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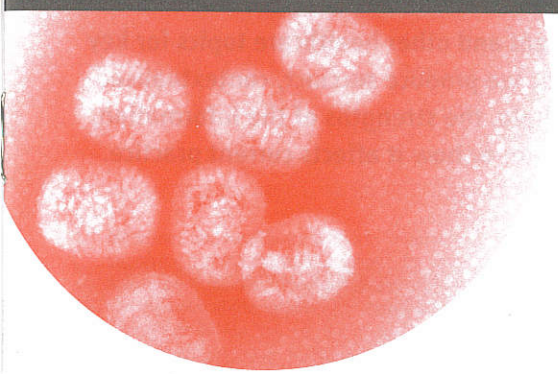

Taking the hype out of hypertension

Recently, the world's first blinded randomised controlled trial of renal sympathetic denervation in patients with resistant hypertension (SYMPLICITY HTN-3) reported its findings amidst much hope and hype.[1] Renal sympathetic denervation involves percutaneous catheter-based radiofrequency ablation of nerves around the renal artery to reduce sympathetic afferent and efferent activity. Preceding unblinded studies had suggested that the procedure was associated with an impressive reduction in systolic blood pressure of around 30mmHg.[2,3] Beyond the field of hypertension, renal denervation therapy had even been suggested to offer benefit in conditions including heart failure, diabetes, chronic renal failure and obstructive sleep apnoea.[4] Thus, it is not surprising that the medical community has expressed disappointment that the fall in blood pressure following denervation was not significantly greater than following a sham-placebo procedure.[5]

It is not difficult to understand some of the possible reasons why so much hope and ultimately hype surrounded the procedure. Despite the availability of many pharmacological therapies, optimum control of blood pressure is difficult to achieve and many patients are unable to tolerate, or do not wish to take long-term medication. Other than patients themselves, many stood to gain from confirmation that denervation therapy would confer the degree of blood pressure lowering suggested from unblinded studies. Amongst them, those managing hypertension would have had a new treatment option; the medical media a new therapy to communicate; manufacturers a new product to sell; and investors a new field of enterprise to fund. Perhaps what was significantly different with denervation therapy was the magnitude of blood pressure reduction and that interventionists—uniquely for a therapeutic field hitherto dominated by drug treatment—would have had a new and large cohort of patients to treat and a new technique to provide.

There remains much uncertainty with denervation therapy and the findings of the SYMPLICITY HTN-3 trial. For instance, it is unclear if the lack of benefit seen with the trial is due to elimination of bias by its blinded study design or due to technical failure of the procedure within the study. The major stakeholders in renal denervation therapy will need to unpick the fall-out from the results ensuring that the technology is now not overly under-valued, in a similar way that its potential benefits may previously have been overstated, and that the technology is not discarded without full and balanced appraisal.

Developments in the pharmaceutical management of hypertension have also been disappointing. Mibefradil, a T-channel calcium blocker, was voluntarily withdrawn by its manufacturer in 1998 following reports of dangerous interactions. In 2000, despite initial results showing promise, omapatrilat, a combined angiotensin converting enyzme and neutral endopeptidase inhibitor, failed to gain approval from the US Food and Drug Administration due to a high incidence of angio-oedema. More recently, contraindications and warnings were added to the product information for aliskiren, the direct renin inhibitor, on account of potentially dangerous interactions with ACE inhibitors and angiotensin-II receptor antagonists.[6] It is now approaching 3 decades since a significant new drug and class of anti-hypertensive was licensed for the management of hypertension.

Hypertension remains a leading cause of death worldwide, contributing to over 9 million deaths per year.[7] It has been estimated to affect over a quarter of the world's adult population and, importantly, its global prevalence is set to rise to 29%, with approximately 1.6 billion people affected by 2025.[8] The absence of any new therapeutic interventions should not prevent healthcare professionals from making full use of the known benefits of established processes for tackling hypertension. Such multifaceted approaches including individualised risk assessment, lifestyle interventions, effective measurement and monitoring, and optimised drug therapy still remain important.

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