



Local control with thoracic radiotherapy in extensive-stage small cell lung cancer

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Purpose. To evaluate our experience treating patients diagnosed of extensive stage small cell lung cancer (EE-SCLC) with chest radiotherapy (RT) after chemotherapy (CT) and prophylactic cranial irradiation (PCI).

Materials and methods. We have evaluated our experience retrospectively, searching patients diagnosed of EE-SCLC between 2008 and 2012. The scheme of treatment was PCI and RT after CT. The target for RT was the postchemotherapy visible disease. We have analyzed local control (LC), symptomatic control, toxicity, progression free survival (PFS) and overall survival (OS).

Results. Twenty-eight patients were treated this way in our hospital in that period. After 6 cycles of platinum and VP-16 CT we found 85% partial responses and 15% stable diseases in thorax and 60% partial responses and 40% complete responses in metastatic disease. For PCI the schemes 20 Gy/5 fractions and 25 Gy/10 fractions were used. For RT different schemes were used: 60 Gy in 30 fractions (3 patients), 30 Gy in 10 fractions (9 patients), 36 Gy in 12 fractions (14 patients) and 20 Gy in 5 fractions (2 patients). After a median follow up of 13.5 months from diagnosis we found 8 recurrences (28%) in radiation field, 3 of them symptomatic (10%). The median time to local relapse was 4.5 months since RT. Maximal toxicity was grade 2 esophagitis in 10% patients, with no grade 2 or more lung toxicity. OS was 13.5 months, and PFS time 10 months with 1 year PFS of 28%. There was brain progression in 21% of patients with no differences between the two schemes of PCI.

Conclusions. Thoracic radiotherapy is a well tolerated treatment which could improve local control preventing symptomatic relapse. Based in our results, a phase II prospective trial is being starting up in our centre to better understand the role of radiotherapy in this group of patients.

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Outcomes in advanced locally lung cancer with IMRT. Institutional experience

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Introduction. Intensity-modulated radiation therapy (IMRT) is an advanced treatment delivery technique that is being used in lung cancer, which differs from traditional methods of radiotherapy which exceeds the tolerance dose in organs at risk (OARs). In most cases the irradiation volume included mediastinum and is very difficult spare V20 in healthy lung parenchyma.

Material and methods. From February 2009 to March 2012, 51 patients were diagnosed with locally advanced lung cancer. Patients were evaluated for toxicity and overall survival results. Mean age 65 years (46–80), Karnofsky 80–90%, stage III (A–B). Histology: Small cell lung cancer in 8 patients, non-small cell (predominated epidermoid) in 26 patients and 12 cases with adenocarcinoma. Other histopathology presented in 5. In non-small cell tumor was used different chemotherapy regimens based on platinum. In small cell tumors was used chemotherapy with Cisplatin-Etoposide scheme. The CT scan were performed in the treatment position with a planning CT-scan 5 mm slice thickness, with a personalized alpha cradle immobilization in chest and upper extremities. Definition of Volumes – CTV: lung tumor and pathologic nodes visualized by CT scan or PET. – PTV: CTV plus 1–1.5 cm margin. – OARs: lung, heart, esophagus and spinal cord. The total dose in small cell tumors was 60 Gy in 30 fractions. In non-small cell 68–70 Gy in 34–35 fractions. Affected supraclavicular nodes 60 Gy and prophylactic dose 50–56 Gy.

Results. Dosimetric results: Mean volume of PTV lung tumor and nodal disease is 738 cm³ (212–2028). Esophagus mean dose: 38 Gy (11–71); heart V40: 15% (0–42); Lungs mean dose: 15 Gy (10–19); Lungs V20: 26% (15–35). Toxicity results: Acute pneumonitis G_≥ 2 in 16% of patients (3/18) that could be evaluated. 50% had esophagitis, most common GI. Overall survival at 2 years all cases 52% and in non small-cell lung cancer 48%.

Conclusions. IMRT may be effective in reducing normal tissue toxicity in the cases of mediastinal positive lymph nodes. Allows treat advanced lung cancer with optimal DVH when is not possible to spare lung V20 and heart V40 with 3D conventional external Radiotherapy. This technique does not influence in the overall survival compared with literature results.

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