Chronic heart failure and hypertension: risks, diagnosis and management

Chronic heart failure and hypertension are major clinical problems. This article gives an overview of some of the talks from a recent BJHM conference supported by Takeda which brought together leading experts in the field to discuss current issues, latest developments and practical management of chronic heart failure and hypertension.

On 12 and 13 February, BJHM held a conference entitled chronic heart failure and hypertension, some talks from which are discussed here.

Hypertension and pregnancy

Dr Manju Chandiramani, Clinical Research Fellow, St Thomas' Hospital, London

Hypertension affects 10% of all pregnancies, leading to 60 000 deaths worldwide per year. It can be divided into pre-existing (essential), gestational and pre-eclampsia. The aetiology is poorly understood; it is believed placental ischaemia caused by genetic and autoimmune factors leads to insults of blood, liver, kidney, heart and brain as a result of oxidative stress. Biochemical and biophysical markers can predict but not prevent the development of hypertension. The risk of pre-eclampsia increases with antiphospholipid syndrome, past medical history of factors such as pre-eclampsia, diabetes, family medical history, high body mass index and age over 40 years.

The National Institute for Health and Clinical Excellence recommends that women should be given seven antenatal appointments, with screening for hypertension, proteinuria, signs and symptoms, fetal growth and general well-being but how many receive this? Early referral and specialist input is needed to reduce substandard care. Further investigations include uterine artery Doppler and biomarkers. While obesity and hypercholesterolaemia increase the risk, smoking is protective and aspirin and calcium reduce risk (Hofmeyr et al, 2006), but there is no benefit from vitamins C or E. Antihypertensive treatments are commonly used, but delivery is the only cure. New hypertension if diagnosed >36 weeks gestation will generally not lead to poor outcomes but if <36 weeks it may well progress and lead to poor outcomes. The latter need close specialist surveillance of both mother and fetus.

Anaemia and chronic heart failure

Dr Paul Kalra, Consultant Cardiologist, Portsmouth Hospitals NHS Trust

Dyspnoea and fatigue are very common and can be attributed to anaemia, chronic heart failure or both, making the aetiology difficult to delineate. Prevalence is estimated at 9–30%, but many studies do not use current World Health Organization criteria so anaemia may be underestimated. Common sense suggests survival should fall with haemoglobin level, but the risk ratio distribution for death is U shaped. There are a number of mechanisms by which chronic heart failure may lead to anaemia, which may not only coexist but may be additive.

Giving erythropoetin with iron reduces mortality, furosemide requirement and hospitalization, improves ejection fraction with a maximal benefit for New York Heart Association class III/IV, but while erythropoetin and iron increased haemoglobin, oral iron alone produced no change, so perhaps a lower threshold is needed to use intravenous iron. To improve treatment large scale efficacy and safety studies are needed to look at what level of haemoglobin should trigger replacement, what level should be aimed for and what is best practice for intervention: oral iron, intravenous iron, erythropoetin or a combination? Perhaps current trials will answer these questions.

Lifestyle and chronic heart failure

Ms Susan Kennedy, BHF Cardiac Care Lecturer, University of Glasgow

Lifestyle is a key determinant to health, but what does this mean to the patient? The World Health Organization found 80% of deaths are attributable to cerebrovascular and cardiovascular disease, which can be avoided by a healthy diet, regular exercise and not smoking. Reducing weight, alcohol, salt and fat intake and increasing activity and fruit and vegetable intake all reduce hypertension and chronic heart failure, and these changes are additive. Nicotine and caffeine raises blood pressure, thus abstinence and reduced intake are recommended respectively. Yet, individuals from lower economic strata consume more unhealthy foods and are less aware of their weight. People know exercise is good for them, so why are they still sedentary? Barriers include lack of time, of skills, of knowledge, of interest and time better spent. Ms Kennedy advocates using motivational interviewing to assess readiness, reduce resistance and support change in such individuals.

Rather than lecture patients, doctors should empower them via self-management programmes and expert patient programmes. Health-care professionals can be powerful role models; perhaps it is time doctors took some of their own medicine and got on their bikes?

