

Self-Assessment Test

Update on the Management of Acute Decompensated Heart Failure: Incorporating Treatment Guidelines and Recent Clinical Research Findings into Practice



This self-assessment test has been provided as a study aid only. At the conclusion of the internet-based program, click on "Take CE Test" to proceed to the ASHP CE Testing Center and take the on-line program post-test. You may print your CE statement immediately after successful completion of the post-test.

This program is located at <http://symposia.ashp.org/adhf>
There are 26 questions associated with this self-assessment test.

1. The prevalence of heart failure increases with age and affects nearly 10% of men and women aged 75 and older.
 - a. True.
 - b. False.
2. Acute decompensated heart failure (ADHF) accounts for ___% of all heart failure.
 - a. 5.
 - b. 20.
 - c. 45.
 - d. 65.
3. Which of the following signs and symptoms of ADHF is NOT attributed to volume overload:
 - a. Ascites.
 - b. Hepatosplenomegaly.
 - c. Orthopnea.
 - d. Cool extremities.
4. Which one of the following signs and symptoms suggests possible evidence of low perfusion:
 - a. Fatigue.
 - b. Increased jugular venous pressure.
 - c. Edema.
 - d. Orthopnea.
5. Which of the following is likely in a patient with heart failure and a cardiac index of <2.2 L/min/m² and a pulmonary capillary wedge pressure of >18 mm Hg?
 - a. Congestion only.
 - b. Hypoperfusion only.
 - c. Both congestion and hypoperfusion.

- d. Neither congestion nor hypoperfusion.
6. Elevated serum creatinine and blood urea nitrogen are predictors of decreased risk of in-hospital mortality in patients with ADHF.
 - a. True.
 - b. False.
 7. Which of the following statements regarding diuretic therapy in patients with ADHF is true?
 - a. Many well-controlled studies support the positive impact of i.v. diuretics on outcomes.
 - b. Intravenous diuretics have a limited adverse effect profile.
 - c. Diuretic resistance rarely occurs.
 - d. Retrospective studies suggest a negative impact of intravenous diuretics on outcome.
 8. Compared with diuretics, ultrafiltration has been shown to result in
 - a. Greater net fluid and weight loss.
 - b. Greater hypokalemia.
 - c. Greater need for vasoactive therapy.
 - d. Greater reduction in dyspnea score.
 9. All of the following are concerns regarding the use of inotropic therapy in patients with ADHF *except*
 - a. Arrhythmia.
 - b. Increased mortality.
 - c. Neurohormonal activation.
 - d. Lack of response to milrinone in patients receiving beta blocker therapy.
 10. Compared with placebo, intravenous milrinone has been associated with significantly more of all of the following adverse effects *except*
 - a. Increased mortality.
 - b. Sustained hypotension.
 - c. New-onset atrial fibrillation.
 - d. Adverse events (in general).
 11. Compared with nitroglycerin, nesiritide has been demonstrated to reduce which of the following parameters?
 - a. Symptoms as reported by patient.
 - b. Symptoms as reported by physician.
 - c. Two-hour pulmonary capillary wedge pressure.
 - d. Three-hour pulmonary capillary wedge pressure.
 12. In patients undergoing coronary artery bypass graft surgery requiring cardiopulmonary bypass with a left ventricular ejection fraction (LVEF) < 40%, nesiritide has been shown to have which of the following outcomes

- a. Worsen renal function.
 - b. Worsen length of stay.
 - c. Improve 30-day mortality.
 - d. Improve 180-day mortality.
13. Controversy has arisen regarding nesiritide's effect on which of the following outcomes?
- a. Mortality at 30 days.
 - b. Hospital readmission within 180 days.
 - c. Hemodynamic parameters within 12 hours.
 - d. Length of stay for initial hospitalization.
14. Which of the following are recommendations of the Heart Failure Society of American for use of vasodilator therapy for the management of ADHF?
- a. When diminished peripheral perfusion or end-organ dysfunction (low output syndrome) occurs, particularly if these patients have marginal systolic blood pressure (<90 mm Hg), vasodilators should be considered.
 - b. When patients have symptomatic hypotension despite adequate filling pressure, vasodilators should be considered.
 - c. When adjunctive therapy is needed in other patients with ADHF, administration of vasodilators should be considered instead of intravenous inotropes.
 - d. When diminished or worsening renal function occurs, vasodilators should be considered.
15. Which of the following statements best describe patients with ADHF?
- a. Concomitant hypertension is more common than coronary artery disease.
 - b. A majority of patients have a systolic blood pressure (SBP) less than 100 mm Hg.
 - c. A preserved left ventricular ejection fraction is uncommon.
 - d. Together, drug and dietary non-compliance accounts for less than 25% of hospital readmissions.
16. Which of the following variables suggest an increased risk of in-hospital mortality in patients with ADHF?
- a. Blood urea nitrogen <43 mg/dL.
 - b. Systolic blood pressure \geq 140 mm Hg.
 - c. B-type natriuretic peptide < pg/mL.
 - d. Serum creatinine \geq 2.75 mg/dL.
17. What hemodynamic subset is most common in patients with ADHF?
- a. Warm and dry.
 - b. Warm and wet.
 - c. Cold and dry.
 - d. Cold and wet.

18. All of the following signs and symptoms suggest congestion in a patient with ADHF EXCEPT:
- Dyspnea on exertion.
 - Peripheral edema.
 - Cool extremities.
 - Rales.
19. When using a diuretic in patients with ADHF and normal renal function, which of the following statements is most correct?
- The initial furosemide dose should be 100 mg i.v.
 - Metolazone should be routinely used in patients receiving i.v. furosemide.
 - Goal urine output after the initial i.v. diuretic dose is >500 mL over two hours.
 - In-hospital mortality is lower in individuals receiving i.v. diuretics.
20. In addition to diuretics, vasodilators are indicated in patients with acute heart failure, if hypoperfusion is associated with adequate blood pressure and signs of congestion with low diuresis.
- True.
 - False.
21. Which of the following agents has the dose-limiting effect known as tachyphylaxis?
- Nitroprusside.
 - Nitroglycerine.
 - Nesiritide.
 - Hydralazine.
22. Which of the following signs and symptoms suggest hypoperfusion in ADHF?
- Orthopnea.
 - Early satiety.
 - Worsening renal failure.
 - Peripheral edema.
23. Milrinone is different from dobutamine because it can cause _____.
- Tachycardia.
 - Proarrhythmia.
 - Hypotension.
 - Symptom relief.
24. The presence of renal insufficiency in a hospitalized patient is associated with greater in-hospital mortality.
- True.
 - False.

25. Which one of the following is NOT one of the renal effects of vasopressin receptor antagonists in heart failure?
- a. Increase in urine volume.
 - b. No or minimal change in urine sodium and potassium.
 - c. Decrease in renal blood flow.
 - d. No or minimal change in glomerular filtration rate.
26. Adenosine-1 receptor antagonists would be expected to decrease urine output.
- a. True.
 - b. False.