry was born with a defective gene; he became ill in April 2011 at age 16 and until then lived a normal active life.

A month prior to falling ill Harry qualified as a swim teacher and was hoping to take on a summer job as teacher and lifeguard as he studied for his higher grades.

Serving as a sergeant in the Air Training Corps (ATC), partaking in numerous activities such as gliding, flying and shooting competitively for his West of Scotland Wing. From a young age he swam competitively at club level with Fauldhouse Penguins, carrying this on to his days in the ATC and until severe heart failure was diagnosed.

Harry plays piano and trombone as a member of the Lanarkshire Orchestral Society, competing in the British championship and gaining silver at Warwick.

On diagnosis Harry was transferred to the Golden Jubilee Hospital at Clydebank, and having been placed on the urgent transplant list for 6 weeks assisted by balloon pump, it became necessary for a LVAD implant.

The BSH would like to thank Harry for providing a biography. This was not a requirement of the BSH.

Professor Sir Mike Richards

Professor Richards was appointed as the first National Cancer Director in October 1999. In 2000, he led the development of the NHS Cancer Plan. He also led the development of the Cancer Reform Strategy, the first ever End of Life Care Strategy. More recently he led the development of Improving Outcomes: A Strategy for Cancer (January 2011), the first of a number of outcome strategy documents setting out the ways in which the coalition government will meet its aim of delivering healthcare outcomes as good as any in the world.

In July 2012 Mike was appointed as Domain 1 Director in the NHS Commissioning Board Authority, with responsibility for reducing premature mortality across all conditions. In this role he is overseeing the development of a cardiovascular outcomes strategy and a liver strategy.

Prior to his appointment to the Department of Health, Mike was a Consultant Medical Oncologist at Guy's Hospital, London, specialising in breast cancer, and Sainsbury Professor of Palliative Medicine at St. Thomas' Hospital, London. He was also Clinical Director of Cancer Services at Guy's and St. Thomas'.

Mike was closely involved in the establishment of the National Cancer Research Institute (NCRI) in 2001 and has been a board member since its foundation. Between April 2006 and March 2008 he was Chairman of the NCRI Board.

Mike was appointed a CBE in 2001 and was awarded a knighthood in the 2010 New Year Honours.

Dr Nigel Rowell

I have been a GP and clinical assistant in cardiology for 24 years and involved with commissioning for 16 years. Six years ago I was invited to join the Board of the British Society for Heart Failure as an observer and have since been back as a council member and am currently an Observer once more. From my connection with the society, invitations flowed to give talks mainly around heart failure in primary care and I became involved with GPSI forum in cardiology. Last year I applied for the job of national clinical adviser in heart failure in primary care to NHS Improvement and was delighted to be offered the post. Though many of the NHS Improvement projects were underway it seems I joined the team at just the right time to help with the changing political view on commissioning.

Dr Alison Seed

Dr Alison Seed is a Consultant in heart failure and device therapy and Honorary Lecturer at the Lancashire Cardiac Centre in Blackpool. She was appointed in 2009 following completion of cardiology and subspeciality training in the North West of England. This followed work as a Research Fellow with Professor John McMurray – the study of neurohormonal modulation in heart failure – resulting in the award of an MD from Glasgow University. She graduated in Medicine from Edinburgh University in 1996.

As lead of a specialist service in a tertiary centre, the assessment for, and provision of, advanced treatments in heart failure are a key part of her practice. However, she also has an exhausting enthusiasm for team work across health sector boundaries, whether they be financial or professional, based on a belief that patients and those managing them at the most complex times in their condition rely heavily on those who manage so much more of the patient's journey. Improving patient pathways, communication between professionals and education is key to the comprehensive, cross sector, heart failure service that she continues to develop in the North West.

Dr Rakesh Sharma

Dr Rakesh Sharma, Consultant Cardiologist, is the clinical lead for heart failure at the Royal Brompton Hospital, London, with a specialist interest in advanced pacing (including implantation of biventricular pacemakers/defibrillators).

Dr Steve Shaw

I'm a consultant cardiologist at Wythenshawe Hospital in Manchester, with a subspecialty interest in advanced heart failure, mechanical circulatory support and cardiac transplantation.

