Small Cell Lung Cancer

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NOTE: Consider clinical trials as treatment options for eligible patients.

INITIAL EVALUATION

- Pathology consistent with small cell lung cancer
- History and physical
- Chest X-ray
- Laboratory studies to include: hematological and full chemistry panels
- CT chest and upper abdomen
- PET and MRI or CT of the brain

STAGE FURTHER WORKUP

INITIAL EVALUATION

1. Limited disease: disease confined to the ipsilateral hemithorax within a single radiation port
2. Extensive disease: disease beyond ipsilateral hemithorax or malignant pleural effusion or obvious metastatic disease

1. Is patient potentially operable?
   - Yes
     - Pulmonary function tests
     - Mediastinoscopy or EBUS
   - No
     - Brain imaging
     - Bone scan
     - Bone marrow aspiration and biopsy if LDH elevated or abnormal CBC

2. Are symptomatic brain metastases or cord compression present?
   - Yes
     - Mediastinoscopy or EBUS
   - No
     - Solitary pulmonary nodule without lymphadenopathy?
       - Yes
         - Pulmonary function tests, if clinically indicated
       - No
         - Bone imaging
         - Bone scan or plain bone films if symptoms present that might require immediate radiotherapy

3. Any test positive?
   - Yes
     - Mediastinoscopy or EBUS
   - No
     - Solitary pulmonary nodule without lymphadenopathy?
       - Yes
         - Pulmonary function tests
       - No
         - Are symptomatic brain metastases or cord compression present?
           - Yes
             - Mediastinoscopy or EBUS
           - No
             - Mediastinoscopy or EBUS

4. Pulmonary function tests (Zubrod 0, 1 or 2)?
   - Yes
     - Radiotherapy and steroids, then
     - Platinum and etoposide for 6 cycles
   - No
     - Platinum and etoposide for 6 cycles

5. Partial or complete response?
   - Yes
     - Prophylactic cranial irradiation (PCI)
       - Platinum and etoposide for 4 cycles
     - Adjuvant platinum and etoposide for 4 cycles
   - No
     - Surveillance (see page 2)

6. Partial or complete response?
   - Yes
     - Mediastinoscopy or EBUS
   - No
     - Mediastinoscopy or EBUS

TREATMENT

- Mediastinoscopy or EBUS
- Radiotherapy (45 Gy twice a day or 60-70 Gy daily or twice a day) concurrent with platinum and etoposide for 4 cycles
- Platinum and etoposide for 4 cycles followed by Optional radiotherapy
- Surveillance (see page 2)

Consider:
- Prophylactic cranial irradiation (PCI) of 25 Gy in 10 fractions
- Chest radiotherapy of 45 Gy in 15 fractions

Department of Clinical Effectiveness V8
Approved by The Executive Committee of the Medical Staff on 03/31/2015

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NOTE: Consider clinical trials as treatment options for eligible patients.

**SURVEILLANCE**

- History, physical, chest X-ray and scans of involved sites every 2 – 3 months for 2 years, then every 6 months for 3 years, then yearly

- **Relapse?**
  - Yes
  - Time of relapse?
    - Greater than 3 months from completion of treatment
      - Continue surveillance
    - Less than or equal to 3 months from completion of treatment
      - Salvage chemotherapy (see principles of chemotherapy)
      - Palliative symptom management including localized radiotherapy

- No
  - Continue surveillance

**SALVAGE / PALLIATION**

- Reinduction therapy with platinum and etoposide
- Palliative symptom management including localized radiotherapy
NOTE: Consider clinical trials as treatment options for eligible patients.

**PRINCIPLES OF CHEMOTHERAPY**

**First-Line Chemotherapy**

- Acceptable regimens for Limited Stage disease include:
  - Cisplatin: 60 mg/m² day 1 plus Etoposide: 120 mg/m² days 1, 2, 3 every 21 days for 4 cycles; cycles 1 and 2 should be given concurrent with chest XRT.
  - Carboplatin: AUC 6 day 1 plus Etoposide: 100 mg/m² days 1, 2, 3 every 21 days for 4 cycles is an acceptable alternative regimen in patients unable to receive cisplatin; cycles 1 and 2 should be given concurrent with chest XRT.

- Acceptable regimens for Extensive Stage disease include:
  - Cisplatin: 60 mg/m² day 1 plus Etoposide: 100 mg/m² days 1, 2, 3 every 21 days for 6 cycles
  - Carboplatin: AUC 6 day 1 plus Etoposide: 100 mg/m² days 1, 2, 3 every 21 days for 6 cycles
  - Irinotecan: 60 mg/m² on days 1, 8, 15 plus Cisplatin: 60 mg/m² on day 1, each cycle 28 days

**Second-Line Chemotherapy**

- If relapse occurs greater than 3 months after completion of first-line therapy, re-treat with original regimen
- If relapse occurs less than 3 months after completion of first-line therapy, acceptable second-line chemotherapy option include topotecan, irinotecan, VAC (vincristine plus doxorubicin plus cyclophosphamide) or oral etoposide
PRINCIPLES OF RADIATION THERAPY

Radiotherapy For Limited Stage Disease
- Radiotherapy should be given 1.5 Gy bid (with at least 6 hours between fractions), to a total dose of 45 Gy. In circumstances where bid fractionation is not feasible, an acceptable alternate schedule is 1.8 – 2.0 Gy/day to a dose of 60 – 70 Gy.
- XRT should be administered concurrent with chemotherapy, ideally beginning during cycle 1 of chemotherapy.
- XRT should be delivered to original tumor volume unless there is marked risk of radiation pneumonitis; then decrease field as tumor shrinks.
- Appropriate schedule for prophylactic cranial irradiation (PCI) 25 Gy in 10 fractions.
- 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 TL. If the GTV is too large to meet Dose Volume constraints, give one cycle of chemo or go daily fraction of radiation and cone down of the GTV after resimulation after 2-3 weeks treatment. This will apply for the patients who have FEV1 or DCLO less than 30% of predicted value.
- Elective nodal RT is not recommended.
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SUGGESTED READINGS


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