

57 Congestive Heart Failure and Acute Pulmonary Edema

REFERENCES

1. Massie BM, Shah NB: Evolving trends in epidemiologic factors of heart failure: rationale for preventative strategies and comprehensive disease management. *Am Heart J* 133: 703, 1997.
2. American Heart Association. Heart Disease and Stroke Statistics: 2005 Update. Dallas, TX: American Heart Association; 2005.
3. Gillipatos G, Zannad F: An introduction to acute heart failure syndromes: definition and classification. *Heart Fail Rev* 12: 87, 2007.
4. Alla F, Zannad F, Filippatos G: Epidemiology of acute heart failure. *Heart Fail Rev* 12: 91, 2007.
5. Clemens LE, Almirez RG, Baudouin KA, et al: Pharmacokinetics and biological actions of subcutaneously administered human brain natriuretic peptide. *J Pharmacol Exp Ther* 287: 67, 1998.
6. Rich MW: Epidemiology, pathophysiology, and etiology of congestive heart failure in older adults. *J Am Geriatr Soc* 45: 968, 1997.
7. Adams KF, Fonarow GC, Emerman CL, et al: Characteristics and outcomes of patients hospitalized for heart failure in the United States: rationale, design, and preliminary observations from the first 100,000 cases in the Acute Decompensated Heart Failure National Registry (ADHERE). *Am Heart J* 149: 209, 2005.
8. Maisel AS, Krishnaswamy P, Nowak RM, et al: Rapid measurement of B-type natriuretic peptide in the emergency diagnosis of heart failure. *N Engl J Med* 347: 161, 2002.
9. Dao Q, Krishnaswamy P, Kazanegra R, et al: Utility of B-type natriuretic peptide in the diagnosis of congestive heart failure in an urgent-care setting. *J Am Coll Cardiol* 37: 379, 2001.
10. Collins SP, Peacock WF, Lindsell CJ, et al: S₂ detection as a diagnostic and prognostic aid in emergency department patients with acute dyspnea. *Ann Emerg Med* 53: 748, 2009.
11. Wang CS, FitzGerald JM, Schulzer M, et al: Does this dyspneic patient in the emergency department have congestive heart failure? *JAMA* 294: 1944, 2005.
12. Green SM, Martinez-Rumayor A, Gregory SA, et al: Clinical uncertainty, diagnostic accuracy, and outcomes in emergency department patients presenting with dyspnea. *Arch Intern Med* 168: 741, 2008.
13. Knudsen CW, Omland T, Clopton P, et al: Diagnostic value of B-type natriuretic peptide and chest radiographic findings in the patients with acute dyspnea. *Am J Med* 166: 363, 2004.
14. Collins S, Lindsell CJ, Storrow AB, et al: Prevalence of negative chest radiography in the emergency department patient with decompensated heart failure. *Ann Emerg Med* 47: 13, 2006.
15. Chait A, Cohen HE, Meltzer LE, et al: The bedside chest radiograph in the evaluation of incipient heart failure. *Radiology* 105: 563, 1972.
16. Chakko S, Woska D, Marinez H, et al: Clinical, radiographic, and hemodynamic correlations in chronic congestive heart failure: conflicting results may lead to inappropriate care. *Am J Med* 90: 353, 1991.
17. Kono T, Suwa M, Hanada H, et al: Clinical significance of normal cardiac silhouette in dilated cardiomyopathy—evaluation based upon echocardiography and magnetic resonance imaging. *Jpn Circ J* 56: 359, 1992.
18. Ruskin JA, Gurney JW, Thorsen MK, et al: Detection of pleural effusions on supine chest radiographs. *AJR Am J Roentgenol* 148: 681, 1987.
19. Silvers SM, Howell JM, Kosowsky JM, et al: Clinical policy: critical issues in the evaluation and management of adult patients presenting to the emergency department with acute heart failure syndromes. *Ann Emerg Med* 49: 627, 2007.
20. Dickstein K, Cohen-Solal A, Filippatos G, et al: European Society of Cardiology guidelines for the diagnosis and treatment of acute and chronic heart failure 2008. *Eur Heart J* 29: 2388, 2008.
21. Hunt SA, Abraham WJ, Casey DE, et al: 2009 Focused update incorporated into the ACC/AHA 2005 guidelines for diagnosis and management of heart failure in adults. *J Am Coll Cardiol* 53: e1, 2009.
22. Yealy DM, Hsieh M: BNP is not a value-added routine test in the emergency department. *Ann Emerg Med* 53: 387, 2009.
