High-sensitivity troponin assays for the early rule-out or diagnosis of acute myocardial infarction in people with acute chest pain: a systematic review and cost-effectiveness analysis

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Plain English summary

hs-cTn assays for acute myocardial infarction in people with acute chest pain

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Plain English summary

Heart disease is a leading cause of death in the UK, with myocardial infarction (MI) (heart attack) accounting for approximately 5% of all deaths recorded in 2011. Many people attend hospital with chest pain and suspected MI; chest pain has been reported as the most common cause of hospital admissions in the UK, and 2011–12 statistics showed that it accounted for approximately 5% of all emergency admissions. It is important to diagnose people who are suspected of having a MI as early as possible in order to ensure quick and effective treatment. However, only around 20% of emergency admissions for chest pain will actually have a MI and there are many other possible causes of chest pain (e.g. gastro-oesophageal disorders, muscle pain, anxiety or stable ischaemic heart disease). Tests that can quickly tell which patients do not have MI could therefore avoid unnecessary hospital admissions and anxiety for many people.

This assessment aimed to determine the clinical effectiveness and cost-effectiveness of high-sensitivity troponin (Tn) tests, used as single tests or repeated over a short time, for diagnosing or ruling out MI in people who present to hospital with chest pain. We found that high-sensitivity Tn tests may be able to rule out MI within the 4-hour UK NHS emergency department target. Health-economic analyses indicated that high-sensitivity tests may be cost-effective compared with standard Tn tests, which require repeat testing at 10–12 hours.

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