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Correspondence

LETTERS TO THE EDITOR

Catheter-Based Renal Denervation in ADPKD: Just for Pain Control?

To the Editor:

We read with interest the case report by Casteleijn et al,[1] which reported successful use of catheter-based renal denervation to reduce chronic kidney pain in a patient with autosomal dominant polycystic kidney disease (ADPKD). There have been several published cases of renal denervation to provide pain relief for patients with ADPKD (eg, Walsh and Sarria[2]), but none has highlighted the positive effect of this procedure on blood pressure (BP). Sympathetic overactivity plays a crucial pathogenetic role in hypertension of ADPKD,[3] and fewer than 30% of patients undergoing treatment for the disease achieve BPs less than 130/80 mm Hg.

Recently, we described an exceptional case of renal denervation in a woman with single-kidney stage 4 chronic kidney disease secondary to ADPKD and uncontrolled treatment-resistant hypertension.[4] Due to failure of all other therapeutic strategies, including uninephrectomy, renal denervation by radiofrequency ablation of the single renal artery was performed. After the procedure, the patient's BP declined remarkably, decreasing her need for antihypertensive medication. Moreover, the patient did not experience a significant decline in kidney function.

Several studies support the safety and efficacy of renal denervation.[5,6] However, the existing evidence is limited by small studies and short follow-up. A large trial,[7] recently completed but not yet published (at the time of writing), as well as ongoing clinical trials,[8-14] should provide important information regarding the safety and efficacy of renal denervation for resistant hypertension or other indications.

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In Reply to 'Catheter-Based Renal Denervation in ADPKD: Just for Pain Control?'

The letter by Riccio et al[1] deals with a timely topic, adding catheter-based renal denervation as a potential therapeutic option for resistant hypertension in patients with autosomal dominant polycystic kidney disease (ADPKD).

The uncontrolled small-scale Simplicity HTN-1 and HTN-2 trials suggested that renal denervation could be a promising novel treatment for resistant hypertension in patients without ADPKD.[2,3] Unfortunately, the larger more recent Simplicity HTN-3 trial showed that on 6-month follow-up, 364 patients treated with renal denervation experienced no significant reduction in blood pressure compared with 171 control patients who underwent a sham procedure.[4] Although these novel data may eliminate renal denervation as a treatment option for uncontrolled hypertension in the general population, it is possible that the procedure is effective in carefully selected patient populations characterized by high sympathetic tone. Interestingly, studies have shown that in both mice and humans with PKD, sympathetic tone is increased.[5,6] Therefore, the idea that renal denervation may be an option in the management of therapy-resistant hypertension in ADPKD seems rational. Consistent with this hypothesis, several case reports have suggested that renal denervation is effective for blood pressure control in ADPKD.[7-10]

However, we should learn from the Symplicity trials. Evidence from case reports and uncontrolled small-scale studies is not