and pulse pressure (SBP/DBP/PP) as well RRI in interlobar arteries, renal function and UAE were measured prior to, and at 3 and 6 months follow-up.

Results: RD reduced SBP, DBP and PP at 3 and 6 months by 22.7±6.6 mmHg, 7.79±7 mmHg, and 15.1±7.5 mmHg (p for all < 0.001), respectively, without significant changes in the control group. SBP reduction after 6 months correlated to SBP baseline values (r = -0.46, p < 0.001). There were no renal artery stenosis, dissections or aneurysms on follow-up. RRI decreased from 0.691 ± 0.01 at baseline to 0.674 ± 0.01 and 0.670 ± 0.01 (p = 0.037/0.017) at 3- and 6-month follow-up, respectively. Mean Cystatin C glomerular filtration rate (GFR) and UAE remained unchanged after RD, however, the number of patients with micro- or macroalbuminuria decreased.

Conclusions: Renal denervation reduced blood pressure, renal resistive index and number of patients with micro- or macroalbuminuria. However, without adversely affecting GFR or renal artery structure within 6 months. RD appears to be a safe and effective therapeutic approach to lower blood pressure in patients with resistant hypertension and is associated with favorable effects on renal hemodynamics and urinary albumin excretion rate.

TCT-14
Effects of renal sympathetic denervation on heart rate and atrioventricular conduction in patients with resistant hypertension
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Background: Renal sympathetic denervation (RDN) reduces sympathetic activity and blood pressure (BP) in patients with resistant hypertension. The present study aimed to investigate the effects of RDN on HR and other electrocardiographic parameters.

Methods: 136 patients aged 62.2 ± 0.8 years (58% male, BP 177 ± 2 / 93 ± 1 mm Hg) with resistant hypertension underwent RDN. BP and a 12-lead electrocardiogram (ECG) were recorded before, 3 months (n = 88) and 6 months (n = 88) after RDN.

Results: After 3 months (3M) and 6 months (6M), systolic BP was reduced by 25.5 ± 2.4 mm Hg (p < 0.0001) and 28.1 ± 3 mm Hg (p < 0.0001). HR at baseline was 66.1 ± 1 beats per minute (bpm) and was reduced by 2.6 ± 0.8 bpm after 3 months (p = 0.001) and 2.1 ± 1.1 bpm after 6 months (p = 0.046). Patients with HR at baseline between 60-71 bpm and ≥71 bpm had a reduction of 2.9 ± 7.6 bpm (p = 0.008) and 9.0 ± 8.6 bpm (p < 0.0001), respectively, whereas in patients with baseline HR ≤60 bpm HR slightly increased after 3 months (2.7 ± 8.4 bpm; p = 0.035). Neither baseline HR nor change of HR correlated with reduction of systolic BP. The PR interval was prolonged by 11.3 ± 2.5 ms (p < 0.0001) and 10.3 ± 2.5 ms (p < 0.0001) at 3 and 6 months after RDN, respectively.

Conclusions: Renal sympathetic denervation reduced heart rate and the PR interval as indicators of cardiac autonomic activity.

TCT-15
Histo-Morphometric Evaluation of 2D Characteristics and 3D Sympathetic Nerve Distribution in Hypertensive vs. Normotensive Patients
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Background: Renal catheter ablation with radiofrequency has been demonstrated to significantly reduce BP in hypertensive pts. However, little is known about the micro-anatomy and three-dimensional distribution (3D) of renal nerves in hypertensive (H) vs. normotensive (N) individuals.

Methods: 32 renal arteries (RA) were harvested from 16 pts (13 male, age range 41-88 years) either H or N. A total of 192 sections of RA were analyzed histologically. To compensate for differences in vessel sizes, analysis was performed by evaluating two “ring areas” that were arranged circumferentially around the vessel and contained within <0.5 mm from the adventitia and >0.5 mm from the adventitia. For three dimensional reconstruction images of serial sections of RA were virtually rendered in Adobe After Effects.

Results: The number of nerves per mm2 within the 0.5 mm ring area was 2.5±1.8 in N vs. 3.5±1.4 in H (p<0.04) while no difference were detected above 0.5 mm (1.5±0.9 in N vs. 1.2±0.7 in H, p=0.3). 3D confirmed the difference between H (Fig. A, yellow–nerves; blue–artery) vs. N (Fig. B). No differences were detected in nerve diameter either within 0.5 mm (47±21 in N vs. 54±15 microns in H, p<0.17) or above 0.5 mm (106±93 in N vs. 130±80 in H, p=0.3). Additionally, the number of nerves did not tend to increase along the length of the artery (proximal = 2.3±0.9; middle = 2.3±1.1; distal = 1.9±1.0 × mm2, p=0.49).

Conclusions: The present study indicates that renal nerves are increased and have a closer proximity to RA in H patients than in N patients and should thus be accessible via percutaneous catheter ablation.