



Gastric Cancer Management: The Role of Postoperative Chemotherapy in Disease Control

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DESCRIPTION

Gastric cancer, also known as stomach cancer, presents a significant global health burden, categorized among the leading causes of cancer-related mortality worldwide. Despite the advancements in diagnosis and treatment, the management of gastric cancer remains complex, with surgery serving as a fundamental of curative-intent therapy for resectable disease. However, the risk of disease recurrence following surgical resection highlights the importance of adjuvant therapies, particularly postoperative chemotherapy.

Understanding gastric cancer

Gastric cancer arises from the lining of the stomach and surrounded by a heterogeneous group of malignancies with diverse histological subtypes and molecular characteristics. While the incidence of gastric cancer has declined in many high-income countries, it remains prevalent in regions with high rates of *Helicobacter pylori* infection and dietary risk factors.

Patients with gastric cancer often present with nonspecific symptoms in the early stages of the disease, leading to delayed diagnosis and advanced disease at the time of presentation. Surgical resection with curative intent, typically in the form of gastrectomy with lymphadenectomy, is the primary treatment methods for localized or locally advanced gastric cancer. However, despite optimal surgical management, a significant proportion of patients experience disease recurrence, highlighting the need for adjuvant therapies to improve outcomes.

Rationale for postoperative chemotherapy

Postoperative chemotherapy, also known as adjuvant chemotherapy, aims to eradicate residual cancer cells, prevent disease recurrence, and improve survival outcomes following surgical resection of gastric cancer. The rationale for adjuvant chemotherapy is based on the premise that micro metastatic

disease may be present at the time of surgery, even in patients with apparently localized tumors.

Several clinical trials have demonstrated the efficacy of postoperative chemotherapy in improving survival outcomes for patients with gastric cancer. The landmark INT-0116 trial, conducted in the United States, established the benefit of adjuvant chemoradiotherapy following surgical resection of gastric cancer, leading to a standard of care in the west. Subsequent trials, primarily conducted in Asian populations, have evaluated the role of postoperative chemotherapy alone or in combination with targeted therapies, such as trastuzumab in HER2-positive disease.

Chemotherapeutic regimens

The choice of chemotherapeutic regimen for postoperative chemotherapy in gastric cancer depends on various factors, including disease stage, patient characteristics, and institutional practices. Platinum-based chemotherapy, typically with cisplatin or oxaliplatin, is frequently incorporated into adjuvant treatment protocols for gastric cancer, either as a single agent or in combination with fluoropyrimidine. The addition of taxanes, such as paclitaxel or docetaxel, to platinum-based regimens has also demonstrated efficacy in improving survival outcomes for patients with gastric cancer.

Furthermore, the identification of molecular subtypes and predictive biomarkers, such as HER2 overexpression and Microsatellite Instability (MSI), has led to the development of targeted therapeutic approaches in gastric cancer. HER2-targeted therapies, such as trastuzumab, in combination with chemotherapy have shown significant survival benefits in patients with HER2-positive gastric cancer, while immune checkpoint inhibitors are being investigated in MSI-high tumors.

Clinical considerations

The administration of postoperative chemotherapy in gastric cancer requires careful consideration of patient factors,

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treatment-related toxicities, and treatment duration. Adjuvant chemotherapy is typically initiated within 6-8 weeks following surgical resection, allowing adequate time for surgical recovery and wound healing.

During the course of chemotherapy, patients undergo regular clinical assessments, laboratory monitoring, and imaging studies to evaluate treatment response, monitor for disease recurrence, and manage treatment-related toxicities. Common adverse effects of chemotherapy include nausea, vomiting, fatigue, myelosuppression, and peripheral neuropathy, which may necessitate dose modifications or supportive care interventions.

In addition to standard chemotherapy regimens, ongoing clinical trials are exploring novel treatment strategies, including the integration of targeted therapies, immunotherapies, and precision medicine approaches, in the adjuvant setting for gastric cancer. Biomarker-driven treatment selection and personalized therapeutic strategies hold potential in optimizing treatment outcomes and minimizing treatment-related toxicities for patients undergoing postoperative chemotherapy.

Postoperative chemotherapy plays a pivotal role in the multimodal management of gastric cancer, aiming to reduce the risk of disease recurrence and improve long-term survival outcomes following surgical resection. While surgical intervention remains as the fundamental of curative-intent therapy for gastric cancer, adjuvant chemotherapy provides an essential adjunctive strategy to address residual disease and micro metastases.

Through advances in treatment protocols, chemotherapy regimens, and personalized therapeutic approaches, oncologists continue to refine and optimize adjuvant treatment strategies for gastric cancer patients. By embracing a multidisciplinary approach, integrating targeted therapies and immunotherapies, and exploiting the biomarker-driven treatment selection, clinicians can strive towards improving outcomes and enhancing quality of life for patients undergoing postoperative chemotherapy in the fight against gastric cancer.