

ABSTRACT

Purpose: Immune checkpoint proteins programmed cell death 1 (PD-1) and programmed cell death ligand 1 (PD-L1) are important therapeutic targets for head and neck cancer. This large-scale case study aimed to analyze tongue squamous cell carcinomas (SCCs) and evaluate the correlation between PD-L1 expression and clinical prognosis. So far, this study is the largest case study on PD-L1 expression in tongue SCCs.

Methods: This is a case-control study that analyzed 121 tongue SCCs. Paraffin-embedded sections and clinical data were obtained retrospectively and immunohistochemistry with PD-L1 was performed.

Results: 11.6% contained $\geq 50\%$ of PD-L1-positive cells, 57.1% of these cases had a poor prognosis with nodal metastasis. Among cases of T1/2 primary lesions with nodal metastasis, cases of high PD-L1 expression had a significantly shorter disease-free survival than cases of no PD-L1 expression ($p=0.018$). The hazard ratio for high PD-L1

expression was 3.21 (95 per cent CI, 1.26-8.72) compared with no PD-L1 expression after adjusting for other factors.

Conclusions: These data indicate that PD-L1 upregulation in tongue SCCs is associated with a more advanced stage and shorter disease-free survival. PD-1/PD-L1 inhibitors might hence constitute potential adjuvant therapy for tongue SCCs with PD-L1 upregulation.