BIOGRAPHIES

Dr Robyn Smith

Dr Robyn Smith is a Consultant Cardiothoracic Anaesthetist and Intensivist at the Golden Jubilee National Hospital, Glasgow. The Cardiac Intensive Care Unit at the Golden Jubilee supports the Scottish National Advanced Heart Failure Unit which includes the selection and care of patients with advanced heart failure unresponsive to standard medical therapy. The unit supports the provision of mechanical circulatory support and cardiac transplantation.

Professor Iain Squire

Professor Iain Squire qualified from Glasgow University in 1987. He trained first at Glasgow, where he held the position of Lecturer, and then at the University of Leicester, where he was initially Lecturer then Senior Lecturer in Medicine & Therapeutics. He was awarded a personal Chair in April 2009, and is also Honorary Consultant Physician at the University Hospitals of Leicester NHS Trust.

Professor Squire has responsibility for the 19-bed coronary care unit at Glenfield Hospital, Leicester, and is one of two consultants running the outpatient heart failure service there. He is Vice Chair of the National Institute for Health and Clinical Excellence Technology Appraisals Committee A.

Professor Squire has held the positions of Councillor and Treasurer on the Board of the British Society for Heart Failure, and is currently Deputy Chair. He is UK coordinator for the joint European Society of Cardiology / European Heart Rhythm Association CRT Registry.

His research interests include: natriuretic peptides and other cardiac neuropeptides; the epidemiology of heart failure; prognostic markers in heart failure and acute coronary syndromes; and acute coronary syndromes. Professor Squire has authored over 120 papers in peer reviewed journals.

Dr Jackie Taylor

After studying medicine at Glasgow University, Jackie Taylor trained and accredited in general medicine and geriatric medicine, developing her interest in heart failure at this formative time of her career. She became Lecturer in Geriatric Medicine, is a Consultant in Medicine for the Elderly at Glasgow Royal Infirmary and Clinical Director for the specialty for North Glasgow.

A past member of the Board of the British Society for Heart Failure, Dr Taylor also chairs the Heart Failure Sub-Group of the Cardiac Managed Clinical Network for Greater Glasgow and Clyde, and is responsible for developing and delivering the Heart Failure Strategy. She is Honorary Secretary of the Royal College of Physicians and Surgeons of Glasgow.

From a clinical perspective, Dr Taylor's main interest is the development of comprehensive multiprofessional services for heart failure patients and, in particular, improving the organisation of care. She has developed a heart failure clinic and day hospital programme tailored to the needs of older patients.

Mr Steven Tsui

Steven Tsui is a Consultant Cardiothoracic Surgeon at Papworth Hospital, Cambridge, where he is the Director of the Transplant & Mechanical Circulatory Support programme. His clinical interests focus on surgical device therapies for end-stage heart and lung failure, including extracorporeal membrane oxygenation (ECMO), ventricular assist device (VAD) and total artificial heart (TAH). Other aspects of his clinical practice include pulmonary endarterectomy (PTE) for chronic thromboembolic pulmonary hypertension, and transcatheter aortic valve interventions (TAVI). His research interests include donor optimisation, *ex-vivo* donor organ perfusion and VADs. He is also the Regional Training Programme Director and Chairman of the Specialty Training Committee in Cardiothoracic Surgery at East of England Deanery and Deputy Chair of the Cardiothoracic Advisory Group at NHS Blood & Transplant.

Dr Robin Weir

Dr Robin Weir is a non-interventional consultant cardiologist at Hairmyres Hospital within NHS Lanarkshire, Scotland. His subspecialty interests are heart failure and non-invasive imaging. He has participated in a number of post-myocardial infarction (MI) and chronic heart failure trials, and has completed an MD in post-MI left ventricular remodelling and the use of aldosterone antagonists in this setting.

Dr Simon Williams

Dr Williams is the clinical lead for heart failure at the Wythenshawe Hospital, Manchester. He specialises in cardiac transplant and ventricular assist device assessment, and also in pacing therapy for heart failure. Dr Williams is also an honorary senior lecturer at the University of Manchester, where his research group is currently studying the immune system in heart failure and following cardiac transplantation.

He is currently a Councillor on the British Society for Heart Failure Board 2011–13.