23. Diercks DB, Miller CD: Natriuretic peptide testing: a useful diagnostic test. *Ann Emerg Med* 53: 386, 2009.
24. Harrison A, Morrison LK, Krishnaswamy P, et al: B-type natriuretic peptide predicts future cardiac events in patients presenting to the emergency department with dyspnea. *Ann Emerg Med* 39: 131, 2002.
25. Fonarow GC, Peacock WF, Phillips CO, et al: Admission B-type natriuretic peptide levels and in-hospital mortality in acute decompensated heart failure. *J Am Coll Cardiol* 49: 1943, 2007.
26. Silver MA, Maisel A, Yancy CW, et al: BNP Consensus Panel 2004: A clinical approach for the diagnostic, prognostic, screening, treatment monitoring, and therapeutic roles of natriuretic peptides in cardiovascular disease. *Congest Heart Fail* 10: S3, 2004.
27. Peacock WF: The B-type natriuretic peptide assay: a rapid test for heart failure. *Cleve Clin J Med* 69: 243, 2002.
28. Januzzi JL Jr., Camargo CA, Anwaruddin S, et al: The N-Terminal Pro-BNP Investigation of Dyspnea in the Emergency Department (PRIDE) study. *Am J Cardiol* 95: 948, 2005.
29. Peacock WF, Summers RL, Vogel J, Emerman CE: Impact of impedance cardiography on diagnosis and therapy of emergent dyspnea: the ED-IMPACT trial. *Acad Emerg Med* 13: 365, 2006.
30. Collins SP, Mielniczuk LM, Whittingham HA, et al: The use of noninvasive ventilation in emergency department patients with acute cardiogenic pulmonary edema: a systematic review. *Ann Emerg Med* 48: 260, 2006.
31. Tallman TA, Peacock WF, Emerman CL, et al: Noninvasive ventilation outcomes in 2,430 acute decompensated heart failure patients: an ADHERE registry analysis. *Acad Emerg Med* 15: 1, 2008.
32. Gray A, Goodache S, Newby DE, et al: Noninvasive ventilation in acute pulmonary edema. *N Engl J Med* 359: 142, 2008.
33. Peacock WF, Emerman CL, Doleh M, et al: A retrospective review: the incidence of non-ST segment elevation MI in emergency department patients presenting with decompensated heart failure. *Congest Heart Fail* 9: 303, 2003.
34. Collins S, Storrow AB, Kirk JD, et al: Beyond pulmonary edema: diagnostic, risk stratification, and treatment challenges of acute heart failure management in the emergency department. *Ann Emerg Med* 51: 45, 2008.
35. Peacock WF, Fonarow GC, Emerman CL, et al: Impact of early initiation of intravenous therapy for acute decompensated heart failure on outcomes in ADHERE. *Cardiology* 104: 44, 2006.
36. Cotter C, Metzker E, Kaluski E, et al: Randomized trial of high-dose isosorbide dinitrate plus low-dose furosemide versus high-dose furosemide plus low-dose isosorbide dinitrate in severe pulmonary oedema. *Lancet* 351:389, 1998.
37. Crane SD: Epidemiology, treatment and outcome of acidotic, acute, cardiogenic pulmonary oedema presenting to an emergency department. *Eur J Emerg Med* 9:320, 2002.
38. Graham CA: Pharmacological therapy of acute cardiogenic pulmonary oedema in the emergency department. *Emerg Med Australasia* 16: 47, 2004.
39. Hamilton RJ: Rapid improvement of acute pulmonary edema with sublingual captopril. *Acad Emerg Med* 3: 205, 1996.
40. Mahmood SA, Hussein GM, Hamza EA: Cross-sectional study of heart failure therapy with angiotensin converting enzyme inhibitors and digoxin. *Saudi Med J* 25: 1060, 2004.
41. Peacock WF, Hollander JE, Diercks DB, et al: Morphine and outcomes in acute decompensated heart failure: an ADHERE analysis. *Emerg Med J* 25:205, 2008.
42. Peacock WF IV, Remer EE, Aponte J, et al: Effective observation unit treatment of decompensated heart failure. *Congest Heart Fail* 8: 68, 2002.
43. Le Conte P, Coutant V, N'Guyen JM, et al: Prognostic factors in acute cardiogenic pulmonary edema. *Am J Emerg Med* 17: 329, 1999.
44. VMAC Investigators: Intravenous nesiritide vs. nitroglycerin for treatment of decompensated congestive heart failure: a randomized controlled trial. *JAMA* 287: 1531, 2002.
45. Levy P, Compton S, Welch R, et al: Treatment of severe decompensated heart failure with high-dose intravenous nitroglycerine: a feasibility and outcome analysis. *Ann Emerg Med* 50: 144, 2007.
