

## Response to renal denervation in an Indian population: Six-month outcomes in HTN-India



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**Introduction:** Limited data is available on outcomes with renal denervation (RDN) in an Indian patient population. The Single-arm Study of Symplicity™ Renal Denervation System in Patients With Uncontrolled HyperTension in India (HTN-India) study prospectively evaluated the safety and efficacy of renal denervation therapy in an Indian population with uncontrolled hypertension using the Symplicity Flex™ catheter (Medtronic, Inc.).

**Material:** The primary effectiveness endpoint is 6-month change in office systolic blood pressure (SBP). Home BP was also recorded at baseline and 6 months.

**Observations and conclusions:** A total of 28 subjects at 7 sites were consented and 14 subjects were treated with RDN in HTN-India when the study was stopped following the announcement of results of the SYMPPLICITY HTN-3 trial. Baseline office and home SBP was  $177 \pm 17$  and  $160 \pm 11$  mmHg; average age was  $51 \pm 11$  years, 57% were male, 21% had type II diabetes, and average body mass index was  $28 \pm 5$  kg/m<sup>2</sup>. Subjects were prescribed  $4.1 \pm 1.2$  and  $4.5 \pm 1.1$  antihypertensive medications at baseline and 6 months. Both office and home SBP decreased significantly at 6 months ( $-28.5 \pm 23.8$  mmHg, and  $-19.6 \pm 13.6$  mmHg, respectively,  $p \leq 0.01$  for both). No procedure-related adverse events were reported, although there was one non-cardiovascular death (severe burn unrelated to RDN) at 5 months. We conclude that RDN was safe and effective in this Indian population with treatment resistant hypertension. Confirmatory prospective sham controlled trials are warranted.

## The association between central aortic blood pressure indices and severity of coronary artery disease



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### Objectives:

**Primary:** To study the association between central aortic blood pressure indices and coronary artery disease in patients undergoing elective angiography.

**Secondary:** (a) To study whether any association exists between central aortic pressure indices and the incidence of major adverse cardiovascular events (MACE) in the same patients during a 6-month follow up period. (b) To study whether any association exists between the central aortic pressures and peripheral pressures.

**Methods:** We conducted a prospective observational study in consecutive patients undergoing coronary angiography. Central and peripheral pressures were invasively recorded and coronary artery disease (CAD) classified into obstructive and non-obstructive group. CAD severity was graded using the Gensini score and subjects were divided into tertiles. Patients were followed up and the role of central aortic pressure indices in the prediction of cardiovascular events were analyzed.

**Results:** A total of 623 patients were enrolled. Central pulsatility was found to increase across the first 2 Gensini tertiles with a decrease in the third tertile, probably a reflection of increasing age. No significant association was noted between the central aortic pressures and MACE, with short follow up time being a major limitation. A positive correlation was found between the central and peripheral mean pressures and pulse pressures.

**Conclusions:** Of the various central aortic pressure indices studied, central pulsatility was found to most closely associated with the severity of CAD. Studies with longer follow up are needed to assess the definite role of central aortic pressure indices with cardiovascular outcomes.

## Diagnosis and treatment of orthostatic hypertension



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**Background:** Orthostatic hypertension is defined as an increase in blood pressure upon assuming an upright posture.

**Method:** Over the last 4 years, 50 patients with average age between 50 and 70 years and with long standing hypertension and diabetes (>10 years) complained of uncontrolled hypertension with more than 2 antihypertensives including one diuretic plus ARBs, ACEIs, B blockers and calcium channel and B blockers in various combinations and optimal tolerated doses, poorly controlled diabetes.

And symptom of intense throbbing headache which worsened on sitting or standing from supine posture and got relieved partially on lying down. BP of all those patients were found to be significantly higher on sitting and standing. All patients were initially put on 24 h ambulatory BP monitoring. All were found to have significantly higher sitting and standing BP. Patients were then screened for all causes of secondary hypertension. CT brain was done to rule out neurological cause of headache. Finally, minimally invasive hemodynamic monitoring was done.

**Result:** Lab reports showed an average HbA1C 7.5–8.0, GFR of 50–60 ml/min/1.73 m<sup>2</sup>. Hemodynamic monitoring revealed marked raised systemic vascular resistance (SVR) suggesting marked alpha adrenergic receptor hypersensitivity. Patients responded to centrally acting sympatholytic drug clonidine and alpha antagonist prazosin.

**Conclusion:** Orthostatic hypertension if diagnosed accurately can be successfully treated with central sympatholytics and alpha antagonists with good BP control, reduction of postural variation of BP, and loss of symptoms.

## Impact of ambulatory blood pressure monitoring in hypertensive patients



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**Background:** Hypertension remains the most common, readily identifiable, and reversible risk factor for various cardiovascular diseases. ABPM has advantages compared to office BP and is mainly used to diagnose white coat hypertension, masked