

Patients with heart failure should be instructed to avoid the use of non-steroidal anti-inflammatory drugs (NSAIDs). These medications increase the risk of fluid retention and renal failure. Due to these effects, NSAIDs diminish the efficacy of diuretics and ACE inhibitors. The risk of renal failure is also increased when used in the presence of ACE inhibitors, or in the presence of existing renal insufficiency (Adams et al., 2006).

NONPHARMACOLOGICAL TREATMENT STRATEGIES FOR HEART FAILURE

Exercise Training

Controlled trials have shown that exercise training improves symptoms, quality of life, and exercise capacity in patients with heart failure. This beneficial effect is additive to the effects of optimal medical therapy (Hunt et al., 2005; Myers, 2005). Exercise training in heart failure patients is best accomplished in a formally structured program, such as cardiac rehabilitation. Although many studies have demonstrated the short-term benefits of exercise training, there has been a lack of randomized clinical control trials evaluating the long-term outcomes of rehospitalization and mortality. The HF-Action study is ongoing to evaluate the long-term effects of exercise rehabilitation in heart failure patients. Caution must still be used in recommending exercise training to heart failure patients because patient characteristics may not match those of patients enrolled in clinical trials (Adams et al., 2006).

The physiological benefits of exercise training in chronic heart failure include:

- ◆ Improved changes in skeletal muscle metabolism.
- ◆ Improved heart rate variability.
- ◆ Decreased resting plasma norepinephrine levels.
- ◆ Increased exercise cardiac output.
- ◆ Increased endothelium dependent vasodilation.
- ◆ Increased coronary blood flow reserve in patients with CAD (Adams et al., 2006).

Resynchronization Therapy

Resynchronization therapy is indicated in patients with moderate to severe heart failure and those with bundle branch block (typically left bundle branch block) who are symptomatic, despite optimal medical therapy. Dysynchrony is common in heart failure because many patients have bundle branch block that causes the right and left ventricles to depolarize at different times. When this occurs, the walls of the right and left ventricles do not contract simultaneously.

Clinical Implications of Dysynchrony

- ◆ Contractility problems
 - ❖ Septum depolarizes before LV.
 - ❖ Late activation of LV = LV pressure after septum has finished repolarizing, causing septum to move away from LV instead of contributing to LV ejection.
 - ❖ Results in decreased contribution of septum to LV ejection and contributes to reduced LV stroke volume.
- ◆ Mitral Regurgitation
 - ❖ Late activation of LV causes lateral papillary muscle to depolarize and contract late.
 - ❖ Late papillary muscle contraction allows mitral leaflets to enter into left atrium during ventricular systole.
 - ❖ Contributes to decreased stroke volume from LV.