

National Imaging Associates, Inc.*	
Clinical guidelines: SMALL CELL LUNG CANCER	Original Date: March 2011
Radiation Oncology	Last Revised Date: January 2022
Guideline Number: NIA_CG_123	Implementation Date: January 2023

INDICATIONS FOR RADIATION THERAPY

Limited-Stage SCLC (T1-2, N1-N3 M0)¹

2D or 3D Conformal Radiation Therapy (3DCRT)

Dosage Guidelines:

- Up to 39 fractions is medically necessary

Extensive-Stage SCLC (T any, N any, M1a/b)¹

2D or 3D Conformal Radiation Therapy (3DCRT) Radiation therapy to treat symptomatic sites or treatment of cord compression

Dosage Guidelines:

- Up to 39 fractions is medically necessary

Prophylactic cranial irradiation (PCI) is indicated for Limited and Extensive SCLC.¹ PCI is used to decrease the incidence of central nervous system metastases and prolong survival.

- 2D or 3D Conformal Radiation Therapy (3DCRT)

Dosage Guidelines

- 5 -15 fractions is medically necessary

TREATMENT OPTIONS REQUIRING PHYSICIAN REVIEW

Intensity Modulated Radiation Therapy (IMRT)

IMRT is not indicated as a standard treatment option and should not be used routinely for the delivery of radiation therapy for small cell lung cancer. IMRT may be appropriate for limited circumstances in which radiation therapy is indicated and 3D conformal radiation therapy (3D-CRT) techniques cannot adequately deliver the radiation prescription without exceeding normal tissue radiation tolerance, the delivery is anticipated to contribute to potential late toxicity or

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tumor volume dose heterogeneity is such that unacceptable hot or cold spots are created. If IMRT is utilized, techniques to account for respiratory motion should be performed.

Clinical rationale and documentation for performing IMRT rather than 2D or 3D-CRT treatment planning and delivery will need to:

- Demonstrate how 3D-CRT isodose planning cannot produce a satisfactory treatment plan (as stated above) via the use of a patient-specific dose volume histograms and isodose plans.
- Provide tissue constraints for both the target and affected critical structures.

Hippocampal Sparing Intensity Modulated Radiation Therapy for PCI¹⁻³

- The use of hippocampal avoidance with WBRT, using IMRT, lowers the risks of neurocognitive decline (specifically memory and recall), and now supported with level 1 evidence

Dosage Guidelines

- 25Gy in 10 fractions is considered medically necessary

Proton Beam Radiation Therapy

Proton beam is not an approved treatment option for small cell lung cancer. There are limited clinical studies comparing proton beam therapy to 3-D conformal radiation. Overall, studies have not shown clinical outcomes to be superior to conventional radiation therapy.

Stereotactic Body Radiation Therapy (SBRT)^{1, 4-11}

SBRT is approvable for clinical stage I to IIA (T1-2,N0) Small Cell Lung Cancer who are medically inoperable or refuse surgery.

THE FOLLOWING APPLIES TO CMS (MEDICARE) MEMBERS ONLY:

For Proton Beam Radiation Therapy refer to Local Coverage Determination (LCD), if applicable.

BACKGROUND

The two major types of lung cancer are small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC). SCLC differs significantly from NSCLC in that most patients with SCLC present with subclinical metastatic disease. Patients with SCLC are divided into those with limited- versus extensive-stage disease.¹² Although limited-stage disease is confined to the ipsilateral hemithorax, a third of these patients have subclinical systemic disease. Extensive-stage disease is defined as disease extending beyond the ipsilateral hemithorax, including positive pleural/pericardial effusion or distant metastases.¹² Systemic chemotherapy is an essential

component of appropriate treatment for all SCLC patients, even those with limited-stage disease.

This guideline outlines methods suitable for the delivery of radiation therapy to treat SCLC. Radiation therapy may be delivered using conventional, accelerated fractionation, hyperfractionated regimens and prophylactic cranial irradiation. Three-dimensional conformal radiation therapy (3D-CRT) is the preferred technique. If image-guided radiation therapy is utilized, techniques to account for respiratory motion should be performed. The goal of this guideline is to guide diagnosis and treatment to the most efficient, comparatively effective, diagnostic and treatment pathway.

SCLC is highly sensitive to initial chemotherapy and radiation therapy; however, a cure is difficult to achieve because SCLC generally has a rapid doubling time, a high growth fraction, and early development of widespread metastases.

The treatment goal in patients with limited-stage disease is to achieve a cure with chemotherapy combined with thoracic radiation therapy. In patients with extensive-stage disease, this combined modality treatment does not improve survival compared with chemotherapy alone, but radiation therapy plays a role in palliation of symptoms. All patients with SCLC require systemic chemotherapy and where radiation therapy is utilized, it should be delivered concurrently with chemotherapy.¹² Patients with both limited- and extensive-stage disease may benefit from prophylactic cranial irradiation (PCI), decreasing the incidence of central nervous system metastases and prolonging survival. Two-dimensional, post lateral fields should be used in PCI treatment.

POLICY HISTORY

Date	Summary
January 2022	<ul style="list-style-type: none"> • Added Hippocampal Sparing Intensity Modulated Radiation Therapy for PCI, including dosage guidelines • Updated SBRT as “approvable for clinical stage I to IIA (T1-2,N0) Small Cell Lung Cancer who are medically inoperable or refuse surgery” • Deleted “Stereotactic Body Radiation Therapy (SBRT) is not considered a standard form of treatment for SCL cancer. SBRT may be considered medically necessary to treat a previously irradiated field A request for SBRT will require a peer review to make a medical necessity determination.”
February 2021	<p>Guideline Clarification: Deleted: Stereotactic Body Radiation Therapy (SBRT) is not considered a standard form of treatment for SCL cancer. Overall, studies have not shown clinical outcomes to be superior to conventional radiation therapy. A request for SBRT will require a peer review to make a medical necessity determination.</p>

	Added: Stereotactic Body Radiation Therapy (SBRT) is not considered a standard form of treatment for SCL cancer. SBRT may be considered medically necessary to treat a previously irradiated field A request for SBRT will require a peer review to make a medical necessity determination.
February 2020	No changes
February 2019	Added and updated references

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ADDITIONAL RESOURCES

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Reviewed / Approved by NIA Clinical Guideline Committee

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

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