

[Send to Printer](#)

Gastric Cancer (PDQ®): Treatment Health Professional Version

Last Modified: 11/30/2006

General Information

Note: Separate PDQ summaries on [Prevention of Gastric Cancer](#)¹ and [Screening for Gastric Cancer](#)² are also available.

Note: Estimated new cases and deaths from gastric cancer in the United States in 2006:[1]

- New cases: 22,280.
- Deaths: 11,430.

In the United States, gastric cancer ranks 14th in incidence among the major types of cancer malignancies. While the precise etiology is unknown, acknowledged risk factors for gastric cancer include:[2-4]

- *Helicobacter pylori* gastric infection.
- Advanced age.
- Male gender.
- Diet low in fruits and vegetables.
- Diet high in salted, smoked, or preserved foods.
- Chronic atrophic gastritis.
- Intestinal metaplasia.
- Pernicious anemia.
- Gastric adenomatous polyps.
- Family history of gastric cancer.
- Cigarette smoking.
- Menetrier's disease (giant hypertrophic gastritis).
- Familial adenomatous polyposis.

Management of adenocarcinoma histology, which accounts for 90% to 95% of all gastric malignancies, is discussed in this summary. The site of cancer origin within the stomach has changed in frequency in the United States over recent decades.[5] Cancer of the distal half of the stomach has been decreasing in the United States since the 1930s. However, in the last 2 decades, the incidence of cancer of the cardia and gastroesophageal junction has been rapidly rising. The incidence of this cancer has increased dramatically, especially in patients younger than 40 years.

The prognosis of patients with gastric cancer is related to tumor extent and includes both nodal involvement and direct tumor extension beyond the gastric wall.[6,7] Tumor grade may also provide some prognostic information.[8]

In localized distal gastric cancer, more than 50% of patients can be cured. However, early-stage disease accounts for only 10% to 20% of all cases diagnosed in the United States. The remaining patients present with metastatic disease in either regional or distant sites. The overall survival rate in these patients at 5

years ranges from almost no survival for patients with disseminated disease to almost 50% survival for patients with localized distal gastric cancers confined to resectable regional disease. Even with apparent localized disease, the 5-year survival rate of patients with proximal gastric cancer is only 10% to 15%. Although the treatment of patients with disseminated gastric cancer may result in palliation of symptoms and some prolongation of survival, long remissions are uncommon.

Radical surgery represents the standard form of therapy having curative intent. The incidence of local failure in the tumor bed and regional lymph nodes, and distant failure via hematogenous or peritoneal routes, however, remain high.[9] Therefore, adjuvant therapy has been evaluated. Chemotherapy or radiation therapy as single adjuvant modalities have not significantly altered overall survival patterns. Adjuvant postoperative 5-fluorouracil (5-FU)-based chemotherapy following curative resection for localized gastric cancer demonstrated no survival benefit in a meta-analysis of randomized trials published since 1980.[3,10] A prospective randomized trial from the British Stomach Cancer Group failed to demonstrate a survival benefit for postoperative adjuvant radiation alone, although locoregional failures were decreased from 27% to 10.6%.[4]

Adjuvant external-beam radiation therapy with combined chemotherapy has been evaluated in the United States. In a phase III intergroup trial (INT-0166), 556 patients with completely resected stage IB to stage IV (M0) adenocarcinoma of the stomach and gastroesophageal junction were randomized to receive surgery alone or surgery plus postoperative chemotherapy (5-FU and leucovorin) and concurrent radiation therapy (45 Gy). With 5 years' median follow-up, a significant survival benefit has been reported for adjuvant combined modality therapy.[11] Median survival was 36 months for the adjuvant chemoradiation group as compared to 27 months for the surgery-alone arm ($P = .005$). Three-year overall survival and relapse-free survival were 50% and 48% with adjuvant chemoradiation versus 41% and 31% for surgery alone ($P = .005$). Neoadjuvant chemoradiation therapy is under clinical evaluation.[12]

Gastrointestinal stromal tumors occur most commonly in the stomach. (Refer to the PDQ summary on [Adult Soft Tissue Sarcoma Treatment](#)³ for more information.)

