

# Renal denervation achieves significant and sustained blood pressure reduction

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Renal denervation leads to significant and sustained blood pressure reduction for up to 18 months in patients with treatment resistant hypertension, according to research presented at ESC Congress 2012. The new clinical data from the Symplicity HTN-2 randomized clinical trial were presented by principal investigator Dr Murray Esler at the scientific session, associate director of the Baker IDI Heart and Diabetes Institute of Melbourne, Australia and by Prof Böhm for the ESC Press Conference.

Treatment resistant hypertension is blood pressure that remains persistently high despite at least three prescription blood pressure medications, including a diuretic. This condition puts approximately 120 million people worldwide at risk of premature death from [kidney disease](#) and cardiovascular events such as stroke, heart attack and [heart failure](#) (1). "Treatment resistant hypertension is one of the most challenging forms of hypertension to manage because it does not respond to blood pressure lowering drugs," said Dr Esler.

Renal denervation is a minimally [invasive procedure](#) which disrupts both afferent and efferent nerves leading into and out of the kidneys. It uses radio frequency energy emitted by a catheter device inserted into the renal arteries through the groin to treat [patients](#) resistant to drug therapy.

The Symplicity HTN-2 trial is an international, multi-center, prospective, randomized, controlled study of the safety and effectiveness of renal denervation with the catheter-based Symplicity™ renal denervation system in patients with treatment resistant hypertension. Patients with treatment resistant hypertension were randomized in a one-to-one ratio to receive renal denervation plus antihypertensive medications or antihypertensive medications alone (control group) at 24 centers in 11 countries.

At baseline, the treatment (n=49 patients) and

control (n=52 patients) groups had similar high blood pressures: 178/97 mmHg and 178/98 mmHg, respectively, despite both receiving an average daily regimen of five antihypertensive medications.

Patients in the control arm of the study were offered renal denervation following assessment of blood pressure, which was the trial's primary endpoint, at 6 months post-randomization. Thirty-five patients from the control group with systolic blood pressures  $\geq$  160 mmHg received denervation at 6 months (this became the crossover group).

The researchers found that renal denervation was safe and effective in both treatment groups up to 18 months post-procedure. Forty-three patients initially randomized to renal denervation were followed for up to 18 months and had an average blood pressure reduction of -32/-12 mmHg from baseline (p

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