

In situations of severe pulmonary edema, an advanced airway (initiating intubation and ventilation) may be required. Noninvasive ventilatory support such as a BiPap (bilevel positive airway pressure) can also be used in less severe circumstances and at home as this device is effective in decreasing preload.

Drugs and Devices

Diuretics

Die-rocket

Diuretics are used to decrease preload of the heart by promoting sodium and water loss thereby allowing the ventricles to contract more efficiently. Cardiac output is increased, pulmonary vascular pressures are decreased, and symptoms of heart failure such as edema are relieved. Loop diuretics such as furosemide and bumetanide can be administered IV push for rapid action in the kidneys.

Beta Blockers

Beta-fish with Blocks

Beta blockers are useful in the treatment of heart failure as they directly block the negative effects of the sympathetic nervous system and effectively work to decrease afterload. This will improve the heart's pumping ability and decrease morbidity and mortality. They must be started slowly and abrupt withdrawal is not recommended.

Angiotensin II Receptor Blockers (ARBs)

Angel-tennis in (2) Tutu with Receptor Blocked

Angiotensin receptor blockers (ARBs) have the same benefits as ACE inhibitors and are therefore used in patients who cannot tolerate ACE inhibitors.

ACE Inhibitors

Ace with Inhibiting-chains

Angiotensin-converting enzyme (ACE) inhibitors work as vasodilators to open up blood vessels, allowing for improved blood flow and decreased workload of the heart, thereby decreasing afterload and increasing cardiac output.

Digoxin (Lanoxin)

Digital-ox

Digoxin is a positive inotrope that improves left ventricular function because it works by increasing the strength of myocardial contractions and thus, also improves myocardial oxygen consumption. However, due to the length of time needed to reach therapeutic levels, it is not recommended for use in acute decompensated heart failure, but rather used who those who have not responded to conventional pharmacotherapy and those with chronic heart failure.

Pacemaker

Pacemaker

For serious heart failure, an implanted device such as a pacemaker may be indicated to help the heart's chambers pump. There are various devices that can be used to treat heart failure clients. Cardiac resynchronization therapy (CRT) or biventricular pacing can increase left ventricular function and cardiac output. Implanted ventricular assist devices (VAD) are often used for long-term support, as patients wait for a heart transplant.