Small Cell Lung Cancer

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Although Small Cell Lung Cancer (SCLC) represents a smaller proportion of all lung cancers than it did 20 years ago, it remains a common cause of mortality that requires more basic and clinical research than is currently underway. Treatment paradigms have changed little since the 80's. Despite a generally spectacular initial responsiveness to chemotherapy and radiotherapy, the vast majority of patients with SCLC will still relapse and eventually die within 12 to 18 months.

An accurate staging is essential to determine the treatment program since the approach must be curative in case of limited disease (ie those patients whose the whole disease can be included in one radiotherapy volume) and palliative in case of extensive disease (ie all those patients whose disease cannot be included in one radiotherapy volume). Practically, is defined limited a tumour limited to one hemithorax, with ipsilateral or contralateral regional (interbronchial and mediastinal) lymphnodes but without pleural effusion or distant metastases. A whole body CT scan, a bone scan and a bone marrow biopsy constitute the standard assessment of SCLC. PET scan and brain MRI are now probably the most accurate way to stage the patient. Standard biology, LDH and tumour markers such as CEA and NSE are also part of the initial work-up.

The combination of etoposide and cisplatin (or carboplatin) is the traditional first line treatment for almost all patients. The sequential or concurrent addition of adriamycin, and cyclophosphamide slightly improves the results but with a substantially higher toxicity. A Japanese study suggesting the superiority of irinotecan over etoposide could not be confirmed in several western randomised trials. The addition of Growth Factor Receptor Inhibitors, Signaling Inhibitors, Antibodies against Adhesion Molecules, Apoptosis promoters, Angiogenesis Inhibitors or vaccines all failed up to now at substantially improving survival of SCLC.

In patients with limited disease, the addition of radiotherapy to chemotherapy may increase the rate of complete responses up to 70% and the probability of long term survival from 5-7% to 15-20%. Early concurrent associations appear offering the best chance of positive outcome.

Second line treatments are rarely successful and survival duration largely depends of the disease-free interval. If the progression occurs at least 6 months after initial treatment discontinuation, it is generally recommended to resume the initial etoposide-cisplatin combination. If the relapse occurs earlier, the standard second line agent is Topotecan. Amrubicin has recently showed some promising results that should be confirmed in a randomised study.

Finally, prophylactic cranial irradiation has been largely evaluated due to the high rate of brain metastases in SCLC. All studies confirm the benefit of its use in patients responding to chemotherapy.