731 CONCURRENT IMMUNOTHERAPY AND DIPEPTIDYL PEPTIDASE-4 INHIBITION AMONG PATIENTS WITH SOLID TUMORS

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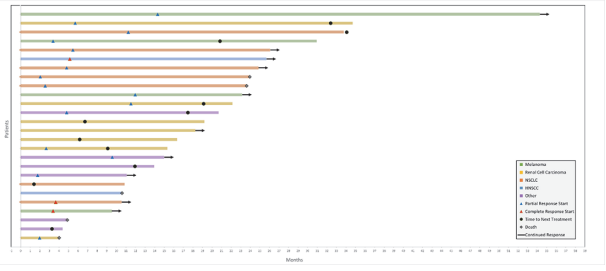
Background Durable remissions are possible for patients with solid tumors treated with immune checkpoint inhibitors (IO); however, response rates remain relatively low. Recent preclinical data with dipeptidyl peptidase-4 inhibitors (DPP4i), widely used for diabetes management, have shown synergistic antitumor activity with IO in mouse models.[1 2] However, there are no currently available data on concurrent use of DPP4i among patients treated with IO.

Methods We performed a retrospective, IRB-approved, review of all patients with solid tumors treated with IO at Vanderbilt-Ingram Cancer Center and concurrent DDP4i treatment for diabetes mellitus through review of the electronic medical record. Inclusion criteria required patients were to be on DPP4i at the start of IO treatment. The cutoff date was June 22, 2021. Outcomes measured were objective response rate (ORR), time on treatment, time to next treatment (TTNT), immune-related adverse events (iRAE), and overall survival (OS). All patients were included in the toxicity analysis; however, patients treated in the adjuvant setting, those without measurable radiographic disease, and those without available post-treatment scan were excluded from the response analysis.

Results In total, 34 patients were identified on concurrent IO plus DPP4i. The most common tumor types were melanoma (29%), renal cell carcinoma (21%), and non-small cell lung cancer (21%). Pembrolizumab was the most common IO agent (47%), followed by nivolumab (41%), ipilimumab (15%), atezolizumab (6%), and durvalumab (3%). Sitaglipitin (74%) was the most common DPP4i, followed by linagliptin (18%), saxagliptin (6%), and alogliptin (3%). 14/34 patients (41%) developed any grade IRAE while on treatment with 6/34 (18%) requiring discontinuation of IO. Of the 26 patients who met inclusion criteria for the response analysis, 18 (69%) had PR or CR, 4 (15%) had stable disease, and 4 (15%) had PD as best response (figure 1). The median follow-up time was 19.0 months (IQR: 11–25.2) and the median time on treatment was 10.1 months (95 CI: 4.9–14.5). The median TTNT was 23.9 months (95% CI:10.7–34.5) and median OS was 31.4 months (95% CI: 21.0-NE).



Abstract 731 Figure 1 Swimmers plot. An illustration of clinical events for 26 patients treated with concurrent checkpoint inhibitor (IO) and dipeptidyl peptidase-4 inhibitors (DPP4i). The timeline begins on the date of IO initiation. Each subject is represented along the y axis, with various symbols noting events such as Partial Response (PR), Complete Response (CR), start date of next line of therapy, continued response, or death. Duration of follow up ended with either patient death or study completion (6/22/21)

Conclusions This analysis represents the first data on concurrent DPP4i with IO in the treatment of solid tumors. While the cohort for response analysis was small, the ORR was high. Prospective evaluation of IO plus DPP4-i is needed to determine potential clinical efficacy of this combination.

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Ethics Approval Vanderbilt University Institutional Review Board approved this study under "exempt" status (IRB# 202314). All patient information was de-identified and secured.

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