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CLINICAL AND COST EFFECTIVENESS OF RENAL DENERVATION WITH THE VESSIX SYSTEM IN PATIENTS WITH RESISTANT HYPERTENSION

Poster Contributions

Hall C

Saturday, March 29, 2014, 3:45 p.m.-4:30 p.m.

Session Title: Renal Denervation and Critical Limb Ischemia: The Hottest Topics in Vascular Medicine

Abstract Category: 31. Vascular Medicine: Endovascular Therapy

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Background: The prevalence of hypertension is 32% in the US; 8.9% of these patients may suffer from resistant hypertension (RHT), defined as uncontrolled blood pressure, despite >3 antihypertensive medications at optimal doses. RHT results in high medical costs associated with increased cardiovascular (CVD) events and end-stage renal disease (ESRD). This analysis assessed the clinical and economic impact of the Vessix System for renal denervation (RDN) compared to best medical therapy (BMT) in patients with RHT.

Methods: A Markov model was developed comparing RDN to BMT. Major adverse clinical outcomes associated with elevated systolic blood pressure (SBP) were modeled: Coronary heart disease, stroke, congestive heart failure, ESRD, and death. The patient profile in the model was similar to that in the Vessix REDUCE HTN trial: baseline SBP 182mm Hg, mean age 59, and 27% diabetic, mean office based SBP reduction of 24.6 and 29.6 mm Hg at 6 and 12 months, respectively. These patients have a 36% risk of CVD over 10 years. The impact of SBP reduction on CVD events and ESRD was derived using relative risks from published literature and costs estimates from US DRG and CPT costs.

Results: RDN increased life expectancy and was cost-effective at both 10 years and lifetime.

Conclusions: This model suggests RDN is a cost effective strategy with mortality improvement for RHT compared to BMT alone. These results should be considered when developing policy and establishing the value for this minimally invasive technology.

Table 1. Results of Cost Effectiveness Analysis at 10 Years and Lifetime

	10 Years	Lifetime
Incremental costs	\$6,811	\$3,724
Adverse events avoided	0.37	0.53
Incremental life years gained	0.36	1.41
Incremental cost per life years gained	\$18,819	\$2,637