



Gastrointestinal Cancers

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INTRODUCTION

Cancers arising in the gastrointestinal system are among the most common cancers worldwide. Every year, they account for more than 2.7 million deaths globally and approximately 145,000 deaths in the United States. Gastrointestinal cancers are typically epithelial malignancies—carcinomas—with well-defined pathologic patterns of neoplastic transformation. Risk factors and presentations are site specific, and management usually involves multimodality therapy including surgery, chemotherapy, and radiation therapy. Additional contributors to morbidity from these cancers are the complications of malignancy, including intestinal or biliary obstruction and impaired nutrition due to anatomic and physiologic alteration of the digestive system. Therefore, interventions to palliate symptoms and maintain adequate nutrition are an important component of care.

ESOPHAGEAL CANCER

Epidemiology

Population trends of esophageal cancer are slowly evolving. In the United States, the incidence of esophageal squamous cell carcinoma is declining but the incidence of esophageal adenocarcinoma is rising. These changes mirror the demographic trends in risk factors: prevalence of tobacco and alcohol use, linked to the former, is declining, whereas obesity, reflux disease, and metabolic syndrome, associated with the latter, are increasing.

Pathology

Squamous cell carcinoma is commonly seen in the upper esophagus; it develops, like head and neck cancer, from chronic mucosal injury caused by carcinogens in tobacco smoke and exacerbated by alcohol use. Adenocarcinoma usually arises in the setting of chronic acid reflux and from a background of Barrett's esophagus, involving epithelial metaplasia in the distal esophagus or the gastroesophageal junction. People with Barrett's esophagus have an annual risk of 0.12% of developing this disease, an 11-fold elevation over the general population.

Clinical Presentation

The cardinal symptom of esophageal cancer is dysphagia. Long-standing gastroesophageal reflux disease is often present in adenocarcinoma. Unintentional weight loss due to limited oral intake and other factors is a common clinical association.

Diagnosis

Endoscopy remains the preferred diagnostic test. Visualization for masses and mucosal irregularities yields a quick clinical diagnosis; biopsy of suspicious areas provides histologic confirmation. Endoscopic ultrasound is a useful modality in assessing the T and N components of staging (i.e., depth of tumor invasion into the esophageal wall and beyond, and surrounding lymph node involvement, respectively). Fine-needle aspiration of suspicious lymph nodes can further improve N-staging. Imaging for systemic disease (M-staging) is performed before the therapeutic plan is finalized, preferably with contrast-enhanced computed tomography (CT).

Treatment

If esophageal cancer is diagnosed early (stage I), surgical resection is the treatment of choice. The esophagectomy can be performed with a transthoracic (Ivor-Lewis) or a transhiatal technique, with comparable clinical outcomes. For locally advanced disease (stages II and III), multimodality therapy is required. This consists of chemotherapy, radiation therapy, and surgery. Combined chemoradiation using 5-fluorouracil (5-FU) and cisplatin remains the standard of care for squamous cell cancer; in this setting, surgery may be foregone, especially for cervical esophagus tumors, because chemoradiation can provide good disease control. For adenocarcinomas of the distal esophagus and gastroesophageal junction, there are competing standards of care, including perioperative chemotherapy using epirubicin, cisplatin, and 5-FU; preoperative chemoradiation using paclitaxel and carboplatin; or surgery followed by adjuvant chemotherapy and radiation using 5-FU-based regimens.

For advanced disease (stage IV), combination chemotherapy can improve survival. Trastuzumab is a monoclonal antibody directed against human epidermal growth factor receptor 2 (HER2), a cell surface receptor that signals cellular proliferation. The addition of this agent to standard chemotherapy is of benefit in adenocarcinomas of the gastroesophageal junction that exhibit overexpression of HER2. Supportive care and palliative interventions for dysphagia, such as local irradiation and placement of a feeding tube, can improve quality of life.

Prognosis

Early-stage (stage I) esophageal cancer is curable. Rates of cure for locally advanced (stage II or III) disease are lower, and metastatic disease (stage IV) remains incurable. Five-year survival rates with appropriate treatment are 70%, 40%, 30%, and 5% for stages I, II, III, and IV, respectively.