

## 9.07 The Impact of Formalin-Fixed Pleural Fluid in Lung Cancer on Sample Adequacy for PD-L1 Analysis

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**Background:** Previous studies have shown that Programmed Death Ligand-1 (PD-L1) in pleural fluid cytology is concordant to PD-L1 expression in tissue specimens. In 2020 the pathology laboratory in our centre recommended sending pleural fluid in formalin if PD-L1 analysis would be required. In this single-centre study we assessed the adequacy of malignant pleural effusion (MPE) fluid for PD-L1 analysis comparing the period before and after our pathology recommendation, and evaluating difference in yield between samples sent for cytology not in fixative compared to those sent in formalin.

**Methods:** All MPE from 2018-2019 (Period 1) and 2020-2022 (Period 2) were reviewed. Only NSCLC associated pleural fluid was included. Data collection included if sample was sent in formalin and PD-L1 testing results.

**Results:** In period 1, of the 7 samples which were PD-L1 sufficient, 4 had been in formalin compared to 3 without; and insufficient in 1 sample from the formalin group as opposed to 10 samples without (P=0.030; CI -95%, -4%). For period 2, 12 PD-L1 sufficient samples were sent in formalin vs 3 samples without fixative; there were more PD-L1 insufficient samples in the no fixative group compared to the formalin group at 10 samples vs 4 samples respectively (P=0.001; CI -83%, -20%).

**Conclusions:** Pleural fluid yield for PD-L1 testing significantly increases if MPE samples are sent in formalin.

**Conflict of Interest:** *The authors declare that they have no conflict of interest.*