What’s the best approach to renal artery stenosis?

Medical management? Angioplasty? The evidence indicates that neither is superior to the other for renal outcomes

- What treatment strategy is most effective at reducing mortality?
- What patient characteristics are associated with increased mortality?
- What are the indications for stent placement?

The answers to these questions are summarized below and in the Comparative Effectiveness Review: Comparative Effectiveness of Management Strategies for Renal Artery Stenosis, funded and published by Agency for Healthcare Research and Quality (AHRQ). The review summarizes the current evidence concerning the effectiveness and safety of angioplasty with stent placement compared with medical therapy in the treatment of atherosclerotic renal artery stenosis.

### Practice recommendations

**GRADE A RECOMMENDATIONS**

- Blood pressure measurements improve after angioplasty—particularly in patients with bilateral disease.
- There is no difference in kidney function outcomes when medical and angioplasty treatments are compared.
- Worse baseline kidney function is associated with increased mortality and worse blood pressure measurements after angioplasty.

**GRADE B RECOMMENDATIONS**

- Patients with bilateral stenosis have larger decreases in blood pressure readings after angioplasty than with medical treatment. No such difference was found between treatment groups in patients with unilateral disease.
- There is no difference in mortality and cardiovascular event rates when medical and angioplasty treatments are compared.
- There is no difference in blood pressure and kidney outcomes between angioplasty patients with or without stent placement.

**GRADE C RECOMMENDATIONS**

- The evidence doesn’t support one treatment approach over the other (angioplasty with stent vs aggressive medical therapy) for the general population with atherosclerotic renal artery stenosis.
- The evidence is inconclusive about relative adverse events or complications from angioplasty compared with medical treatment.

**Strength of recommendation (SOR)**

A Good-quality patient-oriented evidence
B Inconsistent or limited-quality patient-oriented evidence
C Consensus, usual practice, opinion, disease-oriented evidence, case series

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The government is sponsoring a more definitive trial to further explore the question of angioplasty vs medical management.

The review team accepted the patient population of original authors, without clearly defining the level of renal artery stenosis. “The population of interest for this report is adults with atherosclerotic renal artery stenosis that is of sufficient severity to warrant aggressive management, either due to resistant hypertension, evidence of kidney damage, or the high likelihood of poor outcomes.” The team considered the following outcomes: blood pressure control, preservation of kidney function, incidence of flash pulmonary edema, and survival rates. Adverse events associated with therapies were also considered.

A review of nearly 40 years of research

The Tufts–New England Medical Center Evidence-Based Practice Center was commissioned by AHRQ to conduct the review. A comprehensive search of the literature included Medline from 1966 to September 6, 2005. A technical expert panel held teleconferences to refine key questions and define parameters for review of the evidence. Researchers gave priority to meta-analyses and systemic reviews. Abstracts of research presented at conferences and symposiums were not considered adequate to be considered. There were 76 references.

Quality assessment of the literature was designated by a 3-category grading system (A—good, B—fair/moderate, and C—poor). For our purposes, the evidence rating is updated to comply with the SORT taxonomy.

A search of the literature did not identify any other guidelines for comparison.

Source for this guideline


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Reference