



Canadian Agency for  
Drugs and Technologies  
in Health

## Health Technology Inquiry Service

Health Technology Assessment HTA



**TITLE: Point of Care Troponin I and Myoglobin Testing in a Pre-hospital Setting: Clinical Effectiveness and Guidelines**

**DATE:** 13 July 2010

### **RESEARCH QUESTIONS:**

1. What is the clinical effectiveness of point-of-care testing for cardiac troponin I and myoglobin in a pre-hospital setting?
2. What are the guidelines for the use of point-of-care testing for cardiac troponin I and myoglobin in a pre-hospital setting?

### **METHODS:**

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 6, 2010), University of York Centre for Reviews and Dissemination (CRD) databases, EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between Jan 1, 2005 and Jun 9, 2010. No filters were applied to limit the retrieval by study type. Internet links were provided, where available.

### **RESULTS:**

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials (RCTs), non-randomized studies, and evidence-based guidelines.

Three non-randomized studies and one evidence-based guideline were identified pertaining to the clinical effectiveness and use of point-of-care testing for cardiac troponin I and myoglobin in a pre-hospital setting. No relevant health technology assessment reports, systematic reviews, meta-analyses, or RCTs were found. Additional articles of potential interest can be found in the appendix.

**Disclaimer:** The Health Technology Inquiry Service (HTIS) is an information service for those involved in planning and providing health care in Canada. HTIS responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. HTIS responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

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**Health technology assessments**

No literature identified.

**Systematic reviews and meta-analyses**

No literature identified.

**Randomized controlled trials**

No literature identified.

**Non-randomized studies**

1. Floriano PN, Christodoulides N, Miller CS, Ebersole JL, Spertus J, Rose BG, et al. Use of saliva-based nano-biochip tests for acute myocardial infarction at the point of care: a feasibility study. Clin Chem. 2009 Aug;55(8):1530-8. [PubMed: PM19556448](#)
2. Management of Near-Patient Cardiac Markers Testing in a Mobile Intensive Care Unit. Point of Care. 2007;6(2):120-4.
3. Di SF, Lovero R, Leone M, De SR, Ruggieri V, Varraso L, et al. Integration between the tele-cardiology unit and the central laboratory: methodological and clinical evaluation of point-of-care testing cardiac marker in the ambulance. Clin Chem Lab Med. 2006;44(6):768-73. [PubMed: PM16729867](#)

**Guidelines and recommendations**

4. The National Academy of Clinical Biochemistry. Biomarkers of acute coronary syndromes and heart failure [Internet]. Christenson RH, ed. Washington (DC): American Association for Clinical Chemistry, Inc; 2007. [cited 2010 Jul 9]. (Laboratory medicine practice guidelines). Available from: [http://www.aacc.org/SiteCollectionDocuments/NACB/LMPG/ACS\\_PDF\\_online.pdf](http://www.aacc.org/SiteCollectionDocuments/NACB/LMPG/ACS_PDF_online.pdf)  
*Note: See page 55*

**PREPARED BY:**

Health Technology Inquiry Service

Email: [htis@cadth.ca](mailto:htis@cadth.ca)

Tel: 1-866-898-8439

**APPENDIX – FURTHER INFORMATION:**

**Non-randomized studies**

5. Ecollan P, Collet JP, Boon G, Tanguy ML, Fievet ML, Haas R, et al. Pre-hospital detection of acute myocardial infarction with ultra-rapid human fatty acid-binding protein (H-FABP) immunoassay. *Int J Cardiol.* 2007 Jul 31;119(3):349-54. [PubMed: PM17097752](#)

**Guidelines and recommendations**

6. Havard L. Evidence review: Fatty acid binding protein as a marker for cardiac events [Internet]. London: The Centre for Evidence-based Purchasing (CEP); 2010. [cited 2010 Jul 9]. (CEP10005). Available from: <http://www.cep.dh.gov.uk/ShowDocument.ashx?id=476&i=true>  
*Note: See page 29 and Appendix 1*

**Review articles**

7. Friess U, Stark M. Cardiac markers: a clear cause for point-of-care testing. *Anal Bioanal Chem.* 2009 Mar;393(5):1453-62. [PubMed: PM19148628](#)

**Additional references**

8. Lewandrowski K. Point-of-care testing for cardiac markers in acute coronary syndromes and heart failure. *Clin Lab Med.* 2009 Sep;29(3):561-71. [PubMed: PM19840688](#)