European Society of Cardiology Congress
Amsterdam, 31 August–4 September

Sustained blood pressure lowering in resistant hypertension

Patients with treatment-resistant hypertension who underwent renal denervation in the Symplicity HTN-1 clinical trial continued to experience consistent reductions in blood pressure after 3 years' follow up, regardless of advanced age, the presence of diabetes or impaired baseline renal function.

The final data from this, the first and longest running clinical study investigating the safety and efficacy of renal denervation, were presented at the European Society of Cardiology Congress by Professor Henry Krum, Chair of Medical Therapeutics and Director of the Monash Centre of Cardiovascular Research and Education in Therapeutics, Melbourne, Australia.

Professor Krum explained that ablation of nerves in the renal arteries using low power radiofrequency energy significantly lowers blood pressure in patients with severe hypertension who do not respond to standard drug therapy.

Symplicity HTN-1 was designed to address concerns regarding the long-term safety and effectiveness of renal denervation. Originally, 153 patients with treatment-resistant hypertension (systolic blood pressure ≥160 mmHg despite the use of three or more antihypertensive drugs including a diuretic) were enrolled from 19 centres in Australia, the United States and Europe, with 129 patients consenting to a 3-year follow up.

In the event, 88 patients were available for the full 3-year evaluation, all of whom demonstrated sustained blood pressure reductions with an average reduction of -32/-14 mmHg (P<0.01).

Of these, approximately 50% achieved the goal of a systolic blood pressure <140 mmHg, despite having a mean systolic blood pressure of 169.8 mmHg pre-denervation. There were very few clinically significant late adverse events reported.

Safety follow up in the 3-year patient cohort demonstrated continued stable renal function. There were two orthostatic hypotension events in one patient, which resolved with medication changes, and one renal artery stenosis at 24 months, which was possibly related to the renal denervation procedure.

Professor Krum commented: 'We're seeing sustained and significant blood pressure lowering in all patients who reached the 3-year time point following their denervation procedure. Achieving target blood pressure of <140 mmHg in about half of these patients is impressive considering that they had very high baseline blood pressure values despite being on multiple pharmaceutical agents.'

Stephen Pinn

Professor Henry Krum, Chair of Medical Therapeutics and Director, Monash Centre of Cardiovascular Research and Education in Therapeutics, Melbourne, Australia

Preventive procedure better than culprit artery percutaneous coronary intervention alone in ST elevation myocardial infarction

Myocardial infarction patients with ST elevation who undergo a preventive procedure to unblock additional coronary arteries have significantly better outcomes than those whose treatment is confined to the culprit blockage only.

Data from the Preventive Angioplasty in Myocardial Infarction (PRAMI) trial were presented by Dr David Wald of the Wolfson Institute of Preventive Medicine, Bart's and The London School of Medicine, Queen Mary University of London and the London Chest Hospital, and subsequently published in the *New England Journal of Medicine* (Wald et al, 2013).

The study found that in 465 patients, preventive percutaneous coronary intervention in addition to infarct-only percutaneous coronary intervention resulted in a 65% risk reduction in adverse cardiovascular events.

Dr Wald said that the PRAMI data will help guide clinical practice and resolve uncertainty over how to approach percutaneous coronary intervention for ST elevation myocardial infarction, stating: 'The results of this trial show that preventive percutaneous coronary intervention, in this situation, reduces the risk of cardiac death, a subsequent myocardial infarction or angina resistant to medical therapy, by about two-thirds.'

With this new evidence, 'consideration can be given to revising current guidelines,' he added.

Dr Wald concluded that: 'the initial costs of preventive percutaneous coronary intervention are higher but there will be reduced costs thereafter, with a reduced need for subsequent hospital admissions, cardiac investigations and revascularization procedures.'

Stephen Pinn

Wald DS, Morris JK, Wald NJ et al for the PRAMI Investigators (2013) Randomized Trial of Preventive Angioplasty in Myocardial Infarction. *N Engl J Med* **369**: 1115–23