British Society for Heart Failure
15th Annual Meeting

The British Society for Heart Failure (BSH) recently held its 15th annual meeting where over 500 delegates enjoyed a variety of presentations over the two-day conference. Sessions covered a number of aspects of heart failure (HF), including a keynote lecture on mineralocorticoid receptor antagonists from the internationally renowned Prof Faiez Zannad, thought-provoking issues in particular note were sessions on atrial rate (HR) lowering in HF. Sessions covered a number of aspects of heart palliative care and multi-professional views on the management of acute HF. Of particular note were sessions on atrial fibrillation (AF) and controversies of heart rate (HR) lowering in HF.

AF and heart failure
Dr John Cleland explained AF and HF are commonly associated and patients with HF who develop AF have a worse outcome. Standard anti-HF treatments including beta-blockers, renin-angiotensin-aldosterone system antagonists and digoxin are all associated with a reduced incidence of AF whereas treatment with ivabradine increases risk of developing AF [1]. However, restoring sinus rhythm (SR) has no effect on mortality and rhythm-control strategies may increase hospitalisation rates in patients with HF [2,3]. This may relate to toxicity of anti-arrhythmic drugs [4,5] and therefore, rate-control strategies may be more appropriate in HF populations; although target HR should be higher in patients with AF than in SR.

Dr Christopher George presented an enlightening lecture focusing on a basic sciences view of cell-cell signalling abnormalities as substrate for arrhythmia. Multiple cellular cascades interlink in a complex network and disease arises from progressive unravelling of this network. In HF, calcium leaks from sarcoplasmic reticulum, provoking highly ATP-dependent adaptive changes that place high metabolic demands on cellular systems over many years. Traditional anti-arrhythmic drugs target cell surface receptors but the drivers for signalling abnormalities are often intracellular and targeting the root causes may yield more effective anti-arrhythmic agents. While traditional anti-arrhythmic agents have not been promising in HF patients, Dr Stephen Furniss discussed the role of catheter ablation for AF. There are small, randomised-controlled trials demonstrating improvements in left ventricular ejection fraction (LVEF) and symptoms with catheter ablation in patients with persistent AF and HF [6]. However, LVEF measurement in AF is controversial and mortality outcome data is currently missing; further large clinical trials are awaited.

Cardiac resynchronisation therapy (CRT) is associated with significant morbidity and mortality benefits in patients with HF; low LVEF and prolonged QRS duration. Dr Rakesh Sharma explained AF can reduce biventricular pacing rates and the outcome of CRT in patients with AF is debated. Observational data suggest equivalent outcomes with CRT in SR and AF [7,8] although CRT is associated with better outcomes than right ventricular (RV) pacing in patients with AF and low LVEF who have a brady-indication for pacing [9]. The largest randomised-controlled trial of CRT in AF demonstrated no difference in outcome but this trial only recruited 229 patients, of which only one had an atrioventricular (AV) node ablation and only 30% achieved biventricular pacing rates >95% [10].

Controversies of HR lowering
Resting HR is proportional to life expectancy in mammals [11] and Prof Andrew Clark described how lower HR is associated with better survival in humans with and without cardiovascular disease [12,13]. Proposed mechanisms include improved coronary oxygen delivery due to longer diastole, reduced oxygen demand and reduced coronary mechanical stress. However, there is a U-shaped curve and HR may not be the driver of improved outcome but merely a marker.

Beta-blockers are integral to modern HF treatment. Prof Henry Dargie explained there is an overwhelming body of evidence demonstrating improved outcomes, for HF patients treated with beta-blockers. Benefits include a reduction in all-cause mortality alongside reduced re-admission rates. Beta-blockers work via diverse mechanisms and their effects are not just due to rate control. Ivabradine is a novel rate-dependent sinus node inhibitor and reduces HR in SR. Dr Suzanna Hardman discussed the 26% reduction in HF hospitalisations with ivabradine in the SHIFT trial [1]. Greatest benefit was seen in patients with resting HR >77bpm. Effect on the composite endpoint (death and HF hospitalisation) was lost in those taking >50% target beta-blocker dose but a reduction in HF hospitalisation was observed in this group. Although entry into the trial mandated maximum tolerated beta-blocker doses, only one quarter were prescribed maximum doses, nearly half were prescribed <50% maximum dose and 10% were prescribed none.

