reports on PUBMED. Selected dermatologic events following immunotherapy were identified in the electronic medical record. Unadjusted odds ratios (OR) for the development of a given cutaneous event was calculated by comparison to the non-ICI general population.

Results Of the 1,857 patients treated with anti-PD-1 ICIs, there were 1,079 patients treated with nivolumab, 821 patients treated with pembrolizumab, and 43 patients treated with both pembrolizumab and nivolumab. There were 254/1,857 (13.7%) patients that developed one of the 28 different dermatoses identified from literature review following anti-PD-1 ICIs. Compared with the general population, patients treated with anti-PD-1 had a greater risk for development of mucositis (OR 65.7, 95% CI 35.0-123.3), xerostomia (OR 11.9, 95% CI 8.4-16.8), pruritus (11.3, 95% CI 8.9-14.3), and lichen planus/lichenoid dermatitis (OR 10.7, 95% CI 5.6-20.7) compared to the control group.

Conclusions We report the frequency of dermatoses encountered in the setting of ICI therapy, both commonly (pruritus, rash, vitiiligo) and more rarely reported (scleroderma, urticaria). As nivolumab and pembrolizumab currently make up the bulk of approvals for ICI therapy, this analysis of real-world irAE incidence will be of use to treatment teams to improve quality of life and ensure ICI therapy adherence. Furthermore, this analysis sets the stage for future in-depth investigation of these cutaneous toxicities, including dose-response relationships, prognostic information from cutaneous events, and optimal treatment strategies.

Ethics Approval This study did not require IRB approval, due to the use of anonymized and de-identified aggregate-level data.

http://dx.doi.org/10.1136/jitc-2020-SITC2020.0855

PRELIMINARY REVIEW OF DIABETES MELLITUS INCIDENCE IN PATIENTS TREATED WITH IMMUNE CHECKPOINT INHIBITORS (ICI) THERAPY – ROSELL PARK COMPREHENSIVE CANCER CENTER (RPCCC) EXPERIENCE

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Background Immune checkpoint inhibitor (ICI) therapy has revolutionized cancer treatment and has become a standard of care. There are now numerous FDA approved indications for ICIs and an increasing number of patients receiving these treatments, which has led to an increase in the risk of immune-related adverse events (irAEs) including endocrinopathies. Diabetes mellitus is a rare irAE of ICI therapy with an approximate incidence of 1-2%. There is paucity of data in literature about incidence, characteristics and possible predictive factors of ICI-induced diabetes mellitus. Due to limited data on ICI-induced diabetes, we conducted a retrospective review of patients who received ICI therapy at RPCCC and developed diabetes mellitus. The goal of this study is to report incidence and characteristics of new onset and worsening of diabetes in patients treated with ICI therapy.

Methods We conducted a retrospective chart review of patients who received ICIs treatment from January 1st, 2010 to May 15th, 2020. We identified patients with newly diagnosed diabetes and worsening of preexisting diabetes. Newly diagnosed diabetes was defined as fasting blood glucose ≥126 or hemoglobin A1c (HbA1c) ≥6.5, random blood glucose ≥200 mg/dL with symptoms or 2-hour blood glucose ≥200 mg/dL on oral glucose tolerance test. Worsening of preexisting diabetes, defined as more than 0.5% increase in absolute HbA1c value in preceding 3-6 months or need for insulin in stable patients with diabetes on oral hypoglycemic agents. Subjects with pre-existing type 1 diabetes mellitus or on systemic corticosteroids for more than 1-week duration prior to diagnosis of diabetes mellitus were excluded.

Results Of the 2,382 reviewed patients who received one or multiple ICIs, 15 patients developed new onset of diabetes and 12 patients experienced worsening of pre-existing Type 2 diabetes. In these 27 patients, 8 presented with diabetic ketoacidosis. Median time to new onset diabetes or worsening diabetes from ICI treatment initiation was 19 weeks, ranging from 2 to 320 weeks. Positive autoantibodies were found in 3 patients, among who 2 patients with positive Glutamic Acid Decarboxylase (GAD65) antibodies and one patient with positive insulin autoantibodies (IAA).

Conclusions The incidence of new onset diabetes and worsening diabetes in patients treated with ICI therapy was 1.1%.

Ethics Approval The study was approved by Roswell Park Comprehensive Cancer Center’s Ethics Board, IRB ID STUDY00001278/BDR 129520.

Consent exempt

REFERENCES

http://dx.doi.org/10.1136/jitc-2020-SITC2020.0856

Novel single-agent immunotherapies

LAMP1 TARGETING OF THE LARGE T ANTIGEN OF MERKEL CELL POLYOMAVIRUS ELICITS POTENT CD4+ T CELL RESPONSES AND PREVENTS TUMOR GROWTH

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Background The majority of Merkel cell carcinomas (MCC), a rare and highly-aggressive type of neuroendocrine skin cancer, are associated with Merkel cell polyomavirus (MCPyV) infection. MCPyV integrates into the host genome, resulting in expression of a truncated form of the viral large T antigen (LT) in infected cells, and making LT an attractive target for therapeutic cancer vaccines. While induction of tumor-reactive CD8+ T cells is a major goal of cancer therapy, CD4+ T cells provide essential support to CD8+ T cells by promoting their expression of cytotoxic effector molecules and increasing their migratory capacity. Cytokines secreted by CD4+ T cells, such as IFNγ, can also exert desirable effects on the tumor microenvironment. Therefore, we set out to design a cancer vaccine that promotes potent, antigen-specific CD4+ T cell responses to MCPyV-LT.

http://dx.doi.org/10.1136/jitc-2020-SITC2020.0856