The current ESTRO course tries to review the management of different thoracic tumours including lung cancer but also mesothelioma and thymoma. To day, this requires often a close collaboration between different specialities for the diagnosis, the work-up and the treatment. Knowing the limits and possibilities of each speciality is a key issue to provide to each individual patient the best care.

The decision in the management of lung cancer should be based on an adequate pathological report looking to tumour markers, a work-up allowing to know the tumour extent (PET-CT is becoming an important tool but has some limits due to both false positive and negative results) and of course a good patient functional evaluation. This is an important issue in this patient population with often a long history of tobacco smoking and a lot of co morbidities. The key issue is to individualize the treatment to the patient including also his choice when several options are available. Last but not least, we should be aware of the impact of the new TNM on our treatment decision, which are based on studies using the old TNM.

Surgery plays an important in the curative approach for non-small cell lung cancer especially for stage I and II but this require to perform an adequate resection with a lymph node dissection achieving a complete resection with clear margins. For small peripheral tumours, less than a lobectomy may be considered such an anatomical segmental resection, a wedge resection should be avoided. To day, especially for stage II and III, a multimodal approach should be considered including either adjuvant or neoadjuvant chemotherapy. If surgery remains the cornerstone for early lung cancer, there are several alternatives especially for high-risk patients including radio frequency, stereotactic radiotherapy or endobronchial treatments for small endobronchial lesions.

The management of stage III disease is still a controversial issue, partially due to the great heterogeneity of clinical situations going from incidental lymph node discovered at the time of surgery to bulky disease. The treatment is often a multinational approach including chemotherapy, radiotherapy and in well selected cases surgery. Currently, a concurrent chemoradiotherapy approach appears to be better than a sequential treatment provided that the patient may tolerate such a treatment. The acute toxicity is usually more important especially acute oesophagitis. There is currently no place in routine practice to use targeted therapies or a maintenance schedule.

As radiation oncologist we should be aware of the great technological development occurring during the last decade moving from the old 2D to the 3D and now to a 4D approach. Those new techniques open the door to higher radiation doses but also to risk of more toxicity: several questions are still not solved including the optimal schedule and volume to be treated. Good guidelines are available by cooperative groups including the EORTC.

Small cell lung cancer is another issue where the approach is usually chemotherapy and radiotherapy may be considered for limited disease (chest radiotherapy) for patients in complete remission (prophylactic cranial irradiation). More and more chest radiotherapy tend to be similar to the technique used for NSCLC. PCI is now recommended not only for patients in complete remission but also for extensive disease to improve their quality of life. The TNM should also be used for small cell lung cancer.

Besides, the curative treatment, palliation is an important issue: patients are suffering either from the primary tumours or from distant metastases. Brain relapse is dreadful complications: radiosurgery has changed the outcome for well-selected cases offering even
some long-term cure. In most countries, radiation oncologists are still using several fractions while randomised trials have demonstrated similar efficacy of one single shot.

Mesothelioma is a major challenge for the oncologists. Only a few patients may be treated with a curative intent in very specialized centres combining chemotherapy, surgery and radiotherapy. Most patients are only candidate to chemotherapy or even supportive care. The place of radiotherapy in this disease is very limited.

Systemic treatments (chemotherapy or targeted therapies) have evolved over the last years moving from the platinum based chemotherapy to more and more individualised treatments based on the pathology (pemetrexed for adenocarcinoma) or on tumour markers (EGFR and TKI...). The big question mark is the validity of the genomic signature and how to use all the information available in daily practice.

**Key references**


J.Jassem

The role of radiotherapy in lung cancer: Where is the evidence ?
Radiotherapy and Oncology 2007, 83: 203-213

Senan S., De Ruysscher D., Giraud P., Mirimanoff R., Budach V., Radiotherapy Group of European Organization for Research and Treatment of Cancer

Literature-based recommendations for treatment planning and execution in high-dose radiotherapy for lung cancer

Aupérin A., Le Péchoux C., Curran R.E. et al

Meta-analysis of concomitant versus sequential radiochemotherapy in locally advanced non-small-cell lung cancer

De Ruysscher D., Botterweck A., Dirx M., et al

Eligibility for concurrent chemotherapy and radiotherapy of locally advanced lung cancer patients: a prospective, population-based study

Haasbeck C.J., Slotman B.J., Senan S.

Radiotherapy for lung cancer: clinical impact of recent technical advances
Lung Cancer 2009; 64, 1-8


Radiother Oncology 2009, 91:85-94

Raben D., D., Schwer A., Van Houtte P.