**RENAL DENERVATION-STATE OF THE ART**

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Systemic hypertension is a major burden to the individual and society. Its association with major adverse cardiac and cerebral events and favorable effects of antihypertensive therapy are undisputed. However, despite multidrug therapy, blood pressures are frequently suboptimally controlled. Moreover, adverse drug effects often interfere with patients’ lifestyles and impact compliance. Therefore, alternative treatment strategies have been explored. Most recently, attention has been redirected to the sympathetic nervous system in the pathogenesis of hypertension. In addition, interruption of the renal sympathetic nervous system in humans with resistant hypertension has been studied with promising results. Pronounced blood pressure reductions were reported in a randomized trial comparing catheter-based renal denervation in addition to antihypertensive therapy to antihypertensive therapy alone. On a physiological basis, renal sympathetic denervation may have beneficial effects on a number of other conditions beyond essential hypertension such as insulin resistance and diabetes, congestive heart failure and obstructive sleep apnea. Several novel devices designed for either non-invasive or percutaneous renal denervation are undergoing investigation. This presentation serves to provide the attendee with an overview of the anatomy and physiology of the renal sympathetic nervous system, the rational for manipulating the sympathetic nervous system and the results of therapeutic renal sympathetic denervation. In addition to the currently available device, newer investigational concepts and devices will be briefly presented.