

# Low-Probability Acute Coronary Syndrome

Kathleen A. Hosmer  
Chadwick D. Miller

## REFERENCES

1. Lindsell CJ, Anantharaman V, Diercks D, et al: The Internet Tracking Registry of Acute Coronary Syndromes (i\*trACS): a multicenter registry of patients with suspicion of acute coronary syndromes reported using the standardized reporting guidelines for emergency department chest pain studies. *Ann Emerg Med* 48: 666, 2006. [PMID: 17014928]
2. Goldstein JA, Gallagher MJ, O'Neill WW, et al: A randomized controlled trial of multi-slice coronary computed tomography for evaluation of acute chest pain. *J Am Coll Cardiol* 49: 863, 2007. [PMID: 17320744]
3. Mitchell AM, Garvey JL, Chandra A, et al: Prospective multicenter study of quantitative pretest probability assessment to exclude acute coronary syndrome for patients evaluated in emergency department chest pain units. *Ann Emerg Med* 47: 447, 2006. [PMID: 16631984]
4. Miller CD, Lindsell CJ, Khandelwal S, et al: Is the initial diagnostic impression of "non-cardiac chest pain" adequate to exclude cardiac disease? *Ann Emerg Med* 44: 565, 2004. [PMID: 15573030]
5. Hollander JE, Robey JL, Chase MR, et al: Relationship between a clear-cut alternative noncardiac diagnosis and 30-day outcome in emergency department patients with chest pain. *Acad Emerg Med* 14: 210, 2007. [PMID: 17242387]
6. Miller CD, Banerjee A, Mahaffey KW, et al: Treatment and outcomes of patients with evolving myocardial infarctions: experiences from the SYNERGY trial. *Eur Heart J* 28: 1079, 2007. [PMID: 17405770]
7. Miller CD, Lindsell CJ, Fermann GJ, et al: After the first negative troponin: distinguishing patients with evolving myocardial infarctions from those without infarction in emergency department patients with chest pain. *Ann Emerg Med* 46: 114, 2005. [PMID: 16046939]
8. Swap CJ, Nagurney JT: Value and limitations of chest pain history in the evaluation of patients with suspected acute coronary syndromes. *JAMA* 294: 2623, 2005. [PMID: 16304077]
9. Han JH, Lindsell CJ, Storrow AB, et al: The role of cardiac risk factor burden in diagnosing acute coronary syndromes in the emergency department setting. *Ann Emerg Med* 49: 145, 2007. [PMID: 17145112]
10. Sicari R, Palinkas A, Pasanisi EG, et al: Long term survival of patients with chest pain syndrome and angiographically normal or near normal coronary arteries: the additional prognostic value of dipyridamole echocardiography test. *Eur Heart J* 26: 2136, 2005. [PMID: 16014645]
11. Nerenberg RH, Shofer FS, Robey JL, et al: Impact of a negative prior stress test on emergency physician disposition decision in ED patients with chest pain syndromes. *Am J Emerg Med* 25: 39, 2007. [PMID: 17157680]
12. Jneid H, Anderson JL, Wright RS, et al: 2012 ACCF/AHA Focused Update of the Guideline for the Management of Patients with Unstable Angina/Non-ST Elevation Myocardial Infarction (Updating the 2007 Guideline and Replacing the 2011 Focused Update): a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation* 126: 875, 2012. [PMID: 22800849]
13. Antman EM, Abre DT, Armstrong PW, et al: ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of patients with acute myocardial infarction). *J Am Coll Cardiol* 44: e1, 2004. [PMID: 15358047]
14. Bhardwaj R: Chest pain, dynamic ECG changes and coronary artery disease. *J Assoc Physicians India* 55:556, 2007. [PMID: 18019795]
15. Kline JA, Johnson CL, Pollack CV, Jr., et al: Pretest probability assessment derived from attribute matching. *BMC Med Inform Decis Mak* 5: 26, 2005. [PMID: 16095534]
16. Marsan RJ, Jr., Shaver KJ, Sease KL, et al: Evaluation of a clinical decision rule for young adult patients with chest pain. *Acad Emerg Med* 12: 26, 2005. [PMID: 15635134]
17. Backus BE, Six AJ, Kelder JC, et al: Chest pain in the emergency room: a multicenter validation of the HEART score. *Crit Pathw Cardiol* 9: 164, 2010. [PMID: 20802272]
18. Backus BE, Six AJ, Kelder JC, et al: A prospective validation of the HEART score for chest pain patients at the emergency department. *Int J Cardiol* 168: 2153, 2013. [PMID: 23465250]
19. Mahler SA, Hiestand BC, Goff DC, et al: Can the HEART score safely reduce stress testing and cardiac imaging in patients at low risk for major adverse cardiac events? *Crit Pathw Cardiol* 10: 128, 2011. [PMID: 21989033]
20. Antman EM, Cohen M, Bernink PJ, et al: The TIMI risk score for unstable angina/non-ST elevation MI: a method for prognostication and therapeutic decision making. *JAMA* 284: 835, 2000. [PMID: 10938172]
21. Than M, Cullen L, Aldous S, et al: 2-Hour accelerated diagnostic protocol to assess patients with chest pain symptoms using contemporary troponins as the only biomarker: the ADAPT trial. *J Am Coll Cardiol* 59: 2091, 2012. [PMID: 22578923]
