Nutrition Requirements and Interventions in Patients with Heart Failure Who Qualify for Ventricular Assist Device Placement and Heart Transplantation

Patients suffering from congestive heart failure are at risk for cardiac cachexia and malnutrition. In severe cases, as in those who qualify for a ventricular assist device (VAD) or a heart transplant, nutrition assessment and intervention are very important. Because morbidity and mortality rates are so high in patients with severe heart failure, patients often expire before they are able to receive a VAD or heart transplant. Nutrition intervention can improve patient status and add quality of life.

Cardiac cachexia is the sudden, severe, unintentional weight loss and muscle wasting caused by a cardiac disease. It is often evident in patients with heart failure. It is defined as “weight loss of greater than 7.5% of the previous normal weight as observed over a period of at least 6 months.” (Steinborn, 2003, pp. 191) Increased catabolism of muscle and inadequate anabolism in CHF patients results in wasting and malnutrition.

According to Aggarwal (2013), the Mini Nutritional Assessment (MNA) is extremely valuable in determining the extent of malnutrition and cardiac cachexia risk in patients with severe heart failure. This assessment has traditionally been used in the elderly population to assess malnutrition risk, however, it has been proven to be effective for cardiac patients as well. Not only does it assess nutritional intervention need, it goes as far as predicting mortality. With the use of the MNA for these patients, it allows for timely intervention to halt the decline of protein-calorie malnutrition, implement the use of enteral nutrition if needed, and replete micronutrients. Based on Aggarwal’s study, 90% of their cohort was malnourished according to
the MNA, most likely due to cardiac cachexia. However, it proves that nutrition assessment is a valuable tool in emphasizing the need for nutrition intervention.

Patients with congestive heart failure have increased energy expenditure and protein needs compared to healthy individuals. (Montgomery 2012) It is imperative to increase calorie and protein consumption. For qualified VAD and heart transplant patients, a low sodium diet is recommended. Restricting sodium intake to 2 grams per day will decrease water retention and keep fluid from accumulating. A fluid restriction of 1.5-2.0 liters per day will also improve symptoms of edema or ascites. If the patient is experiencing loss of appetite or poor oral intake, nutrition supplements are advised. If inadequate intake is apparent, enteral nutrition is encouraged to meet calorie and protein needs. Multiply studies have shown success with PEG tubes in patients with awaiting VAD placement or heart transplant.

For patients with inadequate oral intake, it is safe to assume they are not receiving adequate micronutrient intake which could lead to deficiencies. (Montgomery 2012) Although there is not sufficient evidence to conclude the improvement of heart failure status with individual vitamin and mineral supplementation, they can be beneficial for repletion of known deficiencies in these patients. There is also some evidence suggesting the use of immune-enhancing supplements to decrease inflammation in VAD and heart failure patients. (Montgomery, 2012) Fish oil supplementation has demonstrated improvement in medical outcomes for these patients.

Addressing severe congestive heart failure malnutrition is beneficial for patient status. Improving the use of assessing these patients can greatly impact timely intervention and prevent further malnutrition. Proper nutrition will improve quality of life and possibly delay
cardiac cachexia. With implementation of a sodium and fluid restricted diet and the possibility of correcting micronutrient deficiencies with supplements, the progression of CHF can be decreased in some patients. Although further study is needed in this area, early malnutrition assessment and intervention is promising in improving patient outcomes in those with severe congestive heart failure awaiting VAD implementation and heart transplant.
References

