Cancer-Related Weight Loss

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Mr. A is a 70-year-old man who was initially diagnosed with stage II colon cancer in 1990. Prior to diagnosis, he experienced an unintentional 23-pound weight loss. He underwent surgical resection, with additional surgery in 1992 for release of adhesions. He was treated with adjuvant 5-fluorouracil and leucovorin. In 2004, he developed a paratracheal mass that was diagnosed as large cell carcinoma as well as non-small cell lung cancer metastatic to the bone. Because the disease was unresectable, Mr. A received a combination of chemotherapy and radiation therapy.

Mr. A now has been admitted to the hospital with complaints of persistent nausea, intermittent vomiting, decreased oral intake, and dysphagia. He reports that the symptoms started about 10 days ago, and, since that time, he has lost an additional 10 pounds. His current medications include erlotinib, vitamin B12, iron sulfate, pantoprazole, and fluconazole (Sweetman, 2004).

Assessment

A thorough history is important when assessing a patient’s nutritional status and determining the proper nutrition intervention. The following information is important to note.

- Prior to his diagnosis of colon cancer, Mr. A was in good general health, with a typical weight of 165–170 pounds. He lost 23 pounds at the time of his diagnosis in 1990. His weight stabilized at 145 pounds for the next few years. He lost an additional 18 pounds in 2004, with his diagnosis of large cell carcinoma and non-small cell carcinoma. Since that time, his weight has been approximately 127 pounds (75% of his ideal body weight).

- Mr. A is now cachectic, with a history of anorexia following multiple treatments during the past two years. He also reports a significant decline in his appetite, and he has had difficulty tolerating foods that he enjoyed before his diagnosis. He reports that he “has tried everything,” but despite how much he eats, his weight does not increase and usually decreases.

- Mr. A has a significant history of cigarette smoking (50 pack years). He also has a history of small bowel obstruction (December 2005), chronic obstructive pulmonary disease, chronic anemia, acute renal failure, chronic hydrenephrosis, and esophagitis with Schatzki ring.

- Currently, no treatment is planned other than oral erlotinib. Side effects of erlotinib include decreased resistance to infection, anemia, sour taste, sore mouth, diarrhea, fatigue, and decreased appetite.

- Mr. A has experienced multiple complications related to his disease and treatment. The most significant factor is anorexia with weight loss, difficulty swallowing, persistent diarrhea, abdominal discomfort, and intermittent nausea with vomiting. Findings on physical examination include height of 5 feet, 8 inches, and weight of 117 pounds (a loss of 10 pounds during the past three weeks). His skin turgor is good, but he has a loss of muscle mass in the upper and lower extremities. Oral mucous membranes are moist, with no lesions noted. His swallow and gag reflexes are intact. Bowel sounds are normal, with no abdominal tenderness to palpation noted. Visceral protein is intact, with an albumin level of 4.4 mg/dl and prealbumin of 17.7 mg/dl.

A small bowel follow-through study reveals a partial small bowel obstruction, which is directly attributing to his nausea, vomiting, and recent weight loss. Mr. A has a nasogastric gravity tube placed for drainage and remains on a clear liquid diet, with a plan to advance the diet very slowly. This treatment will continue for the next 24–48 hours in anticipation that surgery will not be needed. If the diet cannot be advanced, total parenteral nutrition may be an alternative option to prevent further weight loss.

Although the primary concern is his intestinal obstruction, based on the information from the history and physical examination, Mr. A most likely has a secondary diagnosis of cancer-related anorexia and cachexia. His intestinal obstruction must be treated aggressively to avoid further complications.
resolution of the obstruction, the issue of weight loss can be addressed.

Etiology of Weight Loss

Weight loss is common with many types of cancer. Gastrointestinal (GI) cancers are related to the symptom for multiple reasons, including anorexia and cachexia. Regardless of cancer type, a 5% reduction in weight is a predictor of poor prognosis (Gill & Murphy-Ende, 2005). In most patients with cancer, weight loss can be attributed to the following.

- **Cachexia** is characterized by extreme weight loss with depletion of lean body muscle mass and adipose tissue, anorexia, early satiety, anemia, and emaciation (Nebeling, 2000). Cachexia can result from tumor-induced metabolic abnormalities and mechanical problems limiting oral intake. Cachexia involves more than simple caloric deficit. Fat storage is inhibited, a sharp decline in production of serum protein is noted (as indicated by a decline in c-reactive protein), and glucose metabolism is altered in several ways. Additional calories alone will not overcome the process because of proinflammatory response, acute phase protein response, abnormal metabolism, and proteolysis-inducing factors. Skeletal muscle and fat are lost at equal rates because of the body’s adaptation to hypermetabolism.

- **Anorexia** is a loss of appetite that can lead to severe weight loss. Anorexia is present in nearly 80% of patients with GI cancers and 60% of lung cancers (Gill & Murphy-Ende, 2005). The normal response to the starvation state is not the same with tumor malignancy as with noncarcinogenic anorexia. Anorexia includes a negative energy balance with high protein turnover.

- **Taste alterations** include ageusia (taste blindness) and dysgeusia (taste abnormality), which appear during periods of tumor growth and may be related to release of tumor byproduct. Radiation therapy to the head and neck causes actual tissue damage, a decrease in saliva, and ageusia. Chemotherapy drugs can cause a metallic or sour taste.

- **Nausea and vomiting:** One of the most common causes of weight loss and generally caused by treatment agents, nausea and vomiting can be intermittent or persistent. Other potential causes of nausea and vomiting include GI obstruction, gastroparesis, increased intracranial pressure, hypercalcemia, uremia, use of antibiotics, antifungals, narcotics, and constipation.

Management of Weight Loss

Any intervention must be determined on an individual basis related to the underlying mechanism, the type of cancer, the treatment involved, and a patient’s nutrition status. In most cases, weight loss is the first indicator of depleted nutrition status, requiring intervention from a registered dietitian. Figure 1 presents specific tips to consider for managing weight loss in patients with cancer.

As Mr. A’s small bowel obstruction begins to resolve, he could benefit from the use of megesterol acetate for appetite stimulation and nutritional supplements to increase calorie and nutrient intake. If these measures prove successful in reversing his cachectic state, he should continue advancing his diet under the direction of a registered dietitian.

Conclusion

Weight loss usually is overlooked as a serious side effect of cancer and cancer treatment. Starvation is a major complication that can potentially be reversed with nutrient density. Cachexia is protein-calorie malnutrition that can require complicated strategies to block metabolic changes. Unfortunately, if a patient has developed cachexia, treatment options become limited because of poor nutritional status. The overall goal is early intervention to avoid weight loss. Oncology nurses must be aware of the significance of weight loss and its serious sequelae. Collaboration with a registered dietitian early in a patient’s course of treatment can be the key to maintaining energy stores and stabilizing weight.

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References

