Catheter-Based Renal Nerve Ablation and Centrally Generated Sympathetic Activity in Difficult-to-Control Hypertensive Patients: Prospective Case Series

To the Editor:

The recently published article by Brinkmann et al.1 attempted to investigate the effect of catheter-based renal denervation (RDN) on blood pressure (BP) and muscle sympathetic nerve activity. The article is of interest; however, some aspects require clarification.

In disagreement with several other studies, the authors report no significant overall blood BP lowering effect after RDN in a small group of 12 patients, and not surprisingly did not observe any changes in muscle sympathetic nerve activity. As shown in larger series, procedural success is clearly not observe any changes in muscle sympathetic nerve activity. In contrast to the Symplicity trials, the baseline BP herein was 157/85 mm Hg and thereby ≈20/10 mm Hg lower. To avoid invasive treatment by RDN in patients with low probability of BP lowering afterward, identification of predictors of response are essential. However, it has been shown that systolic BP at baseline is correlated to BP lowering after the procedure.2 This is supported by the finding that patient no. 3 with a baseline BP of 222/101 mm Hg, apparently suitable according to present recommendations,3,4 experienced a pronounced reduction by 66/29 mm Hg.

As the authors are aware and claim in their Perspectives, RDN should be restricted to patients with true resistant hypertension and high cardiovascular risk. The authors also express their concerns on the widespread adoption of RDN (especially in Germany), leading to softer criteria for patient eligibility. This has been addressed by different, recently published position papers from national4 and international societies,3 aimed to provide practical recommendations on the application of RDN. Based on the current available evidence there is a broad consensus that only patients with severe resistant hypertension, defined as office systolic BP≥160 mm Hg (≥150 mm Hg in type 2 diabetes mellitus), should be considered for RDN. The question that inevitably arises while reading the article by Brinkmann et al.1 is why subjects with nontreatment-resistant hypertension (42% of the patients had systolic BP≤140 mm Hg, patient no. 11 was even normotensive: 121/65 mm Hg) were selected for RDN, when current recommendations consider this as an exclusion criterion. Inclusion of these patients represents a serious limitation of the study, also raising an ethical issue. The authors could not expect a significant BP drop in normotensive or nonresistant patients. Interestingly, heart rate was significantly reduced in the majority of patients (7/12), which might indicate a more sensitive surrogate for significant effects in patients with normal BP and is in line with recent data by Ukena et al.5

We are confident that proper scientific investigation of the new approaches (including RDN and baroreflex stimulation) for patients who failed to respond to drug treatment and lifestyle modification will, if performed on a scientifically sound basis, help to definitely determine the role of these device-based therapies.

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Hypertension. 2013;61:e17; originally published online December 17, 2012;
doi: 10.1161/HYPERTENSIONAHA.111.00540

Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0194-911X. Online ISSN: 1524-4563

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://hyper.ahajournals.org/content/61/2/e17

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