



Effective Health Care

Troponin Cardiac Marker Interpretation During Renal Function Impairment Nomination Summary Document

Results of Topic Selection Process & Next Steps

- Troponin cardiac marker interpretation during renal function impairment will go forward for refinement as a systematic review via the AHRQ Evidence-based Practice Center (EPC) Program. 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. To sign up for notification when this and other EPC Program topics are posted, please go to https://subscriptions.ahrq.gov/service/multi_subscribe.html?code=USAHRQ.

Topic Description

Nominator: Health care professional association

Nomination Summary: The nominator questions whether the cardiac biomarker troponin is influenced by renal function and, if so, how troponin markers can be interpreted in patients with renal function impairment.

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Population(s): Individuals diagnosed with, or at risk for, acute coronary syndromes (ACS) who have some degree of renal function impairment

Intervention(s): Measurement of troponin levels

Comparator(s): Clinical diagnosis based primarily on medical history and physical examination (may also include evaluation of other test results)

Outcome(s): Diagnostic and prognostic accuracy of troponin for ACS

Key Questions from Nominator:

1. In patients diagnosed with an acute coronary syndrome, are troponin (TnI and/or TnT) results affected by renal function impairment?
2. Do specific TnI assays or specific troponin (TnI vs TnT) types confer different degrees of risk in patients diagnosed with an acute coronary syndrome?
3. In patients diagnosed with an acute coronary syndrome, what degree of renal function impairment will affect troponin results?
4. Do elevated troponin levels predict acute coronary syndrome risk in asymptomatic renal function-impaired patients without history of coronary disease?

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 cardiac biomarker troponin is used to support/confirm, diagnose, and provide prognostic information in acute coronary syndromes (ACS). Interpretation of troponin is complicated when the patient has some degree of renal impairment. Troponin values are known to be affected by renal impairment, but the amount of this effect is uncertain and thought to vary by both the specific troponin assay and the degree of renal impairment. The current clinical standard of care is to admit for observation and further workup any patient with elevated troponin levels regardless of their renal status, which can result in unnecessary hospitalizations and testing.
- Due to the lack of guidance on how to interpret troponin scores in patients with renal disease, a systematic review on this topic would have a significant impact by aiding clinicians in the diagnosis and treatment of ACS in those with renal function impairment.