Nutrition in Heart Failure

Isa Ardahanli¹, Mehmet Çelik²

¹Department of Cardiology, Bilecik State Hospital, Turkey
²Department of Endocrinology and Metabolism, Bilecik State Hospital, Turkey

*Corresponding Author: Mehmet Çelik, ²Department of Endocrinology and Metabolism, Bilecik State Hospital, Turkey

ABSTRACT

Inspite of remarkable advances in the acute treatment of ischemic events, the prevalence of heart failure is increasing world-wide. Despite improvements in medical and device therapy for heart failure, non pharmacologic interventions are needed to reduce symptoms and improve quality of life. Lifestyle changes are an integral part of treatment and include behavioral changes, exercise and diet. Nutritional therapy in heart failure is aimed at preventing edema due to water and sodium uptake, avoiding difficult digestion and providing adequate and balanced nutrition.

Keywords: Nutrition, Heart Failure, vitamin D, electrolyte imbalances, micronutrients

INTRODUCTION

Heart failure (HF) is a clinical syndrome characterized by structural or functional impairment of ventricular filling or ejection of blood resulting in insufficient perfusion to meet metabolic demands (1-2). Cardinal manifestations include edema, dyspnea, and fatigue (3). In addition to aging, the prevalence of heart failure increases with the progress of invasive and surgical techniques in the acute treatment of ischemic events. Because of these trends, HF is currently considered an epidemic and a public health priority in developed countries (4-5-6). Despite improvements in medical and device therapy for heart failure, non pharmacologic interventions are needed to reduce the symptoms of some of the patients and improve the quality of life. The role of diet and nutrition is increasingly recognized in the prevention and management of HF.

Although limited evidence that gut function is impaired in HF, decreased cardiac function can reduce bowel perfusion and lead to bowel wall edema, resulting in malabsorption. There is an anabolism catabolism imbalance in these patients which is deepened by neurohormonal and immunological factors such as the increase of catecholamine, cortisol and cytokines.

The use of prolonged loop diuretics causes electrolyte imbalances. There absorption of minerals such as potassium, magnesium and calcium and vitamins such as thiamine is impaired. Reduced potassium value leads to fatigue and several studies have shown that magnesium supplementation reduces ventricular arrhythmia frequency (9-10). Absence of thiamine can cause high output failure and wet beriberi with peripheral vasodilation (11). Patients with heart failure were found to have low serum vitamin D levels as well as excessive calcium excretion. For this reason, the risk of osteoporosis and osteopenia is high in these patients. Vitamin D increase uptake of calcium and increase contractile force and increase muscle cell proliferation. Deficiency of vitamin D can result in a reversible myopathy, decreased muscle mass, and falls (12-13).

In addition to ensuring energy production, the elimination of free oxygen radicals formed is important for the protection of mitochondrial cells. Micro nutrients are the essential cofactors for energy transfer and heart physiology. Micro...
nutrient demands of a pathologic process such as HF are different from those of the normal myocardium. Some authors suggest the importance of micro nutrients in heart failure for both calcium homeostasis and oxidative stress (9).

CONCLUSION

Nutrition in heart failure treatment is a very important part of the regimen. As in the case of medication, the nutrition regime should be specially arranged for the person.

REFERENCES


