

**Medical Coverage Policy** | Radiofrequency Ablation of the Renal Sympathetic Nerves as a Treatment for Resistant Hypertension



**EFFECTIVE DATE:** 04|02|2013  
**POLICY LAST UPDATED:** 12|16|2014

## OVERVIEW

Radiofrequency ablation (RFA) of the renal sympathetic nerves is a nonpharmacologic treatment for hypertension and has been proposed as a treatment option for patients with resistant hypertension.

## PRIOR AUTHORIZATION

Not applicable

## POLICY STATEMENT

### BlueCHiP for Medicare and Commercial

Radiofrequency ablation of the renal sympathetic nerves is considered not medically necessary for the treatment of resistant hypertension as there is insufficient peer-reviewed scientific literature to demonstrate that the procedure is effective.

## MEDICAL CRITERIA

None

## BACKGROUND

### Resistant Hypertension

Hypertension is a widely prevalent condition, which is estimated to affect approximately 30% of the population in the United States.<sup>1</sup> It accounts for a high burden of morbidity related to strokes, ischemic heart disease, kidney disease, and peripheral arterial disease. Resistant hypertension is defined as elevated BP, despite treatment with at least 3 antihypertensive agents at optimal doses. Resistant hypertension is also a relatively common condition, given the large number of individuals with hypertension. In large clinical trials of hypertension treatment, up to 20% to 30% of participants meet the definition for resistant hypertension, and in tertiary care hypertension clinics, the prevalence has been estimated to be 11% to 18%.<sup>1</sup> Resistant hypertension is associated with a higher risk for adverse outcomes such as stroke, myocardial infarction (MI), heart failure, and kidney failure.

There are a number of factors that may contribute to uncontrolled hypertension, and these should be considered and addressed in all patients with hypertension before labeling a patient resistant. These include nonadherence to medications, excessive salt intake, inadequate doses of medications, excess alcohol intake, volume overload, drug-induced hypertension, and other forms of secondary hypertension.<sup>2</sup> Also, sometimes it is necessary to address comorbid conditions, ie, obstructive sleep apnea, to adequately control BP.

Treatment for resistant hypertension is mainly intensified drug therapy, sometimes with the use of nontraditional antihypertensive medications such as spironolactone and/or minoxidil. However, control of resistant hypertension with additional medications is often challenging and can lead to high costs and frequent adverse effects of treatment. As a result, there is a large unmet need for additional treatments that can control resistant hypertension. Nonpharmacologic interventions for resistant hypertension include modulation of the baroreflex receptor and/or RF denervation of the renal nerves.

## **RF Denervation of the Renal Sympathetic Nerves**

Increased sympathetic nervous system activity has been linked to essential hypertension. Surgical sympathectomy has been shown to be effective in reducing BP but is limited by the side effects of surgery and was largely abandoned after effective medications for hypertension became available. The renal sympathetic nerves arise from the thoracic nerve roots and innervate the renal artery, the renal pelvis, and the renal parenchyma. RFA is thought to decrease both the afferent sympathetic signals from the kidney to the brain and the efferent signals from the brain to the kidney. This decreases sympathetic activation, decreases vasoconstriction, and decreases activation of the renin-angiotensin system.<sup>3</sup>

The procedure is performed percutaneously with access at the femoral artery. A flexible catheter is threaded into the renal artery and controlled energy source, most commonly low-power radiofrequency (RF) energy is delivered to the arterial walls where the renal sympathetic nerves are located. Once adequate RF energy has been delivered to ablate the sympathetic nerves, the catheter is removed.

Radiofrequency ablation (RFA) of the renal sympathetic nerves is a nonpharmacologic treatment for hypertension and has been proposed as a treatment option for patients with resistant hypertension. There are currently no devices that have Food and Drug Administration approval for this indication. This is an active area of research, with numerous ongoing randomized controlled trials (RCTs).

At this time, there is no evidence that reports improvements in health outcomes as a result of treatment with RFA of the renal sympathetic nerves. Potential complications of this procedure include vascular access problems, perforation of the renal artery, and renal artery stenosis, but rates of complications have not been well-established. This evidence is insufficient to determine whether health outcomes are improved, and therefore radiofrequency ablation of the renal sympathetic nerves is considered not medically necessary.

### **COVERAGE**

Benefits vary between groups/contracts. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for applicable surgery services and services not medically necessary benefits/coverage.

### **CODING**

#### **BlueCHiP for Medicare and Commercial**

The following CPT codes are considered not medically necessary:

**0338T**

**0339T**

### **RELATED POLICIES**

None

### **PUBLISHED**

Provider Update Feb 2015

Provider Update Jun 2013

### **REFERENCES**

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