Chairman' s introduction

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The management of patients with clinical stage III (i.e. N2,3 and/or T4) non-small cell lung cancer (NSCLC) remains controversial and depends largely on the technical possibility of carrying out aggressive surgical resection in opposition to standard, generally palliative, chemoradiation or even best supportive care. This emphasises the weakness of the current tumour-node-metastasis (TNM) classification and the wide range of possible clinical presentations covered by clinical stage III.

There have been several recent advances in imaging techniques, dominated by the widespread use of positron-emission tomography (PET)-scanning as the main examination in assessing the thoracic extension of lung tumours.

In the 1970s palliative radiotherapy, given at 45–60 Gy, was the standard approach for these patients. Chemotherapy was added to chest radiation largely after cisplatin became the key drug in NSCLC and several randomised studies demonstrated an advantage for this combined modality treatment compared with radiotherapy alone. Nevertheless, the meta-analysis performed by the Medical Research Council and Institut Gustave-Roussy, published in 1995, showed that even if statistically significant, the benefit was modest, with a 2% improvement at 5 years for overall survival.

The last decade has seen the widespread use of concomitant chemotherapy and radiation, which appears to be superior to sequential schedules in the populations tested, as well as the emergence of some new radiotherapy techniques. Concurrent chemoradiotherapy has led to a clear improvement in survival: 2-year survival rates rose from 20% to 40%, close to those reported in several phase II studies proposing surgery after induction chemoradiation in selected patients.

Doses of at least 65 Gy have to be delivered to have a chance of controlling a 3-cm tumour. Current new radiation techniques, such as 3D conformal radiotherapy, stereotactic radiotherapy, gating techniques or intensity modulated radiotherapy, allow an increase in the total dose without an increase in severe toxicity, and doses in excess of 70 Gy may be delivered safely.

The role of surgery, either as initial treatment for selected cases or after induction chemotherapy and/or radiotherapy schedule, has also been questioned, since radiotherapy alone offers a poor local control rate (around 20% complete responses in randomised studies) and the addition of chemotherapy largely acts to decrease the rate of metastases. Several phase II studies and a few phase III trials have been carried out over the last two decades. What lessons can be learned from these studies? To be successful surgery has to achieve a complete resection and this is only possible in a limited number of patients, particularly in stage IIIb patients, where the resection rate is usually between 40% and 60% in well-selected patients. In addition, a mediastinal downstaging and a pathological response are major prognostic factors. Some randomised trials comparing surgery with radiotherapy have been conducted recently in patients with pathologically proven N2 disease: in a study by the European Organisation for Research and Treatment of Cancer (EORTC), surgery was not superior to radiotherapy after induction cisplatin-based chemotherapy. In another North-American study, patients were treated with cisplatin-etoposide and chest irradiation to 45 Gy, followed by surgery or full radiation dose (66 Gy). No difference was observed in terms of survival: the 3-year survival rates were, respectively, 33% for radiotherapy and 38% for the operated patients. Progression-free survival was in favour of surgery, but this did not translate into a clear survival benefit due to the higher mortality rate in the experimental arm. Pneumonectomies worsened prognosis compared with lobectomies in these patients.

The articles in this section outline the main recent data on the management of patients with clinical stage III NSCLC and clarify the treatment options presently offered to patients.