

Review Article

Nutrition Intervention Strategies to Maintain Body Weight of Head and Neck Cancer Patients

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Abstract

Severe weight loss (>2% body weight in one week or >10% over 6 months) caused by malnutrition stemming from cancer and its associated treatments is linked to an increased risk of morbidity and mortality [1]. While treatments for all forms of cancer can often cause side effects which lead to decreases in body weight, a special situation arises with head and neck cancer patients, who often present with tumor blockages making it even harder for the consumption of adequate nutrition. Thus, it is clear that head and neck cancer patients should be provided with nutritional consumption assistance, with the expected outcome of increasing patient knowledge about consuming adequate nourishment in order to prevent weight loss. At present, however, this is not common practice at all cancer treatment centers. Thus, the purpose of this paper was to review the existing standard of care for nursing nutritional interventions during cancer treatment and the resulting outcomes for patients with cancer.

Introduction

Studies show that nutritional complications, like malnutrition, correspond with patients suffering from head and neck cancer (HNC). Often, side effects associated with treatment, including sensitivity to taste, mouth dryness, and tumor blockages, make it difficult for the consumption of adequate nutrition. In addition, the precursor to HNC is typically related to unhealthy lifestyle practices, including excessive alcohol and tobacco use, and insufficient nutritional intake. As a result, the tumor develops in various places of the mouth, larynx, throat, nose, and sinuses [2]. This inhibits proper digestion and nutrient absorption, leading to malnutrition. Severe weight loss (>2% body weight in one week or >10% over 6 months) caused by malnutrition stemming from cancer and its associated treatments is linked to an increased

risk of morbidity and mortality [1,3]. However, positive lifestyle practices can have a positive impact on nutritional status. A cohort study by Li et al. [4] compared Healthy Eating Index-2005 (HEI-2005) and Mediterranean Diet Score (aMED) with the risk of HNC. The researchers found that subjects scoring higher on HEI-2005 and aMED reflected better obedience to healthy eating. These patients tended to be older and less likely to be involved in risky behavior, such as smoking, drinking, and heavy work. They also had a higher educational level, lower total caloric intake, and were more physically active [4].

Thus, it is imperative that patients seek dietary counseling and understand the changes that will occur during treatment. According to Ravasco et al. [5], counseling has a significant impact on the dietary outcomes of cancer patients.

However, at the present time, there is no universal standard of care for the dietary counseling of HNC. In addition, dietary counseling is not a common practice at all cancer treatment centers. Therefore, the purpose of this paper was to review the existing nursing nutritional interventions during cancer treatment and the resulting outcomes for patients with HNC.

Standard Nutritional Interventions

In most oncology centers, if nutrition counseling is available to a HNC patient, it often will involve a general nutritional talk along with an oncology nutrition booklet. The patient would also have the option of speaking with a registered dietitian; however these are typically not covered by insurance, and are expensive for the patient. However, a study conducted by Isenring and associates [6], tested the effect of 12 weeks of early nutrition intervention on body composition, weight maintenance, and quality of life. The intervention included consistent and intensive nutrition counseling led by a dietitian. A second group received the usual care of the oncology center, which included education classes, supplement samples, and informational booklets. This study found that the intervention group was able to maintain their body weight over the 12 weeks of intensive nutrition counseling, unlike the group who received the usual care.

Similarly, a recent study by Sironi et al. [7], analyzed the nutritional status of HNC patients receiving enteral feeding through nasogastric or gastrostomy tubes, and found improvements in home enteral nutrition, including improved body weight and nutritional indicators, and a increased quality of life, occurred with supportive nutritional intervention.

