

Evidence Discussion (PVD 6.6)

Renovascular Hypertension

The American Heart Association 2017 guidelines on hypertension estimate renovascular disease to be the source of 5-34% of all cases.¹ Multiple studies have shown that intervention is not more effective than medical therapy in most cases as reviewed by the KDIGO conference in 2022; however, it is noted that these recommendations continue to evolve.² While duplex ultrasound is the preferred imaging modality, patients with compromised renal function or technical limitations due to body habitus may require CT/MR imaging for monitoring.³

Current recommendations for renal artery screening in the setting of hypertension refractory to medical therapy include the following:

- Individual is adherent to full doses of three blood pressure medications (including a diuretic) yet has still not achieved goal
- Sudden and persistent worsening of previously controlled hypertension
- Onset of hypertension younger than 30 years of age
- Malignant hypertension with coexistent evidence of acute end-organ damage (acute renal failure, new visual or neurological disturbance and/or advanced retinopathy) or flash pulmonary edema
- Individuals who develop hypertension ($\geq 140/90$) within the first 20 weeks of pregnancy when hypertension persists >12 weeks post-partum o New or worsening renal function/increasing creatinine (especially after the administration of an ACE inhibitor or with angiotensin receptor blocking agent)

Fibromuscular dysplasia carries a higher risk of concomitant renal and carotid artery involvement. Screening of both anatomic regions is indicated upon diagnosis.

Post-intervention imaging with CT/MR imaging at standard 1/6/12 month intervals followed by annual imaging to assess for stent patency follow standard recommendations for non-coronary interventions. Additional surveillance is not indicated in the absence of symptoms.

References

1. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension. 2018;71(6). doi:10.1161/hyp.000000000000065.
2. Hicks CW, Clark TWI, Cooper CJ, et al. Atherosclerotic Renovascular Disease: A KDIGO (Kidney Disease: Improving Global Outcomes) Controversies Conference. Am J Kidney Dis. 2022;79(2):289-301. doi:10.1053/j.ajkd.2021.06.025.

3. Harvin HJ, Verma N, Nikolaidis P, et al. ACR Appropriateness Criteria® Renovascular Hypertension. J Am Coll Radiol. 2017;14(11). doi:10.1016/j.jacr.2017.08.040.