# An audit of management of limited-stage small cell lung cancer

**Descriptor:**

This audit will measure local management of limited-stage small cell lung cancer against national guidelines. Departments should have protocols in place specifying the indications for systemic chemotherapy, thoracic radiotherapy and prophylactic cranial irradiation for this group of patients and this audit also aims to measure compliance against local standards.

**Background:**

Each year, approximately 3000 patients in England and Wales are diagnosed with small cell lung cancer. It is an aggressive malignancy characterised by rapid growth and systemic dissemination. The risk of developing brain metastases during the course of the disease is high. Nearly 50% to 60% of patients will develop brain metastases despite a complete response to induction therapy. If left untreated, the prognosis of small cell lung cancer is poor with a median survival of 2 to 4 months.

The management of small cell lung cancer depends on patient’s performance status and disease stage at presentation. Limited-stage small cell lung cancer includes those whose tumours are confined to one hemi-thorax that can be encompassed in a potentially curative radiotherapy treatment volume. It represents approximately 35% of all newly diagnosed cases of small cell lung cancer. Recently, a tumour, node, metastasis staging system was introduced for small cell lung cancer and in general patients with T1-4, N0-3, M0 disease will fall under the category of limited-stage small cell lung cancer.

Treatment of small cell lung cancer is associated with high objective response rates to chemotherapy and radiotherapy. Despite this, data from the 2009 National Lung Cancer Audit showed that over 30% of patients diagnosed with small cell lung cancer in England and Wales did not receive either chemotherapy or radiotherapy. The audit also revealed significant geographical variation in the management of this disease.

The current standard treatment for limited-stage small cell lung cancer includes the use of systemic chemotherapy, thoracic radiotherapy and prophylactic cranial irradiation. An individual patient data meta-analysis showed an improvement in the 3-year survival rate from 8.9% to 14.3% with the addition of thoracic radiotherapy to systemic chemotherapy in limited-stage small cell lung cancer. A further meta-analysis also demonstrated an absolute increase in the 3-year survival rate of 5.4% and a reduction in the risk of brain metastases with the use of prophylactic cranial irradiation in patients with small cell lung cancer who achieved a complete response following primary treatment.

## The Cycle

**The standard:**

NICE clinical guidance 121 made the following recommendations:

1. “Arrange for patients with small cell lung cancer to have an assessment by a thoracic oncologist within 1 week of deciding to recommend treatment”

2. “Offer patients with limited-stage disease small cell lung cancer 4 to 6 cycles of platinum-based combination chemotherapy”

3. “Offer concurrent chemoradiotherapy to patients with limited-stage disease small cell lung cancer and a WHO performance status of 0 or 1 if they present with disease that can be encompassed in a radical thoracic radiotherapy volume; offer sequential radical thoracic radiotherapy to patients who are unfit for concurrent chemoradiotherapy but who respond to chemotherapy”

4. “Offer prophylactic cranial irradiation to patients with limited-stage disease small cell lung cancer and WHO performance status 2 or less, if their disease has not progressed on first-line treatment”

**Target:**

• 100% of patients should be assessed by a thoracic oncologist within 1 week of decision to recommend treatment

• 90% of patients with performance status of 2 or less and whose disease is responding to treatment should receive 4 to 6 cycles of platinum-based combination chemotherapy unless there is severe treatment-related toxicity

• 90% of patients who responded to first-line therapy should receive prophylactic cranial irradiation if performance status of 2 or less

## Assess local practice

**Indicators:**

1. Proportion of patients assessed by a thoracic oncologist within 1 week of decision to recommend treatment

2. Proportion of patients offered chemotherapy

3. Proportion of patients who received 4 to 6 cycles of chemotherapy

4. Proportion of patients who received thoracic radiotherapy to a radical dose

5. Proportion of patients who received prophylactic cranial irradiation

**Data items to be collected:**

In addition to the data items required for the above indicators:

• Age

• Pre-treatment performance status

• Co-morbidities

• Contact with lung cancer clinical nurse specialist - Y/N

• Treatment intent

• Participation in clinical trial – Y/N

• Systemic chemotherapy

   o Drugs given

   o Dose

   o Dose modification – Y/N

   o Dose delay – Y/N

   o Number of cycles administered

   o Chemotherapy response

   o Treatment-related toxicity

   o Deaths within 30 days of chemotherapy

• Thoracic radiotherapy

   o Start date

   o Completion date

   o Concurrent/sequential

   o If concurrent, commenced with which cycle of chemotherapy

   o Reasons for not giving thoracic radiotherapy concurrently

   o Total radiation dose administered

   o Treatment intent

   o Reasons if palliative

   o Treatment response

   o Treatment-related toxicity

• Prophylactic cranial irradiation

   o Start date

   o Completion date

o Total radiation dose administered

• Treatment outcome

o Overall survival

o 1- and 2-year survival rate

**Suggested number:**

Patients diagnosed with limited-stage small cell lung cancer over a period of 1 year.

**Suggestions for change if target not met:**

• Identify delays in the management pathway to ensure patients are assessed by a thoracic oncologist within 1 week of decision to recommend treatment

• Develop departmental protocol to guide management if one not available

• Review departmental protocol against current national guidelines and identify reasons for non-concordance

• Identify reasons for not administering systemic chemotherapy, radical thoracic radiotherapy and prophylactic cranial irradiation

• Review adherence to departmental protocol

• Re-audit in 12 months

**Resources:**

Personnel: Clinical director, audit lead, audit facilitator, oncologist, therapy radiographer

Time: One working day to collect and analyse data and prepare report

**References:**

1. National Health Service Executive. Guidance on Commissioning Cancer Services Improving Outcomes in Lung Cancer – The Manual. 1998.
2. National Institute for Health and Clinical Excellence. The Diagnosis and Treatment of Lung Cancer (update). 2011.
3. National Lung Cancer Audit. 2009.

4. Pignon JP, Arriagada R, Ihde DC, et al. A meta-analysis of thoracic radiotherapy for small-cell lung cancer. N Engl J Med 1992;327:1618-24.

5. Prophylactic Cranial Irradiation Overview Collaborative Group. Cranial irradiation for preventing brain metastases of small cell lung cancer in patients in complete remission. Cochrane Database Syst Rev 2000;4:CD002805.

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