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 al1 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 observed in patients with high BP as a surrogate of increased sympathetic 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. The article is of interest; however, some aspects require clarification.

Additionally, 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 observed in patients with high BP as a surrogate of increased sympathetic 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. The recently published article by Brinkmann et al1 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 observed in patients with high BP as a surrogate of increased sympathetic 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. The article is of interest; however, some aspects require clarification.

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 national3 and international societies,4 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 al1 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.

Felix Mahfoud
Michael Böhm
Klinik für Kardiologie
Angiologie und Internistische Intensivmedizin
Universitätsklinikum des Saarlandes
Homburg/Saar, Germany

Lars Christian Rump
Oliver Vonend
Klinik für Nephrologie
Universitätsklinikum Düsseldorf
Düsseldorf, Germany

Roland E. Schmieder
Medizinische Klinik 4
Nephrologie und Hypertensiologie
Universitätsklinikum Erlangen
Erlangen, Germany

Ulrich Kintscher
Center for Cardiovascular Research
Department of Translational Pharmacology
Berlin, Germany


(Hypertension. 2013;61:e17.)
© 2012 American Heart Association, Inc.
Hypertension is available at http://hyper.ahajournals.org
DOI:10.1161/HYPERTENSIONAHA.111.00540

Letter to the Editor

Letters to the Editor will be published, if suitable, as space permits. They should not exceed 500 words (typed double-spaced) plus 5 references in length and may be subject to editing or abridgment.
Catheter-Based Renal Nerve Ablation and Centrally Generated Sympathetic Activity in Difficult-to-Control Hypertensive Patients: Prospective Case Series
Felix Mahfoud, Michael Böhm, Lars Christian Rump, Oliver Vonend, Roland E. Schmieder and Ulrich Kintscher

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
Copyright © 2012 American Heart Association, Inc. All rights reserved.
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

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Hypertension can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Hypertension is online at:
http://hyper.ahajournals.org//subscriptions/