HR modulation with devices was reviewed by Dr Roy Gardner. RV pacing in HF is associated with a poorer outcome [14] although CRT may improve outcomes in HF patients with brady-indications for pacing but without standard QRS criteria. Meanwhile, implantable cardioverter-defibrillators do improve mortality [5] but inappropriate shocks, lead failures and end of life issues remain significant challenges.

Conclusion
The BSH annual meeting proved to be a valuable forum in which to learn from internationally renowned experts covering a broad range of issues in the field of HF. Lectures were thought provoking and speakers engaging, and there was also the opportunity to meet the experts between sessions. The BSH meeting is an important
date in the calendar for all individuals involved in HF, exemplified by the multidisciplinary backgrounds of speakers which included nurse specialists, surgeons, intensivists, palliative care specialists, geriatricians and general practitioners, as well as cardiologists, to name but a few.

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References

Book reviews

Key Questions in Cardiac Surgery

Due to the very wide and highly specialised field of cardiac surgery, the challenge for cardiac surgical trainees has always been to identify and condense information provided during their training. This interesting textbook focuses on ‘Key Questions in Cardiac Surgery’ and provides a comprehensive overview of the knowledge needed for specialty training and examinations for cardiac surgical trainees and residents. The text in this book is accompanied by a large number of illustrations and photographs which effectively relate to the ‘key questions’ helpful for the reader to proof his knowledge. Moorjani, Viola and Ohri manage not only to provide an overview on surgical aspects of the most common aspects of adult cardiac surgery, including thoracic aortic disease and heart failure, but also provide vital information on cardiac anatomy, physiology, diagnostics, and perioperative pharmacological and anaesthetic management. In this way the book may not only be of interest for trainees with a cardiac surgical interest, but can also provide important information for residents in cardiology and cardiac anaesthesia.


Cardiac Pacemakers and Resynchronization Step by Step: An Illustrated Guide

This step-by-step guide to cardiac pacemakers is an international bestseller and it is easy to see why. The authors have a real pedigree in this field and have set themselves the difficult task of explaining cardiac pacing both to complete novices and those seeking to improve their understanding of pacing. They manage to achieve this with great success. There are already a number of books on cardiac pacing currently available, but they are generally much more complicated and somewhat uninviting to the reader. This book, however, is completely the opposite. It has been based on Dubin’s renowned best-selling book on electrocardiography. The authors have commissioned a professional artist to produce simple but excellent full-page colour illustrations to convey the information. These illustrations are clear, well labelled and accompanied by succinct explanations, which help to reinforce the diagrammatic information and highlight essential concepts. The book covers basics explaining what a pacemaker does, to pacemaker electrocardiography and pacemaker sensing and capturing concepts. It also gives a comprehensive and systematic approach to the follow-up of the pacemaker patient, which is of paramount importance to physicians and cardiac technicians alike, and often poorly covered by other texts. All of this is seamlessly explained in this ‘step-by-step’ format. Now in its second edition it has updated relevant sections and added a detailed section on cardiac resynchronisation therapy for heart failure patients. It should be noted that implantable cardioverter defibrillators has a separate book by the same authors in the same style. The book also has an accompanying website which allows readers to access over 300 images which are free to download and be used for presentations. I have found this book to be invaluable for my own learning and strongly recommend it to those beginning to work in cardiac pacing and also to those with more advanced knowledge. The excellent illustrations make the book extremely easy to understand, and it represents excellent value for money with the additional website resource. Thoroughly recommended.