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Safety and Efficacy of Renal Sympathetic Denervation in Severe Resistant Hypertension among Asians

Renal sympathetic denervation (RSD) is an adjunctive treatment for severe resistant hypertension. However little data exists on its use in Asians. We aimed to describe its safety and efficacy among Asians. Methods: Patients on at least 3 anti-hypertensive medications with office systolic blood pressure (SBP)>159mmHg (>149mmHg in diabetics) were identified. Patients with secondary hypertension, unsuitable anatomy, or estimatedGFR<30ml/min were excluded. Office SBP was evaluated regularly post-RSD. Results: Ten patients of Asian origin underwent RSD between Sep2011-Jan2013(table). No significant complications, or adverse events have occurred. Post-RSD, renal function is unchanged. At 3 and 6-months post-RSD respectively, 4of7 and 3of5 patients had >10mmHg SBP reduction (defined as responders). Among responders, at 3 and 6-months, mean office SBP reduction was 40.5mmHg and 40.3mmHg. For the two patients >12-months post-RSD, the SBP had reduced by 31mmHg (mean). Conclusions: In this largest series of Asian RSD patients in Singapore, RSD appears to be safe and effective in severe resistant hypertensive patients. Longer follow-up and larger patient numbers are needed to further establish its clinical utility.

	Patients undergoing RSD (N=10)
Age at procedure (years)*	61 ± 15
Female	4
Body mass index (kg/m^2)*	29.9 ± 7.8
Type II diabetes mellitus	6
Hypercholesterolaemia	9
Coronary artery disease	3
Baseline serum creatinine (µmol/L)*	97 ± 25
Baseline estimated GFR (mL/min/1.73m^2)*	67 ± 19
Baseline heart rate (bpm)*	73 ± 16
Baseline office SBP (mmHg)*	170 ± 22
Baseline ambulatory SBP (mmHg)*†	168 ± 32
Number of anti-hypertensive medications*	4.9 ± 1
Patients receiving:	
ACE-inhibitor/ARB	10
Beta-blocker	9
Calcium channel blocker	9
Diuretic	7
Spironolactone	4
Alpha blockers	2

* Data presented as mean ± standard deviation. † 8 patients had ambulatory BP monitoring performed before RSD. eGFR = estimated glomerular filtration rate. ACE = angiotensin converting enzyme. ARB = angiotensin-receptor blocker.

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