Dr Donah Zachariah

I graduated from Trivandrum Medical College, India, in 2002 and my subsequent training has been in the UK. I am a year 4 Cardiology SpR in the Wessex deanery rotation and am currently spending two years out of programme doing research in heart failure and devices at Portsmouth Hospitals NHS Trust with Dr Paul Kalra as my supervisor. Area of interest is cardio renal syndrome.

BIOGRAPHIES

Professor Faiez Zannad

Professor Faiez Zannad obtained his MD as a cardiology specialist in 1979 from the University of Lorraine, France. In 1981, he joined the Clinical Pharmacology Medical Research Unit of Oxford University, UK, as a Research Fellow and, in 1986, he obtained his PhD in cardiovascular clinical pharmacology from the University of Lyon, France. He is currently Professor of Therapeutics at the Medical Faculty of the Henri Poincaré University of Nancy, Head of the Division of Heart Failure, Hypertension and Preventive Cardiology / Department of Cardiovascular Disease of the Academic Hospital of Nancy, and Director of the Clinical Investigation Center, Inserm-CHU, Nancy, France.

Professor Zannad is Treasurer of the European Society of Cardiology, Heart Failure Association, Chairman of the ICALOR, Lorraine Region Heart Failure disease management program, Coordinator of the French Network of Cardiovascular Clinical Investigation Centers and Co-chairman of the Academic Research Organization (ARO) European Drug Development Hub (EDDH), Nancy, France.

Professor Zannad has been and continues to be involved in a number of major cardiovascular clinical trials, as a Principal Investigator and/or as a chair or member of Steering Committees, Critical Event Committees and Data Safety and Monitoring Boards. In particular, he has made a significant contribution to advances in the treatment of heart failure through participation in major clinical trials of aldosterone antagonists (EMPHASIS-HF, EPHESUS, RALES), beta-blockers (CIBIS, CAPRICORN), angiotensin II receptor blockers (HEAAL, VALIANT) and vasopressin antagonists (EVEREST) that have led to the approval of new drugs in this area and to changes in international guidelines.

His main areas of interest include heart failure, aldosterone, biomarkers, clinical trials and hypertension.

He has contributed more than 300 scientific publications and published several books on cardiovascular pharmacotherapy and on heart failure.

EXHIBITORS AND CONTRIBUTORS

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BG MEDICINE

BG Medicine is a life sciences company focused on the discovery, development and commercialisation of novel diagnostic tests based on biomarkers for high-value market opportunities in healthcare that we identify. Our lead product, the Galectin-3™ test for heart failure, received FDA clearance in November 2010.

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BRITISH HEART FOUNDATION (BHF)

As the nation's heart charity, our mission is to play a leading role in the fight against disease of the heart and circulation, so that it is no longer a major cause of disability and premature death.

We focus on:

- Investing in pioneering research into the prevention, diagnosis and treatment of the heart, which has already saved thousands of lives and improved the lives of thousands more. We currently fund over 1,000 research projects investigating every aspect of heart disease - from causes and safer drugs to improving surgical techniques.
- Supporting and caring for heart patients. We fund and support BHF Healthcare Practitioners who work with heart patients and families with all types of heart conditions in both primary and secondary care. We provide diagnostic services, fund hospital equipment, emergency defibrillators and first-aiders across the UK.
- Providing vital information to help people reduce their own risk of dying prematurely from a heart or circulatory related illness. We produce publications, DVDs and other materials for health professionals and the public including children. We inform people about how to improve the health of their heart through public information campaigns, advertising and the media.

Some vital facts and figures:

- There are over 800 BHF Healthcare Practitioners caring for patients across the UK.
- Over 3,000 Heartstart UK schemes teach people what to do in an emergency. More than 3 million people have been trained by Heartstart UK in schools and the community.
- Last year BHF invested over £100 million in research to keep the nation's hearts healthy.

Contact information:
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EXHIBITORS AND CONTRIBUTORS

BRITISH SOCIETY FOR HEART FAILURE (BSH)

The BSH is a multi-disciplinary society and membership is open to all healthcare professionals involved with the diagnosis, management or science of heart failure.

The aims of the BSH are as follows:

- to increase knowledge and promote research about the diagnosis, causes, management and consequences of heart failure amongst healthcare professionals, with the intention of delaying or preventing the onset of heart failure and improving care for patients with heart failure
- to provide expert advice to healthcare professionals, patient or government organisations, including the National Health Service, when appropriate and as requested.

