

Calculating Nutrition Needs for a Patient With Head and Neck Cancer

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Patients with head and neck cancer often have distinct nutrition needs. The unique set of side effects of the disease process and treatment cause the patient to develop nutritional challenges. The challenges are complex to manage, often requiring supplemental feedings. Proper calculation of protein and caloric intake is necessary to meet the increased needs. Taking treatment and activity levels into account also is necessary when calculating nutrition requirements. Fluid balance can be delicate and requires attention, too. The dietitian determines the fluid needs of patients, using one of several calculations, and need is based on the patients' laboratory work and overall hydration status, which can be affected by inadequate fluid intake, diarrhea, and vomiting.

The patient, a 58-year-old man named M.B., has been diagnosed with stage IIB adenocarcinoma of the esophagus. He is a smoker and consumes alcohol on a daily basis (more than two drinks per day). He has experienced severe heartburn in the past year and has been taking antacids daily. In addition, M.B. has lost more than 25 lbs from being unable to eat because of pain when swallowing (odynophagia), heartburn, and fullness soon after eating (early satiety). He has difficulty swallowing (dysphagia) anything with texture, as well as difficulty swallowing liquids. M.B. also complains of a cough that keeps him awake at night. These symptoms have caused him to seek medical attention.

M.B.'s lack of food intake has caused a significant amount of weight loss. His usual body weight was 90 kg with a height of 185.8 cm. Although M.B.'s body mass index (BMI) is 24.7 (normal BMI for this age group is 18.5–24.9), he is at increased nutrition risk because of his unplanned weight loss (Width & Reinhard, 2009). His present weight is 198 lbs, a change in weight status of 14%, which is indicative of severe weight loss (American Dietetic Association, 2000). Albumin and prealbumin levels were abnormal (M.B.'s albumin was 3.1 g/dl and prealbumin was 12 g/dl). The reference range for albumin is 3.5–5 g/dl and prealbumin is 15–36 g/dl. These values reveal malnutrition (Width & Reinhard, 2009). In addition, transferrin

was 175 mg/dl (normal value for men is 215–365 mg/dl), hemoglobin was 13.5 mg/dl (normal value for men is 14–18 mg/dl) and hematocrit was 38% (normal value for men is 40%–54%); these low values are consistent with dietary deficiency of iron-rich foods (Width & Reinhard, 2009).

Assessment

Nutrition assessment was conducted by having M.B. provide a 24-hour food recall, an assessment in which the clinician obtains, from the patient, a list of all foods and beverages consumed in the past 24 hours. Accuracy for amounts of food consumed is validated by using food models, measuring spoons, and measuring cups. If time permits, the patient may be asked to keep a three- to five-day food diary. This can provide a better assessment of what is actually consumed over a number of days rather than just in one random day. It also provides for an accurate reflection of foods consumed,

based on actual intake rather than recall (Nelms, Sucher, & Long, 2007).

The 24-hour recall revealed that M.B. was only able to consume about 800 kcal and less than 20 g of protein per day. This inevitably led to his marked weight loss and decreased albumin and nutrition status.

Treatment

The medical plan for treating M.B.'s esophageal cancer includes surgery, chemotherapy, and pre- and postoperative external beam radiation treatment (RT). M.B. will undergo chemoradiation (the sequential use of chemotherapy followed by RT) which may magnify the already present odynophagia and dysgeusia. In addition to odynophagia, dysgeusia, and esophagitis, alterations in smell, changes in taste acuity, dry mouth (xerostomia), and difficulty speaking can be complications of the treatment for head and neck cancers (Nelms et al., 2007).

In an effort to minimize these side effects and enhance nutrition for M.B.,

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