

Abstract 5527

## Characteristics of Exceptional Long Term Survivors in Extensive Stage Small Cell Lung Cancer

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### Background

Small cell lung cancer (SCLC) remains a frustrating disease to all parties involved. Most patients present with extensive stage disease (ED), with a median survival of 8 to 13 months (Expected). The aim of this study is to present data on survivors who lived beyond 3 years after a diagnosis of ED-SCLC (Exceptional) in order to uncover favorable factors for better patient management and clinical outcomes.

### Methods

We retrospectively evaluated the SCLC patient cohort diagnosed and followed from 1997 to 2015 at Mayo Clinic (Minnesota), and searched for Exceptional survivors with matched Expected survivors who had passed away within 12 months of diagnosis on age and year of diagnosis. Patient characteristics, treatments, and outcomes were compared between the two groups.

### Results

To date, we identified 36 Exceptional and 144 Expected ED-SCLC patients. Women and an Eastern Cooperative Oncology Group-Performance Status (ECOG-PS) 0-1 were higher in Exceptional than in Expected group (61.8% vs 36.1%,  $p < 0.01$ ; 97.2% vs 77.6%,  $p < 0.01$ ; respectively). Smoking history, comorbidities (COPD, prior cancers or paraneoplastic syndrome), and T or N stage did not differ significantly. The top two metastatic sites in Exceptional group were brain (26.7%) and distant lymph nodes (20.0%), and in Expected were liver (28.3%) and bone (22.5%).

Use of chemotherapy and the mean cycle number were higher in the Exceptional than the Expected group (100.0% vs 80.0%,  $p < 0.01$ ; 5.0 vs 3.6,  $p < 0.01$ ; respectively), with the main regimen being platinum/etoposide. However, carboplatin was used more frequently than cisplatin in Expected group (all patients,  $p = 0.02$ ; ECOG 0-1 patients,  $p = 0.05$ ). The overall response rate of chemotherapy was significantly higher in exceptional group (91.4% vs 56.7%,  $p < 0.01$ ). Thoracic radiotherapy and prophylactic cranial irradiation (PCI) in Exceptional were also higher than in Expected group (58.3% vs 17.4%;  $p < 0.01$ , 19.4% vs 6.9%;  $p = 0.03$ ). Multivariate analysis is underway.

In Exceptional group, median overall survival was 5.4 years (95% CI 3.7-6.8); 9 (25%) patients were still alive. Twelve (33%) patients had disease recurrence or progression with the median progression free survival 1.2 (95% CI 0.7-2.0) years. The most common recurrent site was brain. Three patients had secondary malignancy, 2 being a non-small cell lung cancer.

### Conclusion

Although the chance of curing ED-SCLC is small, long-term survival can be achieved. This study supports the importance of good performance status and the achievement of a response to cisplatin-based chemotherapy on long-term survival. Addition of thoracic radiotherapy and PCI are beneficial in prolong life of ED-SCLC patients.

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