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High expression of PD-L1 by pulmonary adenocarcinoma metastatic to body cavities; artefact or biology?

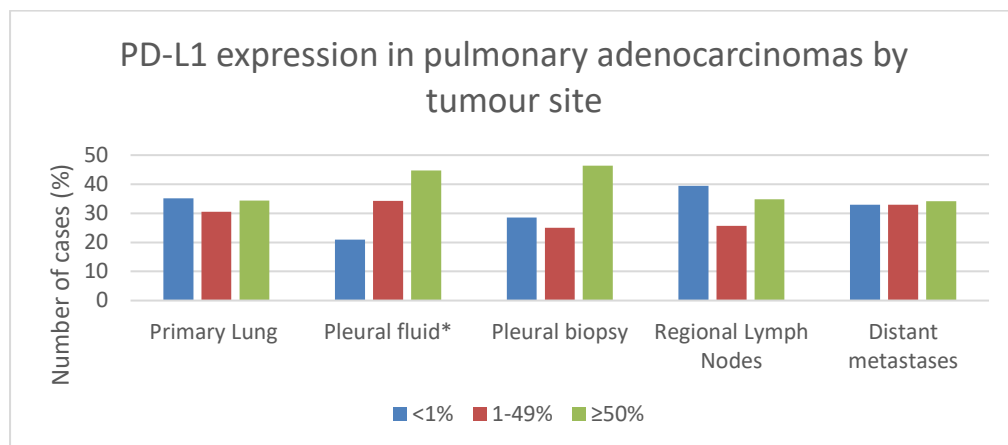
Background:

It is a common, but empirical observation amongst pathologists experienced in assessing expression of programmed-death ligand-1 (PD-L1) by cells of primary pulmonary adenocarcinomas that have disseminated into pleural and pericardial cavities that PD-L1 expression is frequently high and often strikingly strong in these locations. As far as we are aware, however, there is currently no hard evidence to support this observation, and we thought it would be of interest to study a group of such specimens and compare PD-L1 expression with that in specimens from other sites.

Method:

We compared the level of PD-L1 expression assessed as the tumour proportion score (TPS) in adenocarcinomas in pleural and pericardial biopsies and aspirates (136) with that in primary tumours (603) and in regional nodal or distant metastases (352).

Results:



*Includes 4 pericardial fluids, all >80% TPS.

Discussion:

There was a clear tendency towards higher PD-L1 expression levels in cells from adenocarcinomas metastatic to pleura and pericardium when compared with either the primary tumour or with metastases in regional lymph nodes or at other distant sites. Expression was also often particularly strong. This is unlikely to be an artefact of sampling or processing. Rather, we hypothesise that it reflects an aspect of the biology of pulmonary adenocarcinomas that develop the capacity for dissemination into body cavities, possibly related to high expression of neo-antigens provoking a strong immune response and subsequent protective up-regulation by the tumour of PD-L1 expression as a protective mechanism.