At present the BSH has over 850 members and nine Friends. The BSH Board consists of the following members:
Dr Suzanna Hardman (Chair), Professor Theresa McDonagh (Past Chair), Professor Iain Squire (Deputy Chair), Professor Andrew Clark (Chair-Elect), Dr Paul Kalra (Treasurer), Dr John Baxter, Dr Jim Moore and Dr Simon Williams.

The Observers to the Board are as follows: Dr Alison Duncan, Dr Roy Gardner, Dr Dominic Kelly, Mrs Annie MacCallum, Mrs Jayne Masters and Dr Nigel Rowell.

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CARDIOMYOPATHY ASSOCIATION

The Cardiomyopathy Association (CMA) is a UK charity that provides information and support to families affected by cardiomyopathy. People diagnosed with cardiomyopathy are often faced with a bewildering search for answers to the many questions that arise. The CMA has developed authoritative information resources to help patients and their families. Information booklets are provided free of charge to individuals and hospitals. The charity provides a 'helpline' service, which allows people to discuss their concerns with a qualified nurse. The charity's website, www.cardiomyopathy.org, receives over five million page views per year. The CMA organises information days around the UK for people affected by cardiomyopathy. These meetings provide the opportunity to learn more about the condition and to meet others similarly affected.

The CMA works to improve health professionals' knowledge of cardiomyopathy by organising high-profile national conferences for doctors, nurses and associated professions to provide education on latest updates in the diagnosis, treatment and management of cardiomyopathy.

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EDWARDS LIFESCIENCES

Edwards Lifesciences is the global leader in the science of heart valves and haemodynamic monitoring and has more than five decades of experience in partnering with clinicians to develop life-saving innovations. Edwards' products are designed to help patients live longer, healthier and more productive lives. We focus on medical technologies that address large, growing patient populations in which there are significant unmet clinical needs, such as structural heart disease and critical care monitoring. Our technologies are categorised into business units including heart valve therapy, critical care, cardiac surgery systems and vascular – each with a rich history and unique patient focus.

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EXHIBITORS AND CONTRIBUTORS

GAMBRO LUNDIA AB

Every day, Gambro's products save, sustain and improve the lives of patients worldwide through innovative products and therapies.

Gambro are proud to demonstrate the Aquadex™ FlexFlow system at the 15th Annual Meeting of the British Society for Heart Failure. This device provides a safe and effective way of removing excess salt and water from patients through ultrafiltration. The Aquadex™ portfolio can positively impact the length of hospital stay and also readmissions.

We look forward to talking to you more about Gambro and our latest innovations during the meeting.

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HEARTWARE, INC.

HeartWare, Inc. is developing a family of implantable mechanical circulatory support systems for the treatment of advanced heart failure. Through a cadence of progressively smaller devices implanted using less invasive techniques, HeartWare expects to treat an increasing proportion of heart failure patients and to access them at an earlier stage of their disease progression. HeartWare's lead device, the HeartWare Ventricular Assist System, incorporates state-of-the-art peripherals and features the only full-output pump designed to be implanted less invasively in the pericardial space. The HeartWare System has CE-Mark approval and is currently the subject of a 150-patient US IDE clinical trial.

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MAQUET

The MAQUET Group is the global market leader for Medical Systems, focusing on the Operating Room (OR), Hybrid OR, Cath Lab, Intensive Care Unit (ICU) and Patient Transport. The integrated products of MAQUET are specially designed to deliver optimal clinical and therapeutic treatment to patients.

Maquet will be showcasing a number of exciting products on the stand. Cardiohelp is the latest technology in ECLS. Cardiohelp is a versatile and compact solution for the most critically ill patients. Providing a platform to support patients who need VV or VA ECMO, Low flow Co2 removal, or VAD support for Adults and Paediatric patients. Cardiohelp is the only system on the market fully approved for ground and aviation transportation of critically ill patients.

Maquet will also introduce the next generation of Intra-Aortic Balloon Pump. Cardiosave is more than a pump it's a revolution. Cardiosave provides many new features including a compact transport solution. Maquet will also introduce the complete Mega IAB family of catheters providing higher efficacy for all patients.