According to Albert Bandura's theory of self-efficacy [8], it is likely that a simple nutritional talk and booklet used to increase the patient's knowledge is not an adequate intervention for providing the patient with the ability to accomplish the goal of weight maintenance. Bandura's theory states that thought patterns, actions and emotional arousal are all influenced by a person's level of self-efficacy. In other words, it is a person's belief about their capability to perform in a certain matter in order to attain a goal. The higher the level of induced self-efficacy, the higher is the performance accomplishments and the lower the emotional arousal. This evidence-based theory examines the impact of health practices on illness. Evidence from research has been used to show relationships between self-efficacy and adaptation to cancer with an increased adherence to treatment, increased self-care behaviors, and decreased physical and psychological symptoms [9]. The theory of self-efficacy believes that people are continually making decisions about their actions, which to pursue and how long to continue these actions. It is these judgments on decisions that then affect choice of activities; people avoid activities they believe exceed their coping capabilities but perform activities they feel they can manage. The level of self-efficacy that a

person then has will determine the amount of effort put into such activities. Thus, the booklet and single nutrition talk are not enough to improve a patient's level of self-efficacy. Yet, it is likely that having the assistance of a nurse throughout the course of cancer treatment would help assure that patients make proper decisions and help give them the affirmation to continue proper nutritional intake despite the adverse effects of cancer treatment (including difficulty swallowing or other physical problems).

Sound Nutrition Practices During HNC Treatment

In light of the aforementioned studies, adequate nutritional guidance during cancer treatments is very important. A registered dietitian should be made available to provide nutritional counseling, develop meal plans, and monitor the body weight, caloric, and dietary needs of a person diagnosed with and being treated for cancer. Ideally, each HNC patient would be given a personalized dietary plan according to their specific needs and goals. Dietary plans should be closely monitored and changed according to the client's changing nutritional health requirements throughout their battle with cancer.

The objectives of nutritional guidance should be to help the patient:

- Improve quality of life
- Maintain a healthy weight
- Improve treatment tolerance
- Manage treatment-related side effects
- Improve eating habits

Sound nutrition practices are very important during cancer treatment to help the body maintain strength, prevent tissue break down, manage side effects, and maintain immunity. The healthier an individual's diet, the better they can tolerate treatments and the more effective cancer treatments are in their body. The patient should be encouraged to eat a variety of foods that will give the body the nutrients needed to help fight cancer. Included in these nutrients are protein, fats, and carbohydrates, as well as water, vitamins, and minerals [10].

In general, a plant-based diet is ideal [11]. At least 5 servings of fruits and vegetables are recommended each day, in a variety of colors. Colorful fruits and vegetables contain phytochemicals, which have preventative or disease-protective properties. High-fat foods, especially those from animal sources, should be avoided, as well as salt-cured, smoked, and pickled foods. Small snacks may be ingested during the day, as caloric needs often increase during cancer treatment. It may be helpful to keep a variety of protein-rich snacks on hand, including yogurt, soup, cheese, and crackers.

It is also very important to ensure that the patient is getting enough fluids each day. These can be in the form of water, juices, or other clear liquids that are sipped throughout the day. Fluids are lost through vomiting or diarrhea, and may lead to dehydration if not replenished.

During treatment, there will most likely be days when side effects make eating difficult or undesirable. On those days, it might be helpful to eat several small snacks throughout the day, rather than three large meals. Liquid supplements or high-protein beverages might be helpful to increase calories. Also, the patient should not be limited to food choices. In other words, if they want to eat breakfast for dinner, or vice versa, it is okay. When eating is difficult, it is more important to get calories in so that the patient can maintain strength. Then, on days when appetite is good, the patient should be encouraged to eat as healthy as possible.

Conclusion

Depending on where HNC patients are in their treatment process, the assessment of their nutrition status is crucial. Whether it's starting a healthy diet, frequently meeting with a dietitian, or receiving gastrostomy tube feeding, maintenance is needed. Additionally, beginning nutrition treatment early, even before therapy begins, is important because there will be an exponential decrease in health status upon beginning chemo and radiotherapy. This is especially the case for patients who use tobacco, drink, or are presently malnourished. More focus needs to be on preventative measures, as well, with studies from Li et al. [4], Ravasco et al. [5], and Chencharick and Mossman [3] showing the significant decreases in HNC risk when following a healthy diet and lifestyle.

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