Immunotherapeutic Interventions in Carcinoid Tumors

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Introduction: Management of carcinoid tumors consists of pharmacological treatment and surgical resection. Pharmacologic treatments have side effects and are often limited in their scope. Though surgical intervention can be curative, carcinoid tumors are asymptomatic and are not detected until they metastasize. Immunotherapy has the potential to overcome the limitations both surgical and pharmacologic options face. Active and passive immunotherapeutic options for treatment of carcinoid tumors are summarized here.

Methods: A PubMed search was conducted yielding studies focused on carcinoid tumor characteristics, standards of care, and immunotherapeutic approaches. Carcinoid tumor immunotherapy clinical trial results and other relevant data was extracted from each study.

Results: The search yielded 16 studies encompassing 6 immunotherapies. Two studies reported overall response rates (ORR) to combined ipilimumab-nivolumab as 25% and 26%. ORR to pembrolizumab monotherapy was reported by two studies as 3.7% and 12%. Pembrolizumab combined with lanreotide produced stable disease in 40% of patients. Spartalizumab ORR was 7.4%. Lu-Dotatate ORR was 14.7% with 65.2% progression-free survival after 20 months. Tidutamab achieved stable disease in 27% of patients. AdVince was tumoricidal to 100% of resected metastatic carcinoid tumor cells and delayed subcutaneous carcinoid tumor growth in mice.

Conclusion: All immunotherapeutic agents achieved significant antitumor activity defined by their respective studies, with the exception of spartalizumab. However, immunotherapy demonstrated limited benefit as a monotherapy to carcinoid tumor management. Treatment related-adverse events may require future monitoring and evaluation. Further investigation is warranted to assess immunotherapy efficacy as an adjunct to chemotherapy and surgical resection.

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