Nutritional Therapy in Gastrointestinal Cancers

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KEYWORDS

• Cancer • Malnutrition • Nutrition screening • Cachexia • Early enteral nutrition • Immunonutrition

KEY POINTS

- Malnutrition is highly prevalent in gastrointestinal cancer and negatively affects patient prognosis.
- Nutritional risk screening and assessment of nutritional status should be performed within the first 24 to 48 hours of hospital admission.
- Nutrition therapy in patients with cancer aims to provide optimal energy and protein to maintain nutritional status and avoid clinical and surgical complications.
- The perioperative nutritional intervention can favorably modify postoperative clinical outcome in patients undergoing elective gastrointestinal surgery.
- Preoperative immunonutrition has been associated with an improvement in immune and anti-inflammatory response, nutritional status, and reduction of postoperative complications in malnourished patients.

INTRODUCTION

Gastrointestinal cancer (GC), including the different organs of the digestive system: esophagus, stomach, liver, gallbladder, pancreas, small intestine, large intestine, rectum, and anus, is the most frequently diagnosed type of cancer worldwide. According to estimates from the World Health Organization, by 2030 the global incidence is expected to increase to 21.7 million cancer cases and 13 million cancer deaths due to the growth and aging of the population. In the United States, GC represents more than 20% of all newly diagnosed cancer cases, with gastric cancer considered the fourth most common type and the second leading cause of cancer death.[1] Most of the cases

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occur in developed countries, and the highest incidence of stomach cancer is in East Asia, Eastern Europe, and Central and South America.[2]

Cancer is one of the diseases with the highest mortality in the world. Over the past decades, despite the considerable progress in reducing incidence and mortalities of cancers, GC remains the second leading cause of cancer-related mortality worldwide.[3]

It has been well reported that GC incidence increases progressively with increasing age, radiation exposure, genetic pattern, family history, central obesity, smoking, and alcohol addiction.[1–3] In epidemiologic studies, diet has been shown to directly affect GC risk. Most recently, the World Cancer Research Fund/American Institute for Cancer Research demonstrated that the excessive consumption of salt-preserved food and processed meats is strongly associated with an increased risk of developing GC. On the other hand, a healthy balanced diet rich in fiber, fruit, and vegetables seems to be associated with lower incidence and reduced overall mortality of all types of cancer.[4]

At cancer diagnosis, nutritional disorders become an emergent issue. Patients with cancer are frequently at risk of malnutrition, not only because of physical and metabolic effects of the disease but also because of adverse consequences of anticancer therapies, and intake changes related to inadequate food consumption or malabsorption.[5] It is now well known that malnutrition is an independent risk factor for increased morbidity, length of hospital stay, higher readmission rates, late recovery, poor quality of life, higher hospital costs, and mortality. For these reasons, the therapeutic approach should be initiated early through assessment and specific nutritional guidance. Individualized nutritional counseling, with or without artificial diets, might increase the food intake, which helps the prevention of important weight loss associated with antineoplastic therapy and improves clinical outcomes. Therefore, this present review has the aim of transmitting an updated and clear vision of the nutritional strategies on the impact of tumor and anticancer treatments on GC.[5–7]

NUTRITIONAL SCREENING AND ASSESSMENT

Early diagnosis of nutritional disorders in patients with cancer is essential to avoid further complications and to improve survival rate.[5–8] Nutritional risk screening and assessment of nutritional status should be performed within the first hours of admission, and factors such as tumor localization and gastrointestinal (GI) dysfunction caused by chemotherapy and radiotherapy treatments must be considered during the screening.

In recent research conducted in 12 countries of Latin America, the prevalence of malnutrition was identified in 40% to 60% of general patients at hospital admission. In addition, the investigators identified that the risk of disease-related malnutrition increased by 20% during the first 2 weeks of hospitalization and was directly associated with further infectious and noninfectious complications, longer hospitalization permanence, and higher treatment costs.[9] At GC diagnosis, the risk of malnutrition might reach up to 80% of patients according to the extension of surgical resection, anticancer treatment, and its related side effects.[10] In a recent systematic review[11] focused on older patients undergoing chemotherapy, the highest prevalence of malnutrition was found in patients with upper GC, mainly related to adverse effects of anticancer therapy. Symptoms such as dry mouth, nausea, stomach pain, and GI motility disorders were the most frequently reported chemotherapy-related symptoms causing impairment of nutritional status.