

Esophageal/GEJ/Gastric Cancer

Note: For Medicare members/enrollees, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Please refer to the CMS website at <http://www.cms.gov> for additional information.

Note: For Medicaid members/enrollees, circumstances when state Medicaid coverage provisions conflict with the coverage provisions within this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

DISCUSSION

Esophageal cancer is more common in men than women. The lifetime risk of esophageal cancer in the United States is about 1 in 125 in men and about 1 in 417 in women. Many people with esophageal cancer may die from this disease, but treatment has improved, and survival rates are improving as time progresses.¹ Radiation therapy is one of the ways that esophageal cancer can be treated.²

Gastric cancer accounts for about 1.5% of all new cancers diagnosed in the U.S. each year. For much of the early 20th century, stomach cancer was the leading cause of cancer death in the United States, but today, death rates have decreased because of the treatments available. Gastric cancer incidences annually are approximately 27,000 cases.³ Radiation therapy is one of the ways that gastric cancer can be treated.

Esophageal Cancer

General Guidelines

Make treatment recommendations after joint consultation and/or discussion by a multidisciplinary team including surgical oncologists, radiation oncologists, medical oncologists, radiologists, gastroenterologists, and pathologists.

External beam radiation therapy (EBRT) and brachytherapy are the two main types of radiation therapy used in esophageal cancer. EBRT is the one that is most used, whereas brachytherapy is not used as often. High-dose rate (HDR) or low-dose rate (LDR) brachytherapy can be given. There are other types of radiation therapy currently studied for the treatment of esophageal cancer. This includes intensity-modulated radiotherapy (IMRT), a type of EBRT, as well as proton therapy. For a tumor that has not spread beyond the esophagus and lymph nodes, doctors often recommend combining radiation therapy, chemotherapy, and surgery.^{4,5}

For advanced or metastatic esophageal cancer, treatment usually involves radiation therapy, chemotherapy, and other systematic therapies. Radiation therapy may be utilized to treat pain in patients with esophageal cancer.^{4,5}

Gastric Cancer

General Guidelines

In general, Siewert I and II tumors should be managed with radiation therapy guidelines applicable to esophageal and GEJ cancers. Image guidance may be used appropriately to enhance clinical targeting. In patients with gastric cancer, radiation therapy may be utilized by itself or along with chemotherapy. Radiation therapy may be utilized to help patients to feel more comfortable by reducing their symptoms. Treatment recommendations depend on the location of the bulk of the tumor. Radiation may be utilized as preoperative treatment, in combination with chemotherapy, as adjuvant post-operative treatment, and as a palliative therapy for gastric cancer.⁶

Image-guided radiation therapy (IGRT) is a type of radiation therapy that is often used for patients with gastric cancer. Due to the ability of the stomach to shift when people breathe, radiation therapists use respiratory gating to deliver

radiation at specific points in the patients breathing cycle. Real-time CT scans are used during the treatment session to determine the best position of the tumor for administering radiation.⁶

IMRT is appropriate for curative treatment of esophageal and gastric cancer where the risk of critical structure exposure would be excessive with 3D conformal treatment. This would be in cases where 3D planning has been done with appropriate techniques to limit toxicity, but organ at risk limits have been exceeded and IMRT demonstrates improvement to tissue exposure to within safe ranges. IMRT may also be used to treat a previously irradiated field.⁶

DEFINITIONS

- **Brachytherapy (BT)** - Brachytherapy is a procedure that involves placing radioactive material inside your body. Brachytherapy is sometimes called internal radiation.
- **Definitive radiation therapy** - Radiation therapy used with curative intent.
- **External beam radiation therapy (EBRT)** - External radiation (or external beam radiation) is the most common type of radiation therapy used for cancer treatment. A machine is used to aim high-energy rays (or beams) from outside the body into the tumor.
- **Fractions** - A way of dividing a total dose of radiation into separate doses to be administered over a period of time.
- **Gray (Gy)** - One of the two units used to measure the amount of radiation absorbed by an object or person, known as the absorbed dose. One gray (Gy) is the international system of units (SI) equivalent of 100 rads, which is equal to an absorbed dose of 1 Joule/kilogram.
- **Image-guided radiation therapy (IGRT)** - Image-guided radiation therapy (IGRT) is the use of imaging during radiation therapy to improve the precision and accuracy of treatment delivery. IGRT is used to treat tumors in areas of the body that move, such as the lungs. Radiation therapy machines are equipped with imaging technology to allow your doctor to image the tumor before and during treatment. By comparing these images to the reference images taken during simulation, the patient's position and/or the radiation beams may be adjusted to more precisely target the radiation dose to the tumor. To help align and target the radiation equipment, some IGRT procedures may use fiducial markers, ultrasound, MRI, X-ray images of bone structure, CT scan, 3D body surface mapping, electromagnetic transponders, or colored ink tattoos on the skin.
- **Intensity-modulated radiotherapy (IMRT)** - Intensity-modulated radiation therapy (IMRT) is an advanced mode of high-precision radiotherapy that uses computer-controlled linear accelerators to deliver precise radiation doses to a malignant tumor or specific areas within the tumor. IMRT allows the radiation dose to conform more precisely to the three-dimensional shape of the tumor by controlling the intensity of the radiation beam in multiple small volumes. IMRT also allows higher radiation doses to be focused to regions within the tumor while minimizing the dose to surrounding normal critical structures.
- **National Comprehensive Cancer Network® (NCCN)** - An alliance of 32 leading cancer centers devoted to patient care, research, and education. The NCCN guidelines are utilized for Radiation Therapy and Medical Oncology standards. NCCN consensus clinical standards are periodically updated and NantHealth, Inc. reviews these and updates its policies within a timely manner.
- **Palliative Radiation Therapy** - Treatment given to help relieve the symptoms and reduce the suffering caused by cancer or other life-threatening diseases. Palliative therapy may help a person feel more comfortable, but it does not treat or cure the disease. Palliative therapy may be given with other treatments from the time of diagnosis until the end of life.
- **Stereotactic body radiation therapy (SBRT)** - Treatment outside the brain is called stereotactic body radiation therapy (SBRT). SBRT may be used for certain lung, spine, and liver tumors.
- **Three dimensional conformal radiation therapy (3D-CRT)** - A procedure that uses a computer to create a three dimensional picture of the tumor. This allows doctors to give the highest possible dose of radiation to the tumor, while sparing the normal tissue as much as possible.

