incidence

The crude incidence of lung cancer in the EU is 52.5/100,000/year, mortality being 48.7/100,000/year. Rates among men are 82.5 and 77.0/100,000/year, and among women 23.9 and 22.3/100,000/year, respectively. SCLC accounts for 15–18% of all cases. In recent years the incidence of SCLC has decreased. SCLC is strongly associated with cigarette smoking.

diagnosis

Pathologic diagnosis should be made according to the WHO classification. Biopsies can be obtained by flexible bronchoscopy, mediastinoscopy, endoscopic ultrasound, transthoracic needle aspiration and thoracoscopy depending on the site of the tumor. A biopsy from a metastatic lesion can substitute for a biopsy from the primary tumor. The least invasive approach should be used.

staging and risk assessment

Staging procedures should include medical history, physical examination, chest X-ray, complete blood count including differential count, liver and renal function tests, lactate dehydrogenase and sodium levels, and a CT scan of the chest and upper abdomen including the liver and adrenal glands.

In patients with symptoms or abnormal physical examination suggesting metastasis additional tests may include bone scintigraphy, CT scan or MRI of the brain, and bone marrow aspiration and biopsy. In the presence of a pleural and/or pericardial effusion two aspirations are needed in order to consider cytology negative. If extensive disease is detected by one test, further staging can be omitted [V, D].

Brain CT/MRI should be considered before starting treatment in patients without evidence of metastatic disease. The role of combined FDG–PET/CT scanning is not yet defined.

Staging is determined according to either a two-stage system developed by the Veteran’s Administration Lung Cancer Study Group in the USA, which divides patients into limited and extensive disease groups, or the TNM system.

limited disease

Limited disease is defined as any tumor that can be encompassed in a single radiation port. Limited disease is that confined to one hemithorax with regional lymph node metastasis including ipsilateral hilar, ipsilateral supraclavicular, mediastinal and/or contralateral hilar nodes.

extensive disease

Extensive disease is defined as any tumor that extends beyond the boundaries of a single radiation port, including patients with ipsilateral lung metastases, malignant pleural or pericardial effusion, and distant metastases.

treatment of limited disease

Patients with limited disease should be treated with four to six cycles of etoposide/platinum, preferably etoposide/cisplatin, in combination with thoracic radiotherapy [I, A].

Thoracic radiotherapy increases local control and survival in patients with limited disease. The optimal timing, dose, fractionation and target volume for radiotherapy are still unresolved, although meta-analysis suggests most benefit is obtained if radiotherapy is given early and concurrently with chemotherapy. Therefore, etoposide/cisplatin with early concurrent radiotherapy is the standard of care for patients with limited-stage disease suitable for this approach [II–III, A].

Prophylactic cranial irradiation should be offered to patients with radiologic major response following chemoradiotherapy, as it reduces the risk of cerebral metastases and improves survival [II, A].

Multiple trials have shown that maintenance chemotherapy is not effective in improving survival [II, A].
In patients with T1–2 N0–1 disease, surgical resection followed by postoperative chemotherapy and prophylactic cranial irradiation may be considered.

**treatment of extensive disease**

Patient with extensive disease should be treated with cisplatin or carboplatin in combination with etoposide for four to six cycles [II, A]. Prophylactic cranial irradiation should be considered for patients with extensive disease who have achieved major response after chemotherapy.

**second-line chemotherapy**

Patients with good performance status relapsing after response to first-line chemotherapy should be considered for second-line chemotherapy as second-line chemotherapy increases survival [II, B]. No second-line regimen has proved superior to others with regard to survival.

**response evaluation**

Response evaluation is recommended at the completion of therapy. Initial positive imaging should be repeated [V, D].

**follow-up**

Although the impact of routine radiologic follow-up of asymptomatic patients is not clearly defined in the literature, follow-up should be considered. For patients who achieve long-term survival, monitoring for development of a second primary cancer may be considered. Smoking cessation is recommended.

**note**

Levels of evidence [I–V] and grades of recommendation [A–D] as used by the American Society of Clinical Oncology are given in square brackets. Statements without grading were considered justified standard clinical practice by the experts and the ESMO faculty.

**literature**