Small Cell Lung Cancer (SCLC)

Note: Consider Clinical Trials as treatment options for eligible patients.

### INITIAL EVALUATION

- Pathology consistent with SCLC
- History and physical
- Laboratory studies to include hematological and full chemistry panels
- FDG PET/CT and CT chest with IV contrast
  - If FDG PET/CT not available: nuclear medicine bone scan and CT chest, abdomen, and pelvis with IV contrast
- MRI brain with IV contrast (preferred) or CT head with IV contrast
- MRI spine, lumbar puncture and bone marrow aspirate/biopsy as indicated
- Pulmonary function tests
- Lifestyle risk assessment¹
- Molecular profiling (for never smokers)

### STAGE

**Limited Stage**
- AJCC Stage I-III², see Page 2

**Extended Stage**
- AJCC Stage IV³, see Page 3

AJCC = American Joint Committee on Cancer

¹ See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice

² Limited stage: Stage I-III (T any, N any, M0) per AJCC 8th edition or disease confined to the ipsilateral hemithorax within a single radiation port

³ Extensive stage: Stage IV (T any, N any, M 1a/b) per AJCC 8th edition or disease beyond ipsilateral hemithorax or malignant pleural effusion or obvious metastatic disease
Small Cell Lung Cancer (SCLC)

**Note:** Consider Clinical Trials as treatment options for eligible patients.

**STAGE**
- Limited Stage
  - AJCC Stage I-III (LS-SCLC)
- Discuss Goal Concordant Care (GCC) with patient or if clinically indicated, with Patient Representative

**FINDINGS**
- Is patient potentially operable?
  - Yes
    - Resection
    - Lymph nodes and margins negative
    - Adjuvant platinum plus etoposide for 4 cycles
  - Lymph nodes and/or margins positive
    - See Box A below
  - T1-2, N0, M0
    - EBUS or Mediastinoscopy
  - T3-4, N0, M0; T1-4, N1-3, M0
    - Performance status (PS)

**TREATMENT**
- Lymph nodes and margins negative
  - Adjuvant platinum plus etoposide for 4 cycles
- Lymph nodes and/or margins positive
  - See Box A below
- Chemotherapy and radiation therapy or SBRT followed by adjuvant platinum plus etoposide for 4 cycles

**Box A**
- PCI of 25 Gy in 10 daily fractions or MRI Brain surveillance
- Surveillance, see Page 4

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1 GCC should be initiated by the Primary Oncologist. If Primary Oncologist is unavailable, Primary Team/Attending Physician to initiate GCC discussion and notify Primary Oncologist. Patients, or if clinically indicated, the Patient Representative should be informed of therapeutic and/or palliative options. GCC discussion should be consistent, timely, and re-evaluated as clinically indicated. The Advance Care Planning (ACP) note should be used to document GCC discussion. Refer to GCC home page (for internal use only).
2 Start radiation therapy within the first 2 cycles of chemotherapy

EBUS = endobronchial ultrasound
PCI = prophylactic cranial irradiation
SBRT = stereotactic body radiation therapy
Small Cell Lung Cancer (SCLC)

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Note: Consider Clinical Trials as treatment options for eligible patients.

STAGE

- Extensive Stage AJCC Stage IV (ES-SCLC)
- Discuss GCC with patient or if clinically indicated, with Patient Representative

Are brain metastases or epidural/cord compression present?

Yes

- If asymptomatic: may administer systemic therapy prior initiating WBRT
- If symptomatic: WBRT followed by systemic therapy

Chemotherapy and immunotherapy

● Chest radiation therapy of 45 Gy in 15 fractions and
● One of the following:
  ○ PCI of 25 Gy in 10 fractions or
  ○ Serial brain imaging with IV contrast (see frequency on Page 4)

No

Partial or complete response?

Yes

Maintenance immunotherapy continued in the absence of progression or toxicity

No

STAGE

- Stable disease
  - Consider:
    ○ Standard systemic therapy or clinical trial
    ○ Palliative radiation therapy if indicated for brain, chest, or bone involvement

- Progressive disease

TREATMENT

- Surveillance, see Page 4

PCI = prophylactic cranial irradiation
WBRT = whole brain radiation therapy

1 GCC should be initiated by the Primary Oncologist. If Primary Oncologist is unavailable, Primary Team/Attending Physician to initiate GCC discussion and notify Primary Oncologist. Patients, or if clinically indicated, the Patient Representative should be informed of therapeutic and/or palliative options. GCC discussion should be consistent, timely, and re-evaluated as clinically indicated. The Advance Care Planning (ACP) note should be used to document GCC discussion. Refer to GCC home page (for internal use only).

2 Refer to Principles of Systemic Therapy on Page 5

3 For selected patients with residual thoracic disease and low-bulk extrathoracic metastatic disease that has responded to systemic therapy

4 The role of PCI is controversial in ES-SCLC (without brain metastasis) and is an option to selected patients. Consider holding immunotherapy during radiation.

