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PERCUTANEOUS RENAL DENERVATION FOR RESISTANT HYPERTENSION: REAL WORLD OUTCOMES

ACC Oral Contributions
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Session Title: Prevention: Renal Sympathetic Denervation - A Novel Therapy for Hypertension?
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Background: Arterial hypertension is the largest single contributor to global mortality, and is poorly controlled in approximately 50% of patients despite lifestyle and pharmacologic interventions. Renal sympathetic hyperactivity is a key factor in the maintenance and progression of hypertension and randomized clinical trials have shown that catheter-based renal sympathetic denervation reduces blood pressure (BP) in patients with resistant hypertension. "Real world" data regarding the efficacy of this novel therapy are not available.

Methods: Consecutive patients with treatment resistant primary hypertension, as defined as home BP > 160 mmHg despite treatment with ≥3 antihypertensive drugs, were selected for denervation following renal artery screening. Ambulatory and home BP monitoring was performed in all patients prior to and following percutaneous renal sympathetic denervation.

Results: In total, 35 patients were selected for catheter-based renal sympathetic denervation. The mean age was 63.6±11.7 years, 36.5% were women, 36.4% were diabetic, and 15.2% had renal impairment (GFR<60mL/min). Baseline BP (office) was 181.1±21.9 /100.8±16.8 mmHg, despite an average of 4.6±1.0 medications per patient. Baseline ambulatory BP was 171.6±19.6/93.5±13.3 mmHg. Successful bilateral sympathetic denervation was performed in 33/35 patients [1 renal artery stenosis on angiography (not ablated), 1 patient with renal artery spasm (unilateral denervation)], with an average 6.1±2.0 ablations per renal artery. No procedural complications occurred. At 6-months follow-up, the average office BP reduction from baseline was 30.3±21.1/14.6±15.3 mmHg (P<0.0001). Similarly, ambulatory BP was reduced on average 23.3±12.1/10.2±9.9 mmHg (P<0.001). There were no adverse events during follow-up, and no deterioration in renal function was observed.

Conclusion: Catheter-based renal denervation is safe and efficacious treatment, which results in significant reductions in blood pressure in patients with treatment resistant hypertension. These results are applicable to real-world patient populations.