

10. kongres Hrvatskog torakalnog društva 10<sup>th</sup> Congress of the Croatian Thoracic Society

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## RETROSPECTIVE EPIDEMIOLOGICAL STUDY OF PD-L1 PROTEIN EXPRESSION IN NSCLC ON CYTOLOGICAL SMEARS AND CYTOSPINS

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## **Objective:**

Aim: Comparison of NSCLC patients clinical data and PD-L1 protein expression on cytology slides.

Materials and methods: Archive records of the patient's data and results of PD-L1 protein expression in patients with NSCLC over period of one year. Materials were collected during bronchoscopy (bronchial washing/brushing and transbronchial fine needle aspirations), FNA of peripheral lymph nodes, skin nodules, transthoracic FNA/biopsy and pleural effusion. All cytological smears and/or



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cytospins were air dried and stained with Anti-PD-L1, Clone 22C3, Dako on Autostainer. PD-L1 protein expression was defined using Tumor Proportion Score (TPS) with cut-offs of  $\geq$ 50% and  $\geq$ 1%.

Result: We included 341 among 393 patients that underwent PD-L1 testing. There were 210 males and 131 females. Most of the patients, 219/341 (64.2%) were in stage IV of the disease and older than 61 years 265/341 (77,7%). PD-L1 stained negative in total of 179/341 (52,5%) samples. PD-L1 stained positive in total of 162/341 (47,5%) samples of which 72/162 (44,4%) samples were PD-L1 positive  $\geq$ 50% and 90/162 (55,6%) were PD-L1 positive 1-49%. The patients that were PD-L1 positive were in stage IV of disease in 95/162 (58,6%) cases and most of them smoke 74/162 (45,7%) or were former smokers 59/162 (36,4%). Comparison in PD-L1 expression between gender (x<sup>2</sup>=0.9802 *p*= .612576.) smoking history (x<sup>2</sup>=4.6894. *p*=.59954.), stage of disease (x<sup>2</sup>=7.6419. *p*= .469207), and age (x<sup>2</sup>=0.3621. *p*=.834388.) show no statistical significant difference among groups. Out of 162 patients that were PD-L1 positive (with TPS  $\geq$ 1%), 69 received immunotherapy as first, second or third line of therapy. At the time 23 patients among 69 that were included in our study were treated with immunotherapy as the first line of therapy.

Conclusion: In our study there were no statistical significant differences in PD-L1 protein expression between different groups regarding gender, age, smoking status and stage of disease.