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The Expression of Immune Checkpoint Inhibitors PDL-1 and CTLA-4 in Pancreatic Versus Non-Pancreatic Periampullary Adenocarcinoma: An Immunohistochemical Study.

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Background: Periampullary cancers constitute about 5% of gastrointestinal malignancies. They are comprised of tumors of diverse origins and are generally subdivided into pancreatic and non-pancreatic carcinomas. Immune checkpoint regulators, cytotoxic T-lymphocyte antigen 4 (CTLA-4), and the programmed cell death ligand-1 (PDL-1) have emerged as promising new targets for cancer therapeutics.

Aim: This study aims to determine the possible role of immune checkpoint inhibitors PDL-1 and CTLA-4 in periampullary carcinoma of pancreatic and non-pancreatic adenocarcinoma subtypes, in an attempt to investigate the possible introduction of their related immunotherapy in the management of these tumors.

Materials and Methods: Expression of immune inhibitory molecules was examined by immunohistochemistry in 40 cases including (20) pancreatic adenocarcinoma and (20) non-pancreatic adenocarcinoma. The association between markers and clinicopathological parameters was evaluated.

Results: Statistically significant differences in the immunoexpression of both CTLA-4 and PDL-1 in the two studied groups were noticed with higher expression in non-pancreatic adenocarcinoma in relation to pancreatic adenocarcinoma (P=0.004, P=0.008) respectively. PDL-1 expression was positive in 15% and 55% of pancreatic and non-pancreatic adenocarcinoma cases, respectively with a significant correlation with lymph nodes metastasis in non-pancreatic adenocarcinoma cases. CTLA-4 was positive in 20% of pancreatic carcinoma with a significant correlation with lymph node metastasis,

perineural invasion and T stage. In non-pancreatic periampullary adenocarcinoma, CTLA-4 was positive in 65% of cases with a significant association with lymph nodes metastasis and T stage.

Conclusions: Immunotherapy using anti-PDL-1 and CTLA-4 are proposed as a novel promising management tool in non-pancreatic periampullary adenocarcinoma not in pancreatic adenocarcinomas.

مقبولة للنشر في : المجلة الدولية للسرطان وابحاث الكيمياء الطبية

Accepted for publication in : International journal of cancer and biomedical research (IJCBR)