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Programmed Death Ligand 1 Expression As A Prognostic Marker In Advanced Gallbladder Cancer

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Background : Programmed death ligand 1 (PD-L1), a potential target for immune checkpoint inhibitors, has been considered a novel biomarker for prognosis in various solid tumors. However, scant data is available on the role of PD-L1 expression in advanced gallbladder cancer (GBC). The aim of this study is to evaluate prognostic significance of expression of PD-L1 in advanced GBC and provide evidence for PD-L1 targeted therapy in the future.

Methods : We investigated the expression of PD-L1 in 192 advanced GBC cases who underwent surgery and were pathologically confirmed as T3 or T4 between 2010 and 2017. PD-L1 expression was immunohistochemically assessed using a single PD-L1 antibody (clone SP263). Clinicopathological characteristics and survival data were correlated with PD-L1 expression analyzed at different cut-offs of ≥1%, ≥10% and ≥50% in tumor cells and tumor-infiltrating immune cells.

Results : Tumor cells expressed PD-L1 in 47.4% of cases (n=91), and tumor-infiltrating immune cells expressed PD-L1 in 70.5% of cases (n=135). The median overall survival (OS) and median progression-free survival (PFS) of patients with PD-L1 positivity in tumor-infiltrating immune cells at a cutoff of 10% was 23.9 and 16.8 months, respectively and significantly better than those of patients with PD-L1 negativity (23.9 vs. 15.7 months, p=0.023, 16.8 vs. 10.0 months, p=0.018). In multivariate analysis, simple cholecystectomy, no adjuvant chemotherapy and PD-L1 negativity (negative & <10% positive) in tumor-infiltrating immune cells were significant poor prognostic factors.

Conclusions : Our results showed that PD-L1 expression in tumor-infiltrating immune cells at a cutoff of 10% is an independent significant prognostic factor in advanced GBC patients. Therefore, PD-L1 expression could be a good prognostic marker to guide future immune target-based therapies in GBC. Further large scale study is needed.

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