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MEDTRONIC

Medtronic is the global leader in medical technology, alleviating pain, restoring health and extending life for millions of people around the world. Every four seconds, somewhere in the world, another life is improved by a Medtronic product or therapy.

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EXHIBITORS AND CONTRIBUTORS

NATIONAL INSTITUTE FOR CARDIOVASCULAR OUTCOMES RESEARCH (NICOR)

National Heart failure audit

The National Heart Failure Audit is managed by the National Institute for Cardiovascular Outcomes Research (NICOR) within the Institute of Cardiovascular Science at University College London. It has been developed in partnership with the British Society for Heart Failure and is funded by the Healthcare Quality Improvement Partnership (HQIP).

The purpose of the audit is to measure the quality of care and outcomes for patients with an unscheduled admission to hospital with heart failure, enabling comparisons between Trusts and Health Boards.

The audit measures performance against national guidelines and standards for the treatment and management of heart failure. The dataset consists of 59 core data items and has recently been updated to ensure it stays in line with contemporary NICE guidance and quality standards.

91% of NHS Trusts and Welsh Health Boards participated in the audit in 2011/12, and submitted data on 37,076 acute admissions to hospital of patients with a primary diagnosis of heart failure.

The audit's findings continue to show that access to specialist medical and nursing care is the gatekeeper to optimal care for heart failure patients, and underline the need to develop specialist in-patient services for heart failure patients.

A research group, HALO, has been established to develop research use of the data and to allow external research groups access to the data.

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NATIONAL INSTITUTE OF HEALTH RESEARCH (NIHR) CARDIOVASCULAR SPECIALTY GROUP

What is the NIHR Comprehensive Clinical Research Network and what can it do for you?

The National Institute of Health's (NIH) Comprehensive Clinical Research Network (CCRN) was set-up largely using research infrastructure funding that had previously been given to NHS Hospital Trusts to support research. Many other disease areas have specific Research Networks (e.g. cancer, diabetes, stroke) but cardiovascular disease forms the largest part of the CCRN's portfolio; so large that at a national level it has been sub-divided into six themes, one of which is heart failure.

The National Cardiovascular Speciality Group is Chaired jointly by Professor Bryan Williams and Mark Caulfield and has five heart failure representatives:

- Dr Prithwish Banerjee (West Midlands)
- Professor John Cleland (North & East Yorkshire and North Lincolnshire)
- Dr Justin Cooke (Trent)
- Dr Philip Keeling (Peninsula)
- Professor Allan Struthers (Scotland)

Our overarching aim is to increase the volume and quality of heart failure-related research in the UK. This has several elements:

- We try to identify problems with trials that may prevent them recruiting to time and target.
- We aim to create a broader heart failure research community so that we recruit from more hospitals. This will increase research capacity and funding within the UK.
- We hope to increase dialogue across sectors interested in the research agenda to identify barriers and opportunities that will improve the investigator's experience.

Without investigators who are interested in participating in research and willing to encourage their patients to take part, the investment in CCRN will be wasted. You are our most important resource and the CCRN is there to try to ensure that the 'system' provides support to all clinicians who wish to take part in research.

Please identify key clinical leads for heart failure in your region so that we can build a coordinated map of expert investigators in collaboration with the National Heart Failure Audit and British Cardiovascular Society.

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EXHIBITORS AND CONTRIBUTORS

NI-MEDICAL

NI*medical* has brought to market the **NICaS**, a patent protected, FDA approved and a CE marked medical device capable of measuring haemodynamic and respiratory parameters as well as fluid balance, non-invasively, accurately and cost effectively.

Measured parameters include: Heart Rate, Stroke Volume, Cardiac Output, Total Body Water, Total Peripheral Resistance, and Cardiac Power Index.

NICaS converts changes in electrical resistance to changes in blood volume occurring during the cardiac cycle. Unlike other thoracic bio-impedance devices, **NICaS** utilises the principle of whole-body bio-impedance resulting an unmatched accuracy.

NICaS provides a non-invasive, accurate (high correlation with thermodilution) and cost-effective solution for assisting in the diagnosis, monitoring and management of patient with Congestive Heart Failure and Hypertension as well as for Cardiac Resynchronization Therapy (CRT) optimization.