46. Abraham WT, Lowes BD, Ferguson DA, et al: Systemic hemodynamic, neurohormonal, and renal effects of a steady-state infusion of human brain natriuretic peptide in patients with hemodynamically decompensated heart failure. *J Cardiac Fail* 4: 37, 1998.
47. Sackner-Bernstein JD, Kowalski M, Fox M, Aaronson K: Short-term risk of death after treatment with nesiritide for decompensated heart failure: A pooled analysis of randomized controlled trials. *JAMA* 293:1900, 2005.
48. Sackner-Bernstein JD, Skopicki HA, Aaronson KD: Risk of worsening renal function with nesiritide in patients with acutely decompensated heart failure. *Circulation* 111:1487, 2005.
49. Mentzer RM, Oz MC, Sladen RN, et al: Effects of perioperative nesiritide in patients with left ventricular dysfunction undergoing cardiac surgery: the NAPA trial. *J Am Coll Cardiol* 49: 6, 2007.
50. Yancy CW, Krum H, Massie BM, et al: The Second Follow-Up Serial Infusions of Nesiritide (FUSION II) trial for advanced heart failure: study rationale and design. *Am Heart J* 153: 478, 2007.
51. SOLVD Investigators: Effect of enalapril on survival in patients with reduced ventricular ejection fraction and congestive heart failure. *N Engl J Med* 325: 293, 1991.
52. Taylor AL, Ziesche S, Yancy C, et al: Combination of isosorbide dinitrate and hydralazine in blacks with heart failure. *N Engl J Med* 351: 2049, 2004.
53. MERIT-HF Study Group: Effect of metoprolol CR/XL in chronic heart failure: metoprolol CR/XL randomized intervention trial in congestive heart failure. *Lancet* 353: 2001, 1999.
54. RALES Study Investigators: The effect of spironolactone on morbidity and mortality in patients with severe heart failure. *N Engl J Med* 341: 709, 1999.
55. Advisory Council to Improve Outcomes Nationwide in Heart Failure. Packer M, Cohn JN (eds): Consensus recommendations for the management of chronic heart failure. *Am J Cardiol* 83: 54A, 1999.
56. Fonarow GC, Adams KF, Abraham WT, et al: Risk stratification for in-hospital mortality in acutely decompensated heart failure. *JAMA* 293: 572, 2005.
57. Peacock WF, De Marco T, Fonarow GC, et al: Cardiac troponin and outcome in acute heart failure. *N Engl J Med* 358: 2117, 2008.
58. Graff L, Orledge J, Radford MJ, et al: Correlation of the Agency for Health Care Policy and Research congestive heart failure admission guideline with mortality: peer review organization voluntary hospital association initiative to decrease events (PROVIDE) for congestive heart failure. *Ann Emerg Med* 34: 429, 1999.
59. Diercks DB, Peacock WF, Kirk JD, Weber JE: ED patients with heart failure: identification of an observational unit-appropriate cohort. *Am J Emerg Med* 24: 319, 2006.
60. Auble TE, Hsieh M, McCausland JB, et al: Comparison of four clinical prediction rules for estimating risk in heart failure. *Ann Emerg Med* 50: 127, 2007.

2 References

61. Peacock WF, Fonarow GC, for the Society of Chest Pain Centers Acute Heart Failure Committee: Society of Chest Pain Centers recommendations for the evaluation and management of the observation stay acute heart failure patient. *Crit Path Cardiol* 7: 83, 2008.

■ USEFUL WEB RESOURCES

2009 Focused Update Incorporated into the American College of Cardiology/American Heart Association 2005 Guidelines for Diagnosis and Management of Heart Failure in Adults, *American Journal of Cardiology*—<http://content.onlinejacc.org/cgi/reprintframed/53/15/e1>

Society of Chest Pain Centers Recommendations for the Evaluation and Management of the Observation Stay Acute Heart Failure Patient—http://journals.lww.com/critpathcardio/Fulltext/2008/06000/Society_of_Chest_Pain_Centers_Recommendations_for.1.aspx
American College of Cardiology/American Heart Association 2005 Guidelines for Diagnosis and Management of Heart Failure in Adults—<http://www.acc.org/qualityandscience/clinical/statements.htm>
2008 European Society of Cardiology guidelines for the diagnosis and treatment of acute and chronic heart failure—<http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/guidelines-HF-FT.pdf>