PREVENTION

RENAI SYMPATHETIC DENERVATION SIGNIFICANTLY REDUCES MEAN HEART RATE AND EXERTS A FAVORABLE EFFECT ON ATRIAL AND VENTRICULAR ARRHYTHMIAS IN RESISTANT HYPERTENSIVES

Poster Contributions
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Background: Transluminal renal sympathetic denervation (RSD) reduces blood pressure (BP) in patients with treatment-resistant hypertension. We assessed the effect of RSD on heart rate and cardiac arrhythmias in patients with resistant hypertension.

Methods: Fourteen patients with resistant hypertension underwent ambulatory BP measurements and Holter monitoring at baseline and 1 month after RSD using the EnligHTN ablation catheter (St. Jude Medical, CA, USA). Patients with grade II and above of the Lown-Wolf classification were considered to have complex ventricular arrhythmias while the presence of ≥3 consecutive premature supraventricular contractions was defined as paroxysmal atrial fibrillation (PAF).

Results: One month post RNA, office and 24-hour BP was significantly reduced by 38/14.1 mmHg, p<0.001/0.003 and 18/9.5 mmHg, p<0.001/0.001, respectively. Office, ambulatory and average 24-hour heart rate were significantly reduced by 7 bpm, (p=0.046), 5.5 bpm and 6.7 bpm (p=0.022), respectively. Complex ventricular arrhythmias were present in 5 out of 14 patients with resistant hypertension (1 with non sustained ventricular tachycardia and 4 with ventricular couplets) at baseline but persisted only in 2 of them one month after RSD (2 patients with ventricular couplets). The number of premature ventricular contractions was significantly decreased after RSD (from 2.23/hour to 0.39/hour, p=0.019). Episodes of PAF were detected in 5 of 14 subjects at baseline and in 2 of those patients one month after RSD. The total number of premature supraventricular contractions was also significantly decreased after RSD from 1.62/hour to 0.72/hour (p=0.039). There was no relationship between the observed difference in premature supraventricular and ventricular contractions after RSD and the drop in office and 24-hour BP.

Conclusion: RSD significantly reduces office and ambulatory BP and heart rate and exerts a favorable effect on atrial and ventricular arrhythmias in resistant hypertensives, supporting the concept of the “pleotropic” effects of RSD beyond the BP reduction in this setting.