TCT-493
Renal Sympathetic Denervation In Patients With Resistant Hypertension - Inducing An Immediate And Persisting 24h Ambulatory Blood Pressure (ABPM) Reduction - Results From The Halle-RDN-Registry
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Background: Catheter-based renal sympathetic denervation (RDN) has shown to significantly reduce blood pressure (BP) in patients with resistant hypertension. So far, current available data are almost entirely derived from office-based blood pressure measurements (OBPM) with only few data basing on more reliable 24h ambulatory blood pressure monitoring (ABPM).
Methods: Our study carefully investigated the ABPM response to RDN in a cohort of 181 consecutively treated patients with resistant hypertension. Baseline values included a mean age of 63 ±9.6 years, BMI of 31.9 ±5.8 Kg/m2, 48% women, 48% diabetic, 19% coronary artery disease and 5.7 ±1.8 antihypertensive medications. A 24h BP monitoring was recorded in every patient 24h before as well as 24h, 3, 6 and 12 months after RDN. BP readings were then averaged according to daytime (7:00am-22:00pm), nighttime (22:00pm-7:00am) and 24 hours intervals. All data were statistically analyzed using mixed models with repeated measurements.
Results: In treated patients averaged systolic 24h BP was reduced by 10.34 ±3.12 mmHg (p<0.001; n 181) during the first 24 hours. Systolic blood pressure reduction appeared to be much higher at daytime (13.11±1.4 mmHg; p<0.001) compared to nighttime (5.3±1.40 mmHg; p=0.016) which most likely reflects the physiologically higher sympathetic activity at daytime. A concomitant effect on diastolic BP was observed: 6.87±0.76 mmHg (p<0.001). Systolic BP reduction sustained at 3 months (5.63±1.48 mmHg; p<0.005, n 147), 6 (4.87±1.5 mmHg; p=0.0014, n 136) and 12 months (7.95±1.82 mm Hg, p<0.001, n 101) without further decrease – on the contrary a slight relapse to higher BP was seen.
Conclusions: In patients with resistant hypertension, RDN leads to an immediate and persisting reduction of systolic and diastolic ABPM. Compared to OBPM data, ABPM effects are extremely less pronounced. A gradual drop in BP up to 6 months was observed. On the contrary, a slight compensation of BP reduction was observed after the initial drop and the 3, 6 and 12 months follow-ups. RDN may seem to contrary a slight relapse to higher BP was seen.

TCT-494
Renal sympathetic denervation reduces blood pressure in patients with less distinct resistant hypertension
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Background: Hypertension is highly prevalent and a major risk factor for coronary artery disease, myocardial infarction, and stroke. Approximately 5-10% of patients with high blood pressure are resistant to drug treatment. In these patients, reducing blood pressure in select patients with resistant hypertension. Upcoming trials aim to examine its use for more moderate manifestations of resistant hypertension. We sought to determine the impact of broadening the eligibility criteria used in prior RDN studies on the number of patients who could be eligible for RDN, and to compare the clinical characteristics of RDN eligible versus non-eligible hypertensive patients in a fixed population of hypertensive outpatients.
Methods: We applied methodologic criteria from the SYMPLECTHY HTN-3 study to consecutive hypertensive outpatients presenting to an academic cardiology clinic to identify patients eligible for RDN. Inclusion criteria were as follows: age >18 and <80 years old, systolic BP >160 and <180 mmHg, evidence of left ventricular hypertrophy on electrocardiogram, and mean diastolic BP >90 mmHg. All patients were treated with at least 3 antihypertensive drugs, we demonstrate that RD is feasible and significantly reduces BP. To achieve blood pressure treatment goals, RD should therefore be taken into therapeutic consideration also in these patients. Further studies are needed to investigate possible prognostic benefits.

TCT-495
Novel Use of Micro-Infusion Catheter for Site-Specific Delivery of Local Anesthetic Agent for Pain Control in Renal Sympathetic Denervation – First-in-Man Experience
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Background: Current strategy for pain control in renal denervation includes intra-venous administration of medications which is often not fully effective and is associated with potential side effects.
Methods: The Bullfrog Micro-Infusion Catheter (Mercator MedSystems, CA, USA) consists of a perpendicular microcneone which is contained within a semi-rigid polymer actuator. It can be introduced to the target renal artery over a 0.014" guide wire prior to the denervation sequences on each side. A compliant stabilization balloon inflated to provide a force opposite the needle tip for proper seating of the needle, through which anesthetic agent can be delivered to the adventitia and perivascular tissue. A 1:1 mixture of 1% Lidocaine and intravenous contrast was used for localized injection. Adequacy of agent delivery was determined by the presence of circumferential contrast distribution around the renal artery on fluoroscopy.
Results: Site-specific delivery of anesthetic agent was performed in 4 patients undergoing renal denervation (3 radiofrequency-based and 1 ultrasound-based). A fixed population of hypertensive outpatients.

TCT-496
Impact of Criteria Stringency on Eligibility for Renal Denervation in Hypertensive Outpatients
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Background: Renal denervation (RDN) has been shown to be safe and effective in reducing blood pressure in select patients with resistant hypertension. Upcoming trials aim to examine its use for more moderate manifestations of resistant hypertension. We sought to determine the impact of broadening the eligibility criteria used in prior RDN studies on the number of patients who could be eligible for RDN, and to compare the clinical characteristics of RDN eligible versus non-eligible hypertensive patients in a fixed population of hypertensive outpatients presenting to an academic cardiology clinic to identify patients eligible for RDN. Inclusion criteria were as follows: age >18 and <80 years old, systolic BP >160, on 3 anti-hypertensive medications at maximal doses of which one was a diuretic, and creatinine clearance >45. We then examined the impact on eligibility for RDN of including patients with systolic BP>140 and creatinine clearance<30. Patients with renal arterial stenosis, or noncompliance were excluded. Demographic and clinical characteristics of patients were compared between those who did and did not meet criteria for RDN.
Results: We identified 1756 hypertensive outpatients; they were predominantly male (54.9%) and white (53.2%), had a mean age of 66.6±12.6 years, and a BMI of 30.1±10.8 kg/m2. Only 22 of these patients (1.3%) would be eligible for RDN under SYMPLECTHY HTN-3 criteria. Among these patients, 16 (72.2%) were female and 20 (90.9%) were black, with a mean age of 68.9±10.4 and BMI of 33.2±6.8. Expanding eligibility for RDN to include patients with SBP>140 and CrCl<30 lead to a near three-fold increase in eligible patients (53 patients or 3.0%).

TCT-497
Arterial Media Preservation Associated with The Paradise Ultrasound Renal Denervation System: A Next Generation Approach for Treating Resistant Hypertension
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Background: Arterial media preservation associated with The Paradise Ultrasound Renal Denervation System: A Next Generation Approach for Treating Resistant Hypertension