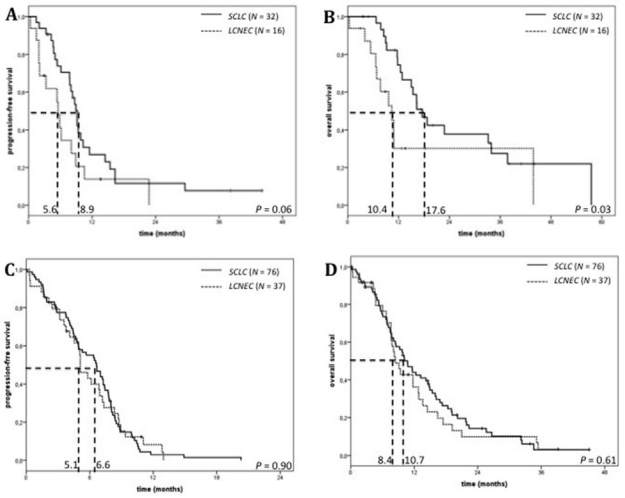
64.5%, respectively, P=0.04). Similarly, an inferior outcome was observed in terms of progression-free survival (PFS), and overall survival (OS) for LCNECs compared with SCLCs, which, however, reached significance only for stage III disease (median: 5.6 vs 8.9 months, P=0.06 and 10.4 vs 17.6 months, P=0.03 for PFS and OS, respectively), (Figure 1). Histologic subtype (LCNEC vs SCLC) was an independent prognosticator in multivariate analysis. In the lack of PCI, LCNECs showed a high cumulative incidence of brain metastases, as 58% and 48% of still living stage III and IV patients, respectively, developed brain metastases at 18 mo.



Conclusion: Patients with advanced LCNECs are at high risk for brain recurrence. Unresected stage III LCNECs treated with platinum-etoposide with or without TRT bear a dismal prognosis, when compared indirectly with SCLC counterparts. Randomized trials should evaluate whether PCI could improve survival of advanced LCNECs.

Keywords: small cell lung cancer, prophylactic cranial irradiation, Neuroendocrine tumors, Large Cell Neuroendocrine tumors

P1.07-019
Large Cell Neuroendocrine Carcinoma of the Lung: Prognostic Factors of Survival and Recurrence after R0 Surgical Resection

Topic: Local Treatment

Maria Cattoni,[1] Eric Vallieres,[1] Lisa Brown,[2] Amir Sarkeshik,[2] Stefano Margaritora,[3] Alessandra Siciliani,[3] Pier Luigi Filosso,[4] Francesco Guerrera,[4] Andrea Imperatori,[5] Nicola Rotolo,[5] Farhood Farjah,[6] Grace Wandell,[6] Kimberly Costas,[7] Catherine Mann,[1] Michal Hubka,[8] Stephen Kaplan,[8] Alexander Farivar,[1] Ralph Aye,[1] Brian Louie[1] *[1]Thoracic Surgery, Swedish Cancer Institute, Seattle/WA/United States of America, [2]General Thoracic Surgery, UC Davis Medical Center, Sacramento/CA/United States of America, [3]Thoracic Surgery, Catholic University "sacred Heart", Rome/Italy, [4]Thoracic Surgery, San Giovanni Battista Hospital, Torino/Italy, [5]Thoracic Surgery, University of Insubria-Ospedale Di Circolo, Varese/Italy, [6]Cardiothoracic Surgery, University of Washington Medical Center, Seattle/WA/United States of America, [7]Thoracic Surgery, Providence Regional Medical Center, Everett/WA/United States of America, [8]Virginia Mason Hospital & Seattle Medical Center, Seattle/WA/United States of America*

Background: Large cell neuroendocrine carcinomas (LCNEC) represent approximately 3% of all lung cancers. Due to this rarity, little knowledge exists about their outcome, prognosis or optimal treatment strategy. The objective of this study is to evaluate the outcomes of patients undergoing lung resection for LCNEC to identify the factors affecting survival and recurrence to help refine the optimal treatment strategy.

Methods: We retrospectively reviewed 116 patients who underwent lung resection at 8 centers between 2000 and 2015. We excluded 18 patients: pNX(3), stage IV(5), R1-2(10). Univariate and multivariate analysis were performed to identify factors influencing disease-specific survival, overall survival and recurrence. The variables included age, gender, smoking habit, previous malignancy, ECOG performance status, symptoms at diagnosis, extent of resection, extent of lymphadenectomy, tumor location, tumor size, pT, pleura invasion, pN, pStage and neo/adjuvant treatments. Kaplan-Meier, Cox regression and ROC curve were used.