Dr David Warriner *is CT1 Diabetes, Northern General Hospital, Sheffield, South Yorkshire S5 7AU*

Primary and secondary care interface

Ms Jane Butler, Consultant Nurse, Barts and The London NHS Trust

Ms Butler eloquently described how the broken spoke in the buckled wheel of the NHS lies between primary and secondary care. She outlined the aims of a integrated service: to bridge gaps, share management and prevent unnecessary hospitalization. The generalist represents the patient's everyday reality, knowing many of the health behaviours, co-morbidities and often having other information to share. Yet medication is sub-optimal, monitoring infrequent and patient education limited. The specialist typically has knowledge, skills and experience in dealing with complex disease, ordering appropriate tests and using current treatment, but patients are lost to follow up and services are developed only by the interested few.

European Society for Cardiology recommendations (Swedberg et al, 2005) suggest barriers must be broken down by collaboration, communication, planning and transition of care. The challenges remain in optimizing medication, providing high quality care, allocating resources, and knowing when to refer or withdraw. Ms Butler concluded that there are still failings in continuity of care, communication and timely recognition of problems. The inexperience, excessive workloads, lack of skills and inadequate clinical supervision and training must be addressed.

New emerging pharmacotherapies

Ms Helen Williams, Consultant Pharmacist for Cardiovascular Disease, South East London NHS Trust

Aliskiren (Novartis) is a direct renin inhibitor which blocks conversion of angiotensinogen to angiotensin. It reduces blood pressure in a similar manner to angiotensin-converting enzyme inhibitors and its effect is additive. Side effects include diarrhoea and headache, less commonly rash and rarely angiooedema or hyperkalaemia. A Cochrane review (Musini et al, 2008) concluded it is expensive but better than placebo, so data from the eight trials currently in progress are awaited with interest.

Tolvaptan (Otsuka) is a V2 antidiuretic hormone receptor blocker, stopping antidiuretic hormone binding to the distal nephron. Tolvaptan increases aquaporin activity in the collecting ducts, leading to increased non-osmolar water loss, and thus increased antidiuretic hormone, aldosterone and renin secretion. Thirst, polyuria and dry mouth are the more common side effects. The EVEREST trial (Konstam et al, 2007) was designed to demonstrate the effect of tolvaptan on signs and symptoms of chronic heart failure and evaluate mortality and morbidity. It produced weight loss of 0.6–0.9 kg, improved oedema and dyspnoea but no overall difference in clinical status. Others agents currently under investigation include rolofylline (adenosine A1 receptors antagonist), istaroxime (cardiac Na+/K+ ATPase inhibitor), growth hormone, L-thyroxine, erythropoetin and matrix metalloproteinases. Ms Williams believes the future may lie with neurohormonal modulators, new ionotropes (of which the audience and speaker were very sceptical), myocyte transplant or gene therapy.

Palliative care for patients with end stage heart failure

Dr James Beattie, Consultant Cardiologist, Heart of England NHS Foundation Trust, Birmingham

Dr Beattie gave a humble and honest critique of palliative care in chronic heart failure, which has come into its own over the last 20 years. Services often have only cancer in mind, but in the UK, cancer and cardiovascular disease each cause 26% of deaths. Dying with chronic heart failure is protracted, unpredictable and with a heavy burden of symptoms. Trajectory of death in organ failure is stepwise, so chronic heart failure is difficult to model, but patients still ask 'How long have I got?' Recognized triggers for palliative care include age, albumin <25 g/litre, refractory symptoms, weight loss >10% in 6 months and deterioration despite optimal therapy. Symptoms reported by patients dying from chronic heart failure included pain, dyspnoea, insomnia, anxiety and anorexia, with only one third receiving good control (McCarthy et al, 1996). UK guidelines concluded that unmet palliative needs, including coordination, symptom control, support, rehabilitation and communication, could be met with a multidisciplinary approach. Dr Beattie called for facilitation of an active and natural death, and open and sensitive communication. He advocated the surprise question 'Would I be surprised if this patient was dead in 12 months?' as a powerful screening tool to trigger discussion.

Conclusions

This conference covered birth to death, medicine to surgery and psychology to pharmacology, but the most important messages were simple: the patient is the centre, good communication is paramount, doctors must be proactive and support patients. The failing that haunted the 2 days was the breakdown in continuity, communication and responsibility between primary and secondary care. Only talking, listening and acting can bridge the divide. **BJHM**

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