22. Than M, Aldous S, Lord SJ, et al: A 2-hour diagnostic protocol for possible cardiac chest pain in the emergency department: a randomized clinical trial. *JAMA Intern Med* 174: 51, 2014. [PMID: 24100783]
23. Pollack CV, Braunwald E: 2007 Update to the ACC/AHA guidelines for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction: implications for the emergency physician. *Ann Emerg Med* 51: 591, 2008. [PMID: 18037193]
24. Fesmire FM, Christenson RH, Fody EP, et al: Delta creatine kinase-MB outperforms myoglobin at two hours during the emergency department identification and exclusion of troponin positive non-ST-segment elevation acute coronary syndromes. *Ann Emerg Med* 44: i12, 2004. [PMID: 15226704]
25. Sallach SM, Nowak R, Hudson MP, et al: A change in serum myoglobin to detect acute myocardial infarction in patients with normal troponin I levels. *Am J Cardiol* 94: 864, 2004. [PMID: 15464666]
26. Amsterdam EA, Kirk JD, Diercks DB, et al: Exercise testing in chest pain units: rationale, implementation, and results. *Cardiol Clin* 23: 503, 2005. [PMID: 16278120]
27. <http://www.acc.org/qualityandscience/clinical/guidelines/exercise/dirindex.htm> (Gibbons RJ, Balady GJ, Bricker JT, et al: ACC/AHA 2002 guideline update for exercise testing: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines [Committee on Exercise Testing], 2002.) Accessed August 5, 2014.
28. Litt HI, Gatsonis C, Snyder B, et al: CT angiography for safe discharge of patients with possible acute coronary syndromes. *N Engl J Med* 366: 1393, 2012. [PMID: 22449295]
29. Hoffmann U, Truong QA, Schoenfeld DA, et al: Coronary CT angiography versus standard evaluation in acute chest pain. *N Engl J Med* 367: 299, 2012. [PMID: 22830462]
30. Hulten EA, Carbonaro S, Petrillo SP, et al: Prognostic value of cardiac computed tomography angiography. *J Am Coll Cardiol* 57: 1237, 2011. [PMID: 21145688]
31. Lateef F, Storrow AB, Malone K, et al: Comparison of a 6-hour and 9-hour protocol for evaluation of moderate-to-low risk chest pain patients in an emergency department diagnostic unit. *Singapore Med J* 42: 52, 2001. [PMID: 11358190]
32. Tatum JL, Jesse RI, Kontos MC, et al: Comprehensive strategy for the evaluation and triage of the chest pain patient. *Ann Emerg Med* 29: 116, 1997. [PMID: 8998090]
33. Fesmire FM, Hughes AD, Fody EP, et al: The Erlanger chest pain evaluation protocol: a one year experience with serial 12-lead ECG monitoring, two-hour delta serum marker measurements, and selective nuclear stress testing to identify and exclude acute coronary syndromes. *Ann Emerg Med* 40: 584, 2002. [PMID: 12447334]
34. Richards D, Meshkat N, Chu J, et al: Emergency department patient compliance with follow-up for outpatient exercise stress testing: a randomized controlled trial. *Can J Emerg Med Care* 9: 435, 2007.
35. Banks AD, Malone RE: Accustomed to enduring: experiences of African-American women seeking care for cardiac symptoms. *Heart Lung* 34: 13, 2005. [PMID: 15647730]
36. Miller CD, Lindsell CJ, Anantharaman V, et al: Performance of a population-based cardiac risk stratification tool in Asian patients with chest pain. *Acad Emerg Med* 12: 423, 2005. [PMID: 15863398]
37. Liu J, Hong Y, D'Agostino RB, Sr., et al: Predictive value for the Chinese population of the Framingham CHD risk assessment tool compared with the Chinese Multi-Provincial Cohort Study. *JAMA* 291: 2591, 2004. [PMID: 15173150]
38. Chase M, Brown AM, Robey JL, et al: Application of the TIMI risk score in ED patients with cocaine-associated chest pain. *Am J Emerg Med* 25: 1015, 2007. [PMID: 18022495]
39. McCord J, Jneid H, Hollander JE, et al: Management of cocaine-associated chest pain and myocardial infarction: a scientific statement from the American Heart Association Acute Cardiac Care Committee of the Council on Clinical Cardiology. *Circulation* 117: 1897, 2008. [PMID: 18347214]
40. Cunningham R, Walton MA, Weber JE, et al: One-year medical outcomes and emergency department recidivism after emergency department observation for cocaine-associated chest pain. *Ann Emerg Med* 53: 310, 2009. [PMID: 18824277]

## USEFUL WEB RESOURCES

American College of Cardiology/American Heart Association 2002 guideline update for exercise testing: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Exercise Testing). 2002—<http://www.acc.org/qualityandscience/clinical/guidelines/exercise/dirindex.htm>  
American College of Cardiology Scientific Clinical Statements (NSTEMI guidelines, ECG guidelines, and others)—<http://www.acc.org/qualityandscience/clinical/statements.htm>  
American Heart Association Scientific Statement for the Management of Cocaine-Associated Chest Pain and Myocardial Infarction—<http://circ.ahajournals.org/cgi/content/full/117/14/1897>  
Guidelines from the European Society of Cardiology, Clinical Practice Guidelines—<http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/GuidelinesList.aspx>