

Case Study 31

Nutrition Therapy for Hematology-Oncology

- What type of cancer is lymphoma?

Lymphoma: cancer of the lymphatic tissues

- Generally, patients with cancer are treated with surgery, radiation therapy, chemotherapy, biological therapy, bone marrow transplant, or a combination of therapies. Ms. Mitchell's medical plan indicates that she will have both chemotherapy and radiation therapy. Describe how each of these therapy modalities work to treat malignant cells.

Using specific agents, intravenously or orally, to reverse, suppress or prevent carcinogenesis before the development of invasive malignancy

- Radiation and chemotherapy may also affect healthy tissues. (a) What other cells in the body may be affected by either or both of these treatments? (b) What symptoms may the patient experience as a result of the destruction of these cells?

(a) Radiation kills fast dividing cells and epithelial cells in the area of disease, while chemotherapy typically kills fast dividing cells of the hair, skin, lymph and bone marrow.

(b) Hair loss, compromised immune system, soreness in the mouth or throat, dry skin, diarrhea, nausea, vomiting and fatigue.

- Calculate this patient's body mass index and the percent usual body weight. How would their interpretation differ? Which is the most appropriate to use in determining nutritional risk for this patient?

BMI= **19**, UBW= **92%**

BMI measure if someone is over/normal/underweight whereas UBW tells us if they are at risk due to % weight change. UBW is best for Denise.

- Calculate the patient's protein requirements.

Protein needs= $59.09\text{kg} \times 1.3 \text{ stress factor} = 76.81 \sim \mathbf{77\text{kg}}$

- Calculate energy requirements for Denise. Identify the formula/calculation method you used and explain the rationale for using it. Which weight (UBW or current body weight) should you use to accurately calculate the patient's energy needs?

Energy requirements= $66.5 + 815.4 + 838.2 - 142.8 = 1577.3$

$1577.3 \times 1.3 = 2050.49 \text{ kcal}$

TEE was used in order to apply the stress factor of cancer into her nutritional needs. UBW was used instead of IBW because she has lost weight (8%). BMI was not used because it did not indicate any nutritional risk because it was in normal range.

- How would you assess the dietary information gathered for usual nutritional intake?

Patient is not taking in enough kcals/ energy to meet even her REE. Protein levels are too low for her increased metabolic rate.

- What common side effects of her illness may affect her dietary intake and subsequently her nutritional status?

Appetite decrease, changes in taste perception, involuntary weight loss

- What physical symptom(s) is this patient experiencing that might affect her dietary intake?

Fatigue and dry mucous membranes (throat/ mouth)

- From the information gathered within the intake domain, list possible nutrition problems using the diagnostic term.

Inadequate protein intake, inadequate energy intake, involuntary weight loss

- Which labs can be used to assess protein status? (a) Which labs will reflect acute changes in protein status versus chronic changes? Why? (b) Which are available for this patient? Considering her diagnosis, which labs would NOT be appropriate to use to evaluate protein status? (c) Determine the nutritional risk associated with this patient's laboratory value. Would you request any additional nutrition assessment labs?

Albumin, prealbumin and transferrin.

(a) Albumin will reflect acute changes due to their short half-life of ~ 2 days

(b) Only albumin is available. Albumin levels would be an indicator of cancer, not protein, due to metabolic stress

(c) Possible protein intake risk according to total protein levels. I would request prealbumin labs to monitor progress overtime.

- Select two high-priority nutrition problems and complete the PES statement.

(i) Inadequate protein intake related to loss of appetite as evidenced by 24 hour recall and involuntary weight loss.

(ii) Involuntary weight loss related to poor appetite as evidenced by weight loss of 8% over a 2 to 3 month period.

- For each of the PES statements that you have written, establish an ideal goal (based on the signs and symptoms) and an appropriate intervention (based on etiology).

(i) Ideal goal: increase protein intake. Intervention: supplement with nutritional drinks such as Ensure for added protein and energy intake

(ii) Ideal goal: increase weight gain before treatment. Intervention: include addables/ spreadables to foods and drinks. Start on tube feeding prior to treatment.