INAHTA Briefs

Issue 2004/08

Title **The Organization of Troponin Testing in Acute Coronary Syndromes**

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Reference Craig et al. 2004 Health Technology Assessment Report 4, Glasgow: NHS Quality Improvement Scotland. ISBN 1–903961–42–4

Aim

To determine whether troponin testing (TT) is clinically and cost effective in managing patients presenting with acute coronary syndromes (ACS) and, if so, to consider how such a service could be optimally organized for Scotland.

Conclusions and results

Clinical evidence strongly supports the conclusion that troponin is superior to other cardiac enzyme tests in detecting myocardial damage. There is evidence that measuring cardiac troponin to rule out myocardial damage is only effective at least 12 hours after the onset of symptoms. Evidence also suggests that TT on admission to hospital in cases of suspected ACS identifies about 50% of patients who will have a positive troponin result 12 hours later. Current evidence indicates that few of the quantitative troponin point-of-care analyzers, and none of the qualitative troponin point-of-care readers, are sufficiently sensitive and precise to assess risk or rule out myocardial necrosis.

A cost-consequence analysis showed that if the variable costs of conducting point-of-care tests are less than £8.40, it would be cost effective to measure troponin on admission in patients with symptoms suggestive of ACS but with no high-risk clinical or ECG markers.

Recommendations

- Troponin testing should be available in all Scottish hospitals receiving patients with suspected ACS, including patients with ST elevation myocardial infarction.
- Troponin should be used in conjunction with clinical and ECG risk markers to inform diagnostic decisions and to assess risk and suitability for medical or invasive treatment in patients with suspected or diagnosed ACS.
- Timing and diagnostic value of TT depends on the clinical characteristics of patients.
- A troponin testing service should meet local needs, may be laboratory based or provided at the point of care, and will depend on local hospital requirements.
- Protocols should be developed/applied to ensure appropriate and optimal use of TT and equitable access to catheterization facilities.
- Health professionals should explain to patients/carers; the diagnosis (using consistent terms) and how it was made, treatment options, actions to take if symptoms return after discharge, and should check that patients understand the information. These discussions should be supported by written information.
- Consensus on the definition of myocardial infarction is urgently required.

Methods

The scientific literature was systematically searched to identify evidence (e.g. submissions from experts, professional and patient groups, manufacturers, and focus groups.) Evidence was critically appraised. Cost-consequence analyses were performed, and an economic model was constructed to inform the organization of a cost-effective TT service.

Further research/reviews required

Further research should investigate the effect of replacing ‘any biochemical marker’ by troponin in existing scoring systems and estimating the interaction between troponin level and treatment with small molecule glycoprotein inhibitors licensed for medical management of patients with non-ST elevation ACS.

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