



Short Communication

## Nutritional Support in Surgical Gastro-Oncology Patients

Gautam Rawal<sup>1</sup>, Sankalp Yadav<sup>2</sup>, Priyanka Shokeen<sup>3</sup>

<sup>1</sup>Attending Consultant-Critical Care, Rockland Hospital, Qutab Institutional Area, New Delhi, India

<sup>2</sup>General Duty Medical Officer-II, Chest Clinic Moti Nagar, New Delhi, India

<sup>3</sup>Dietician, Rockland Hospital, Qutab Institutional Area, New Delhi, India.

Corresponding Author: Gautam Rawal

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### ABSTRACT

A paradoxical relationship exists between nutrition and cancer. Nutritional support when accompanied with the therapy in cancer patients has been proven to increase the response to treatment, decrease the rate of complications and also reduce the morbidity and mortality associated with the disease and the therapy. In palliative care also, nutritional support aims at improving patient's quality of life.

**Key words:** Enteral nutrition, Gastrointestinal malignancy, Nutritional support.

### INTRODUCTION

A known paradoxical relationship exists between nutrition and cancer. Excessive dietary intake of nutrients or over nutrition (giving rise to obesity and type 2 diabetes) along with decreased physical activity represent the two major modifiable risk factors responsible for cancers of the gastrointestinal (GI) tract, breast, prostate, ovary, endometrium and renal. [1,2]

Paradoxically, malnutrition is frequently observed in gastrointestinal cancer surgical patients and is known to be an independent predictor of pre and postoperative morbidity and mortality, leading to both increased length of hospital stay and hospital costs. Consequently, efforts should be made to provide nutritional support, which includes both enteral nutrition (EN) and immunonutrition, as a

therapeutic adjuvant in the oncological treatment protocols.

### Epidemiology and consequences of malnutrition

The esophageal and gastric cancers are among the leading causes of cancer-related death worldwide due to late presentation and poor prognosis. A therapeutic approach encompassing surgery, chemotherapy and/or chemoradiation are required in a curable or possibly curable disease. [3] Malnutrition accompanies and is observed in around 60–85% of onco-surgical patients with an upper gastrointestinal cancer. [4] It has been shown in studies that malnutrition at the time of surgery has a negative effect on the outcome of the patients undergoing surgery for gastrointestinal malignancy, thus is a predictor of postoperative morbidity and mortality, leading to increased length of

hospital stay and hospital costs. [5,6] There are many factors influencing the nutritional status of the patient-- the disease stage, the choice of treatment used (surgery, chemotherapy and/or radiotherapy). [7] Nutritional support should therefore be aimed as a strong therapeutic tool which acts as an adjuvant to standard oncological therapy.

### **Nutritional interventions**

The goal of nutritional support in cancer patients is aimed at decreasing the pre and postoperative complications so as to prevent early death and also improve the quality of life. It should be promoted and begin early and become a routine part of the therapy of cancer patients. Depending on the individual need of the patient, these goals may be achieved by giving the patient nutritional recommendations and dietary advice, as well as by providing extra nutrition using oral supplements, enteral nutrition through a feeding tube, or parenteral nutrition (PN).

Dietary advice may suffice if the patient is able to consume at least 75% of the required nutritional requirements to maintain good health and there is no radiotherapy, chemotherapy or surgery scheduled. However, an advanced level of nutritional support must be initiated with oral supplementation in patients with malnutrition or when they are unable to consume at least 50–75% of the required nutrition by means of conventional feeding for a period longer than five days. In cases of moderate or severe malnutrition, or when the patient is unable to consume at least 50% of the nutritional requirement through conventional feeding for more than five consecutive days, enteral feeding is initiated. [8,9]

Enteral nutrition is preferred over parenteral nutrition as it preserves the functions of the gastrointestinal tract, preventing bacterial translocation, is cost

effective and cause less iatrogenic complications than PN. [8,9]

In the patients in whom swallowing is affected, like in esophageal cancer, or patients with severe mucositis, the EN can be administered through a nasogastric or nasojejunal tube for duration of two to three weeks. Alternatively, gastrostomy (in esophageal cancer) and jejunostomy (in gastric cancer) feeding may be initiated for the nutritional requirements required for a duration of more than two to three weeks. [3] In a recent study by Grilo et al in 2012, it has been shown that percutaneous endoscopic gastrostomy feeding should be considered as standard definitive nutritional palliation in patients with upper esophageal cancer who are unsuitable for esophageal stenting. [10]

### **ESPEN (European society for clinical nutrition and metabolism) guidelines for the surgical patients: [11]**

- 1) Preoperative parenteral nutrition is indicated in severely undernourished patients who cannot be adequately orally or enterally fed (Grade A).
- 2) Postoperative parenteral nutrition is beneficial in undernourished patients in whom enteral nutrition is not feasible or not tolerated (Grade A).
- 3) Postoperative parenteral nutrition is beneficial in patients with postoperative complications impairing gastrointestinal function who is unable to receive and absorb adequate amounts of oral/enteral feeding for at least 7 days (Grade A).
- 4) In patients who require postoperative artificial nutrition, enteral feeding or a combination of enteral and supplementary parenteral feeding is the first choice (Grade A).
- 5) Preoperative carbohydrate loading using the oral route is recommended in most patients. In the rare patients who cannot eat or are not allowed to drink preoperatively

for whatever reasons the intravenous route can be used (Grade A).

## CONCLUSION

The nutritional status of patients with gastrointestinal (esophageal, gastric, colon) cancer should be assessed not only for identifying the malnourished patients, but it also helps to plan out the treatment plan for the patient. All patients benefit from the nutritional support, whether surgical or medical. Dietary counselling is highly recommended to all patients who receive chemotherapy and/or radiotherapy or undergo surgery.

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