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NOVARTIS UK LTD

Novartis is based in Basel, Switzerland, and is a world leader in the research and development of products that protect and improve health and wellbeing. Providing healthcare solutions that address the evolving needs of patients and societies, Novartis offers a diversified portfolio to best meet these needs. This includes: leading innovative medicines, high-quality, low-cost generics, preventive vaccines and consumer health products. In the UK, Novartis employs over 3,500 people across eight sites. These eight sites are responsible for research, development, sales, marketing and manufacturing of products used in the UK and worldwide.

The Novartis Institute for BioMedical Research (NIBR), which operates from six sites globally, conducts drug discovery across a number of different disease areas. These include: cardiovascular disease, diabetes, infectious diseases, respiratory, oncology, gastrointestinal and transplantation.

In the UK, Novartis invests £1.5 million per week in research and development. The Respiratory Research Centre at Horsham is the Novartis worldwide headquarters for respiratory research, employing over 500 scientists in a £42 million purpose-built centre.

For more information, please visit http://www.novartis.co.uk

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PFIZER LTD

Pfizer: Working Together for a Healthier World™
At Pfizer, we apply science and our global resources to improve health and well-being at every stage of life. We strive to set the standard for quality, safety and value in the discovery, development and manufacturing of medicines for people and animals. Our diversified global health care portfolio includes human and animal biologic and small molecule medicines and vaccines, as well as nutritional products and many of the world's best-known consumer products. Every day, Pfizer colleagues work to advance wellness, prevention, treatments and cures that challenge the most feared diseases of our time. Consistent with our responsibility as the world's leading biopharmaceutical company, we also collaborate with health care providers, governments and local communities to support and expand access to reliable, affordable health care around the world. For more than 150 years, Pfizer has worked to make a difference for all who rely on us. In the UK, Pfizer has its business headquarters in Surrey and is the major supplier of medicines to the NHS. To learn more about our commitments, please visit us at http://www.pfizer.co.uk.

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RESMED (UK) LTD

ResMed (UK) Ltd is a leading developer and provider of cutting-edge technology for the identification and management of respiratory insufficiency and sleep disordered breathing in different patient populations. Our new AutoSet CS-A with PaceWave algorithm treats patients with mixed and central sleep disorders including Cheyne-Stokes Respiration. SERVE-HF: our multi-centre international study of the use of adaptive servo-ventilation for the treatment of heart failure and its impact on mortality and morbidity has now recruited over 1000 patients and recruitment will close in January 2013 with a 2-year patient follow up.

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SERVIER LABORATORIES LTD

Servier is an independent research foundation, which invests 25% of its turnover in research and development

- Servier laboratories is the UK subsidiary of The Servier Research Group, the leading independent French research based pharmaceutical company established in 1954 by Dr Jacques Servier.
- Created in 1963 with only two people, the UK subsidiary was the first subsidiary outside France.
- In just over fifty years, The Servier Research Group has developed in stature from a small family-owned, provincial pharmacy employing nine people to a multi-national operation with over 200,000 employees worldwide.
- Established in 140 countries, The Servier Research Group has annual sales worldwide of over 3 billion euros.
- The key franchises of The Servier Research Group are:
  - Cardiovascular disease
  - Diabetes
  - Rheumatology
  - Central Nervous System.
- Oncology.
- 25% of Servier's turnover is reinvested in Research and Development.
- The pharmaceutical industry invests over £3 bn a year in UK research, more than any other industry as a % of sales.[1]

[1]ABPI website – www.abpi.org.uk.

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THORATEC

Thoratec is a world leader in therapies to address advanced-stage heart failure. The company's products include the HeartMate® LVAS (Left Ventricular Assist System) and Thoratec® VAD (Ventricular Assist Device) with more than 18,000 devices implanted in patients suffering from heart failure. Thoratec also manufactures and distributes the CentriMag® and PediMag® / PediVAS® product lines.

