

Research paper 3

Evaluation of PDL-1 expression in thyroid carcinoma and its correlation with clinicopathological parameters in a North Indian populationN. Anand¹, N. Husain¹, R. Pradhan²¹Department of Pathology, ²Department of Endocrine Surgery, Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow UP, India

Introduction and objective: Programmed death-ligand-1 (PD-L1) is a potential target for immune checkpoint inhibitors in various cancers. The current study aimed to evaluate PD-L1 expression in thyroid carcinomas, and its associations with clinicopathological parameters.

Methodology: 100 thyroid malignancies, including papillary, follicular, and anaplastic carcinomas and a control group of 25 benign cases were evaluated for PD-L1 expression using SP263 clone for membranous staining in tumour cells and immune cells in tissue sections. Tumour proportion score (TPS), immune proportion score (IPS) and combined positive score (CPS) were evaluated at a cut-off of $\geq 1\%$, $\geq 10\%$, and $\geq 50\%$ and correlated with clinicopathological characteristics using the Mann-Whitney U test and ANOVA ($p < 0.05$), using SPSS version-20 for statistical analysis.

Results: The mean age of patients was 42.6 years, and the male: female ratio was 1:3. TPS was 25.8%, 16.7% and 10% at cut-off values of $\geq 1\%$, $\geq 10\%$ and $\geq 50\%$, respectively. IPS was 28%, 22.4% and 12.8% at the above listed cut-off values, respectively. Four cases out of 25 controls showed weak cytoplasmic staining and regarded as negatives. TPS and IPS had a significant association ($p < 0.05$) with tumour size, margin status, and pTN stage but not with age, sex and tumour type.

Discussion and conclusion: PD-L1 is expressed in tumour cells in 25.8% of cases, suggesting that the PD-1/PD-L1 axis may be abnormally activated in thyroid malignancies. IPS is also high in PD-L1-expressing tumours, and these cases may also be subjects for therapeutic targeting. Future clinical trials are required to assess the efficacy and safety of anti-PD-L1 therapies in thyroid malignancy.

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Keywords: PD-L1 expression, epithelial thyroid malignancy, immune cells

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