Results: A total of 98 patients (M/F:60/38) were analyzed with a median age of 66 years (IQR=58-72). Prior to resection, 11 (11%) received induction therapy. Resections included pneumonectomy (8), bilobectomy (3), lobectomy (76) and sublobar (11) with an associated lymph node sampling (N=52, 55%) and lymphadenectomy (N=43, 45%). Adjuvant therapy was delivered in 28 (30%). Pathologic stages were I (N=40, 41%), II (N=33, 34%) and IIIA (N=25, 25%). Median follow-up was 62 (IQR=19-120) months. The 5-year disease-specific and overall survival rates were 51.6% and 42.7%. On univariate analysis, pT was associated with disease-specific and overall survival (p=0.011, p=0.028). Similarly pT was also associated on multivariate analysis with disease-specific and overall survival (p=0.044, p=0.034). The recurrence rate was 55% (2% local, 10% regional, 32% systemic, 11%

not-specified). The median disease-free interval was 16 (IQR=6-80) months. Local-regional recurrence wasn't associated with any factor on univariate analysis. Systemic recurrence was correlated with tumor size (p=0.002), pT (p=0.003) and pStage (p=0.024) on univariate analysis. Tumor size was an independent prognostic factor of systemic recurrence on multivariate analysis (p=0.001) with a threshold value of 3 cm (AUC=0.712). The 5-year disease-free survival for systemic recurrence in tumors $<$ 3 cm or $\geq$3 cm was 75.4% and 37.8% (p=0.001). The 5-year disease-specific survival was 56.7% and 47.3% (p=0.088).

Conclusion: Treatment of LCNEC with predominately surgical resection results in a respectable 5-year survival. However, a high proportion of systemic recurrence occurs. Tumors $\geq$3 cm have a higher rate of systemic recurrence and lower rate of survival suggesting that adjuvant chemotherapy may be indicated for completely resected LCNEC $\geq$3 cm.

Keywords: large cell neuroendocrine carcinoma, prognostic factors of survival, lung surgery, prognostic factors of recurrence

P1.07-020
Surgical Resected Small Cell Lung Cancers (SCLCs): A Monocentric Retrospective Analysis

Topic: Local Treatment

Laura Bonanno,[1] Elisabetta Di Liso,[1] Marco Schiavon,[2] Alberto Pavan,[1] Mara Mantiero,[1] Dario Gregori,[3] Giovanni Comacchio,[2] Matteo Fassan,[4] Ilaria Attili,[1] Nazarena Nannini,[3] Fiorella Calabrese,[3] Giuseppe Natale,[2] Giulia Pasello,[1] Massimo Rugge,[4] Federico Rea,[2] Pierfranco Conte[5] *[1]Medical Oncology, Istituto Oncologico Veneto, Padova/Italy, [2]Thoracic Surgery, Department of Cardiothoracic and Vascular Sciences, Università Degli Studi Di Padova, Padova/Italy, [3]Department of Cardiothoracic and Vascular Sciences, Università Degli Studi Di Padova, Padova/Italy, [4]Department of Medicine, Surgical Pathology and Cytopathology Unit, Università Degli Studi Di Padova, Padova/Italy, [5]Department of Surgery, Oncology and Gastroenterology, Università Degli Studi Di Padova, Padova/Italy*

Background: Standard treatment for stage I-III SCLCs is chemoradiotherapy followed by prophylactic cranial irradiation, with 5-year survival rate of about 20%. Recent retrospective analyses reported benefit from surgery followed by adjuvant platinum-based chemotherapy but no randomized trials confirmed these results.

Methods: A series of 365 SCLCs treated from 1996 to 2015 has been retrospectively evaluated. Among 141 evaluable patients, 61 underwent radical-intent surgery and 21 underwent chemoradiotherapy. Clinical, radiological and pathological data were reviewed and related with outcome. Mitotic count, necrosis, TP53, Bcl-2 and PD-L1 immunohistochemical expression were analyzed.

Results: Median follow-up was 42 months. Among resected patients, 46 (75%) were male and median age was 68 (95% CI: 46.9-83.4) years. Seven patients (11%) underwent pneumonectomy, 43 (71%) received chemotherapy before (20%) or after (51%) surgery. Adjuvant radiotherapy was administered in 19 (31%) cases. Pathological review of resected SCLCs was performed. Median mitotic count was 59/10 hpf and extensive necrosis was found in 80% of samples. P53 (>30%), Bcl-2 (H-index >150) and PD-L1 (>5%) expression was reported in 58%, 58% and 62% of samples respectively. None of these factors significantly affected survival. A significant correlation between necrosis and mitosis (p 0.00002), and pN2 and Bcl-2 (p 0.03) was found. Median overall survival (OS) and relapse-free survival (RFS) were 62.3 (95% CI: 32.4-82.1) and 12.8 (95% CI: 6.57-47.27) months, respectively. Mortality of surgery was 0%, morbidity was 23%. Surgical margins were found positive in 8 (13%) cases. Median OS for pN0-1 patients was 65.7 (95% CI: 44.5-108) months *versus* 30.3 (95%CI: 12-NA) months for patients with pN2 disease (p 0.04). Multivariate analysis confirmed pN2 stage (p 0.04) and surgical margins (p 0.03) as significant prognostic factors. Among non-resected patients, the median age was 69.4 (95% CI: 54.7-84) years. Median OS and RFS were 13.4 (95% CI: 7-26.9) and 7 (95% CI: 5.9-19) months. To confirm our results, we compared outcome of patients with pN2 disease according to surgical resection. Median OS of surgically resected SCLCs was 30.3 (95% CI: 7.03-36.9), while it was 14.7 (95% CI: 12-NA) months among patients treated with chemoradiotherapy, but the comparison was not statistically significant.

Conclusion: Radical-intent surgery was feasible and associated with considerable long-term survival. Mediastinal nodal involvement and non-radical surgery were the main elements able to affect OS. The expression of PDL1 was not prognostic in stage I-III SCLCs. Further prospective studies are warranted to optimize multimodal approach and selection of patients.

Keywords: PDL-1, small cell lung cancer, Surgery, multimodality treatment