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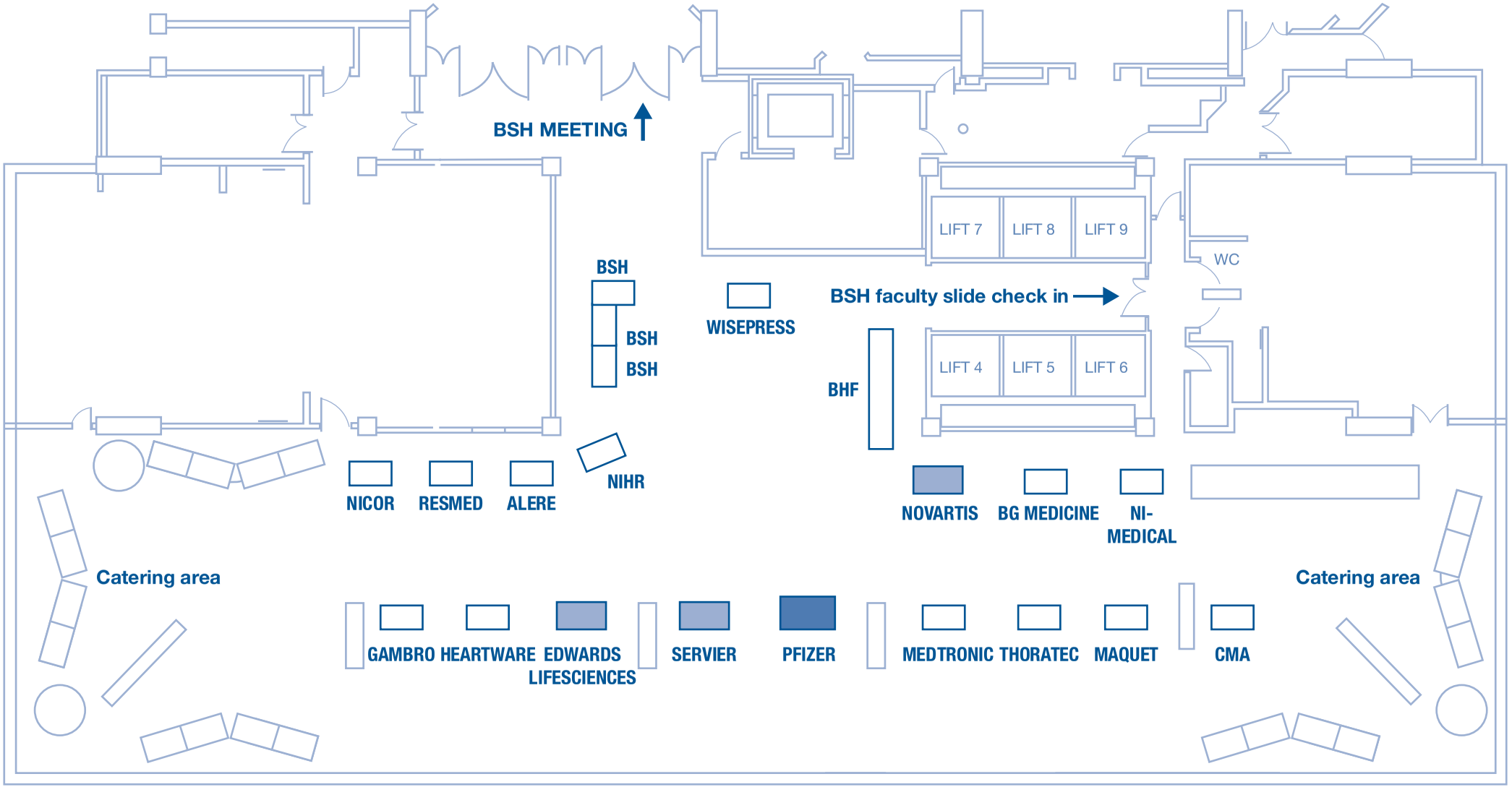
Queen Elizabeth II Conference Centre, London

Benjamin Britten Lounge

15th BSH Annual Autumn Meeting, 29–30 November 2012

Exhibition Plan




In post-MI heart failure
protection comes
as standard[1]
And now in
chronic heart failure (NYHA II)
Add Inspra
Add life[2]
PRESCRIBING INFORMATION FOR INSPRA
Adverse events should be reported. Reporting forms and
information can be found at www.mhra.gov.uk/yellowcard.
Adverse events should also be reported to
Pfizer Medical Information on 01304 616161
References:
Date of preparation: September 2012
Pfizer
inspra®
eplerenone
Lifesaving[1,2]
In addition to standard therapy
in patients with post-MI heart
failure (LVEF ≤40%) or chronic
heart failure (NYHA II, LVEF ≤30%)