POLICY

The following table outlines the criteria that must be met for the number of fractions and dosing relative to esophageal cancer radiation treatments. This dosing table represents evidence-based doses and fractions for the designated type of cancer treatment. Variations outside of the ranges may indicate a deviation from standard treatment.

Esophageal/GEJ Cancer			
	Number of Fractions	Total Dose	Technique
Preoperative with chemotherapy	23-28	41.4-50.4 Gy	IMRT, 3D, IGRT
Postoperative with chemotherapy	25-28	45-50.4 Gy	IMRT, 3D, IGRT
Definitive with chemotherapy	25-28	50-50.4 Gy	IMRT, 3D, IGRT
Palliative	1-15	8-37.5 Gy	3D

The following table outlines the criteria that must be met for the number of fractions and dosing relative to gastric cancer radiation treatments. This dosing table represents evidence-based doses and fractions for the designated type of cancer treatment. Variations outside of the ranges may indicate a deviation from standard treatment.

Gastric Cancer			
	Number of Fractions	Total Dose	Technique
Pre-operative with chemotherapy	25-28	45-50.4 Gy	3D, IMRT, IGRT
Post-operative with chemotherapy	25-28	45-50.4 Gy	3D, IMRT, IGRT
Definitive with chemotherapy	25-30	45-54 Gy	3D, IMRT, IGRT
Palliative	1-15	8-37.5 Gy	3D

REFERENCES

1. Key statistics for esophageal cancer. American Cancer Society. <https://www.cancer.org/cancer/esophagus-cancer/about/key-statistics.html>. Accessed May 5, 2022.
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3. Key statistics about stomach cancer. American Cancer Society Web site. <https://www.cancer.org/cancer/stomach-cancer/about/key-statistics.html>. Accessed May 5, 2022
4. Esophageal cancer: types of treatment. Cancer.Net. <https://www.cancer.net/cancer-types/esophageal-cancer/types-treatment>. Accessed May 2, 2022.
5. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Esophageal and Esophagogastric Junction Cancers. (Version 2.2022). Available at https://www.nccn.org/professionals/physician_gls/pdf/esophageal.pdf. ©National Comprehensive Cancer Network, 2022.
6. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Gastric Cancer. (Version 2.2022). Available at https://www.nccn.org/professionals/physician_gls/pdf/gastric.pdf. ©National Comprehensive Cancer Network, 2022.

Please see all related radiation therapy treatment policies for additional information on the treatment modalities. (3D-CRT, EBRT, IGRT and IMRT)

CODING [ICD-10, HCPCS]*

*Procedure codes appearing in medical policy documents are only included as a general reference. This list may not be all-inclusive and is subject to updates. In addition, codes listed are not a guarantee of payment. CPT codes are available through the AMA.

Code	Description
C15.3 - C15.9	Malignant neoplasm esophagus
C16.0 - C16.9	Malignant neoplasm stomach
D00.1	Carcinoma in-situ, esophagus
G6015	Intensity modulated Treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session
G6016	Compensator-based beam modulation treatment delivery of inverse planned treatment using 3 or more high resolution (milled or cast) compensator convergent beam modulated fields, per treatment session
G0339	Image guided robotic linear accelerator-based stereotactic radiosurgery, complete course of therapy in one session or first session of fractionated treatment
G0340	Image guided robotic linear accelerator-based stereotactic radiosurgery, delivery including collimator changes and custom plugging, fractionated treatment, all lesions, per session, second through fifth sessions, maximum 5 sessions per course of treatment
Z51.5	Encounter for palliative care
Z92.3	Personal history of irradiation

REVISION AND REVIEW HISTORY

No.	Description	Metadata
1	Original Effective Date:	5/2022
2	Policy Review Dates:	5/4/2022, 5/5/2022, 5/10/2022, 5/13/2022, 5/31/2022, 7/20/2022
3	Policy Revision Dates:	5/4/2022, 5/5/2022, 5/10/2022, 5/13/2022, 5/31/2022, 7/20/2022
4	Department Owner:	Medical Affairs
5	NH Advisory Committee Approval Dates:	5/14/2022, 5/31/2022
6	Revision Changes:	

