

 HYPERTENSION

# Update on renal artery denervation

Patients with isolated systolic hypertension (ISH) have less pronounced reductions in blood pressure (BP) after sympathetic renal artery denervation than patients with combined systolic–diastolic hypertension (CH), according to findings from a pooled analysis of data from the SYMPLICITY HTN-3 clinical trial and the Global SYMPLICITY Registry. Clinical trials of catheter-based renal artery denervation to lower blood pressure in patients with uncontrolled hypertension had mixed results, with some variability in the effect of the procedure. “Identification of specific subsets of patients who could potentially benefit from renal denervation, or of baseline characteristics that may help to predict outcomes following the procedure, ... would greatly help to prevent patients from undergoing unnecessary procedures,” explains Felix Mahfoud, lead investigator of the study.

The pooled analysis included data from 1,103 patients with uncontrolled hypertension. Mahfoud and colleagues found that, although renal denervation reduced systolic BP in both groups of patients, the presence of CH at baseline was associated with greater reductions in systolic BP at 6 months after the procedure than the presence of ISH ( $-7.8$  mmHg, 95% CI  $-10.5$  to  $-5.1$ ;  $P < 0.001$ ). ISH (systolic BP  $\geq 140$  mmHg, diastolic BP  $< 90$  mmHg) is the main phenotype of hypertension in elderly patients. Interestingly, the analysis showed that, in patients with ISH, the response to renal denervation was similar in all age groups. ISH has been shown to be associated with increased vascular stiffness. “This study adds to the evidence indicating that the response to renal denervation is less pronounced in patients with stiff arteries,” says Mahfoud.

CH was the strongest predictor of office systolic BP reduction at 6 months after renal denervation. “Patients with CH may represent good candidates for testing [renal denervation in clinical trials],” points out Mahfoud, and adds that this analysis should inform the design of future clinical trials.

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**ORIGINAL ARTICLE** Mahfoud, F. *et al.* Reduced blood pressure-lowering effect of catheter-based renal denervation in patients with isolated systolic hypertension: data from SYMPLICITY HTN-3 and the Global SYMPLICITY Registry. *Eur. Heart J.* <http://dx.doi.org/10.1093/eurheartj/ehw325> (2016)

**FURTHER READING** Gulati, R. *et al.* The rise, fall, and possible resurrection of renal denervation. *Nat. Rev. Cardiol.* **13**, 238–244 (2016)