

**1813P Prevalence and prognostic value of PD-L1 expression in molecular subtypes of metastatic large cell neuroendocrine carcinoma (LCNEC)**

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**Background:** Pulmonary LCNEC is a rare tumor. Two mutually exclusive subtypes of LCNEC are recognized, the co-mutated TP53 and RB1 and the STK11/KEAP1 (predominantly RB1 wildtype) group. We investigated PD-L1 expression in a well characterized stage IV LCNEC cohort and compared expression in the two subtypes.

**Methods:** Panel-consensus pathology revision was performed along with targeted next generation sequencing (NGS) for genes TP53, RB1, STK11 and KEAP1 and immuno-histochemical (IHC) analysis of RB1, on pretreatment tumor samples of stage IV LCNEC treated with chemotherapy (Derks et al. CCR 2018). IHC staining for PD-L1 (DAKO 28-8) was performed according to standard protocols on the DAKO autostainer and evaluated by an experienced screener. Tumors were scored positive if > 1% of tumor cells showed any membranous staining. Overall survival (OS) was evaluated by Kaplan Meier analysis and differences estimated with Log-Rank test. Cox-regression analysis included PD-L1, age and gender.

**Results:** PD-L1 IHC expression data could be generated in 98/147 confirmed LCNEC samples along with RB1 IHC (n = 97) of which 77 passed quality control for NGS. PD-L1 expression was positive in 16/98 cases (16%); n = 5 (5%) with >50%, n = 11 (11%) having >1-50% and n = 82 (82%) with ≤1% membranous staining, respectively. No significant correlation of PD-L1 expression with molecular subtyping of LCNEC was identified (Table). PD-L1 expression was correlated with a superior OS, hazard ratio (HR) 0.54 (95% Confidence interval (CI), 0.31-0.96) P = 0.034.

**Table: 1813P Expression of PD-L1 in LCNEC, correlated to molecular data**

	PD-L1 +	PD-L1 -	P-value
LCNEC (n = 98)	16%	84%	-
1-5%	7 %	-	-
5-20	4%	-	-
>50	5%	-	-
RB1 IHC (n = 97)			
RB1 (+) (n = 29)	10%	90%	NS
RB1 (-) (n = 68)	19%	81%	
Mutation status (n = 76)			
RB1/TP53 mutated (n = 33)	15%	85%	NS
RB1 wildtype (n = 43)	16%	84%	
OS in months (95% CI)	8.9 (4.2-13.6)	6.6 (5.7-7.6)	HR 0.54 (0.31-0.96) P = 0.034

**Conclusions:** PD-L1 expression was positive in 16% of stage IV LCNEC tumors. PD-L1 expression is an independent process from LCNEC molecular subgroups. In LCNEC patients with PD-L1 expression superior OS is observed compared to those with negative PD-L1 tumors.

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