



Effective Health Care

Prevention of Contrast-Induced Nephropathy

Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Prevention of contrast-induced nephropathy will go forward for refinement as a systematic review. The scope of this topic, including populations, interventions, comparators, and outcomes, will be further developed in the refinement phase.
- When key questions have been drafted, they will be posted on the AHRQ Web site and open for public comment. To sign up for notification when this and other Effective Health Care (EHC) Program topics are posted for public comment, please go to <http://effectivehealthcare.ahrq.gov/index.cfm/join-the-email-list1/>.

Topic Description

Nominator: Individual

Nomination Summary: The nominator questions the comparative renal safety of different contrast media used in radiographic imaging as well as the effectiveness of different strategies to prevent contrast-induced nephropathy.

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Population(s): Patients undergoing interventional or diagnostic procedures requiring the use of contrast media; subgroups of interest include patients with renal dysfunction or diabetes.

Intervention(s): Choice of contrast media (low-osmolarity vs. iso-osmolar or high-osmolar contrast media), prophylactic measures, including hydration methods, pharmacologic strategies (e.g., Fenoldpam, Mannitol, Theophylline, natriuretic peptides), and renal replacement strategies (e.g., hemofiltration, hemodialysis)

Comparator(s): Low-osmolarity vs. iso-osmolar or high-osmolar contrast media, IV hydration vs. oral fluids, sodium chloride vs. sodium bicarbonate, use vs. nonuse of renal replacement strategies, hydration with and without pharmacologic agents

Outcome(s): Rate of contrast-induced nephropathy, surrogate outcomes of biochemical evidence of organ function (serum creatinine or creatinine clearance), mortality, rate of renal recovery, adverse effects of treatment.

Key Questions from Nominator:

1. What is the comparative renal safety of different contrast media used in radiographic imaging?
2. What is the comparative efficacy of different therapies in preventing contrast-induced nephropathy?

Considerations

- The topic meets all EHC Program selection criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- The burden of contrast-induced nephropathy (CIN) is likely to increase. The most important risk factor for CIN, chronic kidney disease, is rising, driven in part by the increasing prevalence of diabetes and hypertension. In addition, with the aging population, more elderly patients are undergoing contrast-enhanced imaging. Based on this increasing prevalence, a lack of up-to-date comprehensive guidelines and systematic reviews, as well as the extensive and active literature base on this subject, it appears that a review on the prevention of CIN would have impact at this time.