References

1. American Cancer Society.: Cancer Facts and Figures 2006. Atlanta, Ga: American Cancer Society, 2006. [Also available online.](#)⁴ Last accessed December 14, 2006.
2. Kurtz RC, Sherlock P: The diagnosis of gastric cancer. *Semin Oncol* 12 (1): 11-8, 1985. [[PUBMED Abstract](#)]
3. Scheiman JM, Cutler AF: Helicobacter pylori and gastric cancer. *Am J Med* 106 (2): 222-6, 1999. [[PUBMED Abstract](#)]
4. Fenoglio-Preiser CM, Noffsinger AE, Belli J, et al.: Pathologic and phenotypic features of gastric cancer. *Semin Oncol* 23 (3): 292-306, 1996. [[PUBMED Abstract](#)]
5. Blot WJ, Devesa SS, Kneller RW, et al.: Rising incidence of adenocarcinoma of the esophagus and gastric cardia. *JAMA* 265 (10): 1287-9, 1991. [[PUBMED Abstract](#)]
6. Siewert JR, Böttcher K, Stein HJ, et al.: Relevant prognostic factors in gastric cancer: ten-year results of the German Gastric Cancer Study. *Ann Surg* 228 (4): 449-61, 1998. [[PUBMED Abstract](#)]
7. Nakamura K, Ueyama T, Yao T, et al.: Pathology and prognosis of gastric carcinoma. Findings in 10,000 patients who underwent primary gastrectomy. *Cancer* 70 (5): 1030-7, 1992. [[PUBMED Abstract](#)]
8. Adachi Y, Yasuda K, Inomata M, et al.: Pathology and prognosis of gastric carcinoma: well versus poorly differentiated type. *Cancer* 89 (7): 1418-24, 2000. [[PUBMED Abstract](#)]

9. Gunderson LL, Sosin H: Adenocarcinoma of the stomach: areas of failure in a re-operation series (second or symptomatic look) clinicopathologic correlation and implications for adjuvant therapy. *Int J Radiat Oncol Biol Phys* 8 (1): 1-11, 1982. [\[PUBMED Abstract\]](#)
10. Chang HM, Jung KH, Kim TY, et al.: A phase III randomized trial of 5-fluorouracil, doxorubicin, and mitomycin C versus 5-fluorouracil and mitomycin C versus 5-fluorouracil alone in curatively resected gastric cancer. *Ann Oncol* 13 (11): 1779-85, 2002. [\[PUBMED Abstract\]](#)
11. Macdonald JS, Smalley SR, Benedetti J, et al.: Chemoradiotherapy after surgery compared with surgery alone for adenocarcinoma of the stomach or gastroesophageal junction. *N Engl J Med* 345 (10): 725-30, 2001. [\[PUBMED Abstract\]](#)
12. Ajani JA, Radiation Therapy Oncology Group: Phase II Study of Preoperative Chemotherapy and Chemoradiotherapy in Patients With Potentially Resectable Adenocarcinoma of the Stomach, RTOG-9904, Clinical trial, Completed. [\[PDQ Clinical Trial\]](#) ⁵

Table of Links

- 1 <http://cancer.gov/cancertopics/pdq/prevention/gastric/HealthProfessional>
- 2 <http://cancer.gov/cancertopics/pdq/screening/gastric/HealthProfessional>
- 3 <http://cancer.gov/cancertopics/pdq/treatment/adult-soft-tissue-sarcoma/HealthProfessional>
- 4 <http://www.cancer.org/downloads/STT/CAFF2006PWSecured.pdf>
- 5 <http://cancer.gov/search/viewclinicaltrials.aspx?version=healthprofessional&cdrid=67026>