Cancer and nutritional needs

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Malnutrition is most common among cancer patients. It affects more than 50% of them and it may become direct cause of death in about 25% of them.

Nutrition related side effects and beginning of weight loss usually indicates cancer is progressing to an advanced stage.

Highest degree of weight loss is seen with gastric, pancreatic and lung cancer.

Least weight loss is seen in patients with favourable non- Hodgkin's lymphoma, acute nonlymphatic leukaemia, breast cancer and sarcoma.

Protein energy malnutrition is most common. Protein and calories are important for healing,fighting infection and providing energy. Other deficiencies experienced by cancer patients are **vitamins** (Folate, Vitamin A, Vitamin C, and Vitamin D) and **minerals** (Copper, Iron,Magnesium, Zinc, and Calcium).

Cancer cachexia is a syndrome characterised by progressive weight loss, inanition, anorexia,weakness, tissue wasting, and organ dysfunction.

Its causes are multifactorial. Some of them may be-

1. Drop in the intake of food due to
    - local effects caused by cancer:difficulties in swallowing, feeling quickly full up or blockage in the intestines;
    - side effects caused by cancer: loss of appetite, taste and smell alterations, nausea,vomiting, pain;
    - psychological effects such as fear, depression, and anxiety;
    - other side effects like soreness in the mouth or diarrhoea due to the specific cancer therapy being administered.
2. Cancer causes metabolic alterations which increases energy consumption and alters the

way in which the body processes protein, fat and carbohydrate.

Prognosis of the patient with malnutrition

Weight loss negatively influences the prognosis of the cancer patients undergoing treatment as malnourished patients group have increased complications and mortality from all modalities of treatment.

The most common treatments, used alone or in combination, are surgery, chemotherapy,radiotherapy, hormone therapy and immunotherapy (or biological therapy).

Surgery- Surgery is often the preferred treatment for tumours that have not spread.Through surgery, the tumour and any nearby tissue that may contain cancer cells are removed.

Malnourished patients have a higher rate of mortality, a higher rate of major complications and more infectious complications. Healing process is much slower. In a severely malnourished patient, preoperatively if additional nutrients for 8-10 days through oral or pareteral nutrition are given prognosis and surgical outcome is found to be good.

Surgery can be a temporary or permanent nutritional challenge. The operation itself will increase the body's nutritional needs: extra energy (calories) and nutrients (especially proteins) plays an important role in the recovery process, healing wounds and fighting infections.

If surgery includes the removal of all or parts of certain organs, it may affect a patient's ability to eat and digest food. For example: Surgery to the head and neck may cause chewing and swallowing problems. Surgery involving organs in the digestive system may affect the normal function of the digestive system and may slow or interfere with the digestion of food and absorption of nutrients.

Individual assessment of the patients' dietary needs may be helpful here.

Chemotherapy

Severely malnourished have a diminished response to chemotherapy. Chemotherapy itself contributes to malnutrition.

- Cancer drugs may interfere in the blood formation in the bone marrow thus leading to anaemia.
- Cancer drugs may be toxic and produce nausea, vomiting, mucosal ulcers and gastro

- Cancer drugs may be toxic and produce nausea, vomiting, mucosal ulcers and gastro intestinal dysfunction.
- All these will increase the morbidity and mortality. Hence well nourished patient will be able to tolerate the side effects of the drugs.

Radiotherapy

Therapy itself may lead to malnutrition.

Effect of radiotherapy on the severity of malnutrition and weight loss is dependent on radiation doses, duration and volume of therapy and body site being treated. Nutritional alteration may be site specific to local therapy. They can be controlled with specific medical treatments and may be helped by appropriate nutrition support and changes to the diet.

Post treatment period

The psychological effect of having advanced cancer can be deeply worrying for patients and this may further impair their desire to eat or drink

An aggressive nutritional support along with treatment to severely malnourished patients will help in improving the sense of well being for the patients. According to the condition of patient, the nutritional support may be through pareteral or oral route. There is a need for proteins, calories, vitamins and minerals like iron to improve the condition.

Nutrition in advanced cancer

When cancer is not curable, treatment becomes palliative, i.e. focusing on the relief of symptoms rather than treating their cause. Patients may have palliative treatment to help control their cancer symptoms with all their side effects. Nutritional advice for them is very similar to that offered to patients having curative treatment, but the goal of treatment will be aimed more at improving quality of life and providing relief from symptoms

When cancer is advanced, food should be encouraged as a source of enjoyment and it may be appropriate for any dietary restrictions (e.g. diabetic diets) to be stopped or relaxed after discussing with the medical team.

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