5 MRI brain preferred over CT as it is more sensitive in identifying brain metastases
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SURVEILLANCE

- History and physical
- CT chest, abdomen, and pelvis with IV contrast and FDG PET/CT as clinically indicated
- Imaging of involved sites every 2-3 months for 2 years, then every 6 months for 3 years, then yearly
- MRI brain with IV contrast recommended with other surveillance imaging as above, for extensive stage patients and for limited stage who did not get PCI

SALVAGE/PALLIATION

Yes

- Clinical trial (preferred)
- Subsequent systemic therapy (see Page 5 for Principles of Systemic Therapy)
  - For relapsed localized disease, consider salvage concurrent chemotherapy and radiation (or) radiation alone if patient unable to tolerate chemotherapy
- Palliative symptom management including localized radiation therapy
- Discuss GCC with patient or if clinically indicated, with Patient Representative

No

Continue surveillance

1 For patients already on maintenance immunotherapy, continue in the absence of progression or toxicity
2 MRI brain preferred over CT as it is more sensitive in identifying brain metastases
3 GCC should be initiated by the Primary Oncologist. If Primary Oncologist is unavailable, Primary Team/Attending Physician to initiate GCC discussion and notify Primary Oncologist. Patients, or if clinically indicated, the Patient Representative should be informed of therapeutic and/or palliative options. GCC discussion should be consistent, timely, and re-evaluated as clinically indicated. The Advance Care Planning (ACP) note should be used to document GCC discussion. Refer to GCC home page (for internal use only).
First-line therapy

Acceptable regimens for limited stage disease (maximum of 4-6 cycles) include:

- Cisplatin 60 mg/m² IV on Day 1 and etoposide 120 mg/m² IV on Days 1, 2, 3
- Cisplatin 75 mg/m² IV on Day 1 and etoposide 100 mg/m² IV on Days 1, 2, 3
- Cisplatin 25 mg/m² IV on Days 1, 2, 3 and etoposide 100 mg/m² Days 1, 2, 3
- Carboplatin AUC 5-6 IV on Day 1 and etoposide 100 mg/m² IV on Days 1, 2, 3

- During systemic therapy plus radiation therapy, cisplatin/etoposide is recommended (category 1)

Acceptable regimens for extensive stage disease include:

- Carboplatin AUC 5 IV on Day 1 and etoposide 100 mg/m² IV on Days 1, 2, 3 and atezolizumab 1,200 mg Day 1 every 21 days for 4 cycles
  - Followed by maintenance atezolizumab 1,200 mg Day 1 every 21 days or atezolizumab 1,680 mg Day 1 every 28 days
- Carboplatin AUC 5-6 IV on Day 1 and etoposide 100 mg/m² IV on Days 1, 2, 3 and durvalumab 1,500 mg Day 1 every 21 days for 4 cycles
  - Followed by maintenance durvalumab 1,500 mg Day 1 every 28 days
- Cisplatin 75 mg/m² IV on Day 1 and etoposide 100 mg/m² IV on Days 1, 2, 3 and durvalumab 1,500 mg Day 1 every 21 days for 4 cycles
  - Followed by maintenance durvalumab 1,500 mg Day 1 every 28 days

Second-line or greater therapy

- Clinical trial (preferred)
- If relapse occurs > 6 months after completion of first-line therapy: original regimen
  - For patients who relapsed after 6 months, while on atezolizumab or durvalumab maintenance therapy, consider re-treatment with platinum plus etoposide alone (without atezolizumab or durvalumab)
  - If relapse occurs ≤ 6 months and performance status 0-2:
    - Lurbinectedin
    - Temozolomide PO
    - Irinotecan
    - Topotecan PO or IV
    - Vinorelbine
    - If immunotherapy naïve
    - Paclitaxel
    - Etoposide PO
    - - Nivolumab with or without ipilimumab
    - Docetaxel
    - Gemcitabine
    - - Pembrolizumab

Growth factor use with systemic therapy and other related considerations

- The use of myeloid growth factors is not recommended during concurrent systemic therapy plus radiation therapy
- Outside of radiation therapy, consider chemotherapy dose reduction or growth factor support for patients with performance status of 2 or age ≥ 70 years
- In patients with ES-SCLC, trilaciclib may be used as prophylactic option for chemotherapy-induced myelosuppression prior to receiving platinum/etoposide or topotecan on days of chemotherapy

Note: Consider Clinical Trials as treatment options for eligible patients.

Indication for SCLC has been withdrawn from the U.S. market, off-label use can be considered on a case-by-case basis
Radiation therapy for Limited Stage disease

- Radiation therapy should be given 1.5 Gy twice a day (with at least 6 hours between fractions) to a total dose of 45 Gy. In circumstances where twice daily fractionation is not feasible, an acceptable alternate schedule is 1.8-2.0 Gy/day to a dose of 60-70 Gy.
- Radiation therapy should be administered concurrently with chemotherapy, ideally beginning during cycle 1 of chemotherapy.
- Radiation therapy should be delivered to original tumor volume unless there is marked risk of radiation pneumonitis; decrease field as tumor shrinks.
- In patients receiving radiation therapy or chemoradiation with curative intent, treatment interruptions or dose reductions for temporary and manageable toxicities, such as esophagitis and myelosuppression, should be avoided. Careful patient monitoring and aggressive supportive care are preferable to treatment breaks in potentially curable patients. Patients should be evaluated at least once per every 5 fractions to monitor weight changes and toxicity.
- 45 Gy in 30 fractions over 3 weeks would not be recommended with concurrent chemotherapy on Day 1, if the DVH shows V20 more than 35% of target lesion. If the GTV is too large to meet dose volume constraints, give one cycle of chemotherapy or go daily fraction of radiation and cone down of the GTV after re-simulation after 2-3 weeks treatment. This will apply for patients who have FEV1 or DLCO less than 30% of predicted value.
- Elective nodal radiation therapy is not recommended.
- Appropriate schedule for PCI is 25 Gy in 10 fractions.

DVH = dose volume histogram
GTV = gross tumor volume
SUGGESTED READINGS


**Prophylactic Cranial Irradiation (PCI)**

**PCI in Limited Stage SCLC**


**PCI in Extensive Stage SCLC**


**Limited Stage SCLC**


**Extensive Stage SCLC**


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**DEVELOPMENT CREDITS**

This practice algorithm is based on majority expert opinion of the Thoracic Oncology Center providers at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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