Key Highlights from the Recommended Guideline

- **BNP** may help in the diagnosis of acute heart failure
- Use the volume status and tissue perfusion of the patient to guide drug therapy
- Use a graded approach to supporting ventilation: oxygen, CPAP/BIPAP, or endotracheal intubation

**Scope:** Health professionals involved in the care of heart failure patients in the acute care setting.

**How should I assess patients in acute heart failure?**

- Assess the patient’s volume status and tissue perfusion – cold or warm, wet or dry. [Level of Evidence: Class IIa, Level C]

- Seek a precipitating cause and consider ordering the following investigations: complete blood count, serum creatinine, electrolytes, troponins, ECG, chest x-ray and an echocardiogram. [Level of Evidence: Class I, Level C]

- Measure blood brain natriuretic peptide (BNP) or N-terminal proBNP (NT-proBNP) if the diagnosis is in doubt. [Level of Evidence: Class I, Level A]

- Monitor heart rate, BP and oxygen saturation frequently until the patient is stabilized. [Level of Evidence: Class IIa, Level C]

- Monitor fluid balance, including urine output, renal function and laboratory testing as appropriate, especially when the patient is in shock. [Level of Evidence: Class I, Level C]

- Consider inserting an arterial line and possibly a central venous pressure line if the patient is in cardiogenic shock or for those who require pressors. [Level of Evidence: Class II b, Level C]

**What are important acute heart failure treatment considerations?**

- Correct precipitating causes of acute heart failure promptly (eg, cardioversion for a tachyarrhythmia). [Level of Evidence: Class I, Level B]

- Give oxygen to all patients presenting with acute heart failure and hypoxia. [Level of Evidence: Class I, Level C]

- Support ventilation in patients with impending respiratory failure with continuous positive airway pressure (CPAP), bilevel positive airway pressure (BIPAP) or endotracheal intubation if hypoxemia persists despite increasing incremental fraction of oxygen. [Level of Evidence: Class IIa, Level B]

- Treat volume overload with i.v. diuretics. [Level of Evidence: Class I, Level B]
Consider vasodilators for patients with dyspnea at rest. [Level of Evidence: Class I, Level C]

Use positive inotropes only to stabilize the patient who is in cardiogenic shock or has volume overload with diuretic resistance. In hypotensive patients (systolic BP of 90 mmHg), dobutamine is preferred over milrinone. [Level of Evidence: Class I, Level C]

Begin using ACE inhibitors until the patient is stabilized. [Level of Evidence: Class I, Level B]

Consider an intra-aortic balloon pump (IABP) in patients with refractory heart failure despite medical therapy. [Level of Evidence: Class IIb, Level B]

Which therapies should be avoided in acute heart failure?

Do not use calcium channel blockers in acute heart failure; specifically, diltiazem and verapamil are to be avoided in acute heart failure with systolic dysfunction. [Level of Evidence: Class III, Level B] However, Diltiazem may be used for patients in atrial fibrillation with rapid ventricular response and preserved systolic function. [Level of Evidence: Class I, Level C]

Levels of Evidence

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Evidence or general agreement that a given procedure or treatment is beneficial, useful and effective.</td>
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<tr>
<td>Class II</td>
<td>Conflicting evidence or a divergence of opinion about the usefulness or efficacy of the procedure or treatment.</td>
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<tr>
<td>Class IIa</td>
<td>Weight of evidence is in favour of usefulness or efficacy.</td>
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<tr>
<td>Class IIb</td>
<td>Usefulness or efficacy is less well established by evidence or opinion.</td>
</tr>
<tr>
<td>Class III</td>
<td>Evidence or general agreement that the procedure or treatment is not useful or effective and in some cases may be harmful.</td>
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</tbody>
</table>

Level A Data derived from multiple randomized clinical trials or meta-analyses.
Level B Data derived from a single randomized clinical trial or nonrandomized studies.
Level C Consensus of opinion of experts and/or small studies.

The above recommendations were derived from the following GAC endorsed guidelines:


Rating (out of 4): 🍍🍎🍊🍋

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