

Clinical significance of programmed death-1 ligand-1 expression in patients with non-small cell lung cancer: a 5-year-follow-up study

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ABSTRACT

Aims and background. The programmed death-1-ligand 1 (PD-L1) has been recently suggested to play a pivotal role in the immune evasion of tumors from host immune system. In the study, we tried to reveal the clinical significance of PD-L1 in patients with non-small cell lung cancer (NSCLC), which is one of the most aggressive and intractable malignant tumors.

Methods and study design. PD-L1 expression in 120 NSCLC tissue specimens and 10 benign control samples embedded with wax were retrospectively detected by immunohistochemistry.

Results. No PD-L1 was detected in the 10 benign controls, whereas 57.5% of NSCLC tissue specimens showed PD-L1 expression. There was no relationship between PD-L1 expression and patient age, gender or histopathological type. However, PD-L1 expression was significantly correlated to the degree of tumor cell differentiation, stage of tumor node metastasis (TNM) and patient survival. Poor tumor cell differentiation and advanced TNM stage were related to higher PD-L1 expression. PD-L1-negative NSCLC patients had longer overall 5-year survival than PD-L1-positive patients ($P < 0.0001$). PD-L1 status was a significant independent prognostic factor of NSCLC ($\chi^2 = 18.153$, $RR = 2.946$, $P < 0.001$).

Conclusions. Up-regulated PD-L1 expression in NSCLC is related to the degree of tumor cell differentiation and TNM stage. PD-L1 status may be a new predictor of prognosis for patients with NSCLC.

Key words: immunohistochemistry, non-small cell lung cancer, overall survival time, programmed death-1-ligand 1.

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