differences in renal denervation technologies and their applicability to the subset of patients with accessory renal artery anatomy.

*Farrell O. Mendelsohn, MD

*Interventional Hypertension Therapies Program
Cardiology PC
801 Princeton Avenue, SW
Suite 707
Birmingham, Alabama 35211
E-mail: fmendelsohn@cardiologypc.com

http://dx.doi.org/10.1016/j.jcin.2013.12.194

Please note: Dr. Mendelsohn has received consulting fees from Medtronic and Boston Scientific/Vessix and has served on the medical advisory board of Boston Scientific.

REFERENCES


Reply

Renal Denervation of Accessory Renal Arteries

We appreciate the interest and comments of Dr. Mendelsohn regarding our recently published paper (1). The paper described the blood pressure–lowering effect of catheter-based renal denervation in patients with bilateral single renal arteries compared with those with accessory renal arteries.

As outlined in our paper, systolic blood pressure reduction was less pronounced in patients with accessory renal arteries (regardless of complete or incomplete denervation). Furthermore, blood pressure reduction, even in patients with complete denervation of accessory renal arteries, was numerically less pronounced than in patients with bilateral single renal arteries; however, this difference did not reach statistical significance. We postulated that the latter observation might have been related to a true absence of a difference in blood pressure reductions or to a true difference that did not reach statistical significance due to insufficient power, a result of the limited number of patients in the respective subgroups. Studies with larger patient numbers and adequate power to clarify the importance of complete denervation including accessory renal arteries are needed. We agree with Dr. Mendelsohn that, provided these studies confirm a less pronounced blood pressure reduction in patients with accessory renal arteries, this may be the result of incomplete denervation due to technical limitations related to overheating as a consequence of insufficient cooling by altered flow dynamics in accessory renal arteries. It is also possible that limited maneuverability of the catheter used in our study in smaller caliber arteries interferes with circumferential energy application, perhaps preventing complete denervation. In this context, potential solutions are being actively pursued by a number of companies. These may include, but are not limited to, irrigated radiofrequency catheter systems, lower profile catheters with superior maneuverability that do not interfere with flow dynamics in smaller vessels, the use of a cooling balloon during energy delivery, chemical neurolysis, or noninvasive denervation. Some of these technologies have reached the clinical stage and approval for use in some countries. It will now be very important to examine the efficacy (and safety) of these technologies in smaller accessory renal arteries. Hence, studies examining devices that allow application in smaller (<4 mm) caliber arteries should not exclude patients with accessory renal arteries.

Dani Id, MD
Stefan C. Bertog, MD
Benjamin Kaltenbach, MD
Marius Hornung, MD
Ilona Hofmann, MD
Laura Vaskelyte, MD
*Horst Sievert, MD

*CardioVascular Center Frankfurt
Seckbacher Landstrasse 65
60389 Frankfurt
Germany
E-mail: horstsievertmd@aol.com

http://dx.doi.org/10.1016/j.jcin.2014.01.149

REFERENCE