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Diabetic Ketoacidosis after Treatment with Pembrolizumab

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Perspective

It has been demonstrated that medications that block immune checkpoints hasten type 1 diabetes. We describe a case of abrupt severe diabetic ketoacidosis in a patient without a history of the disease who became sick after beginning Pembrolizumab anti-PD1 treatment. Key Words: Melanoma, diabetic ketoacidosis, Pembrolizumab, immune checkpoint inhibitors, and programmed cell death receptor Introduction Pembrolizumab is a monoclonal antibody that functions by inhibiting the inhibitory ligand of the receptor and is primarily utilised to treat advanced metastatic malignant melanoma as well as previously less sensitive tumour types [1]. Therapy a 48-year-old lady was presented to the emergency room with a history of developing breathing problems during the previous 24 hours but no prior personal history of diabetes. She began to feel dehydrated at this time. She did not mention any recent upper respiratory infections, flu-like symptoms, or abdominal pain. There was no history of diabetes in the family. She had just received a melanoma diagnosis and was weeks into her treatment regimen when she presented. She had already undergone one cycle of pembrolizumab treatment [2]. She had never had treatment with any other drugs that might have caused her to develop diabetes, such as corticosteroids. She was discovered to be clinically dehydrated upon examination, with dry mucous membranes and a loss of skin turgor. She had a normal 110 beats per minute heartbeat. On admission, Kuss-Maul breathing was noted. Her respiratory rate was 34 and blood pressure was 119/85 mm Hg. Her HBA1c was 64 mmol/mol, her blood sugar was 28 mmol/l, and her urine ketones were Adrenal antibodies and thyroid peroxidase antibodies were reported to be negative. Both baseline cortisol levels and thyroid function were within acceptable limits [3]. White cell count was not raised, and there were no abnormalities visible on the chest X-ray. She underwent treatment for acute diabetic ketoacidosis, and her recovery went without a hitch. She was released from the hospital on a basal bolus insulin regimen, and throughout the course of the next month, her blood glucose stayed steady while taking insulin with no dosage adjustments [4]. Pem brolizumab was not given since it was considered to have a significant endocrinopathy. Immune system regulation is decreased by [5]. Immune checkpoint drug pembrolizumab reduces the activity of PD1 by blocking the interaction between PD1 and PDL1 [6]. Therefore, autoimmunity is increased. Immune checkpoints are impacted and T-cell responsiveness is inhibited by several malignancies. Immunological response. Several cells, including resting T cells, B cells, dendritic cells, macro-phages, vascular endothelial cells, and pancreatic islet cells express which could have negative effects. Pembrolizumab may have an impact on normal function by triggering more T-cells, which increases the chance of unfavourable autoimmune side effects. This would have created a severe endocrinopathy in our patient, brought on by elevated levels of the anti-GAD antibody. While autoimmunity to other endocrine tissue has been shown in other case reports, our patient's thyroid or adrenal tissue did not exhibit any signs of autoimmunity. Patients who had previously been euglycemic and were on anti-PD1 medications were described as acquiring a new case of hyperglycemia. The unfavourable effects' presenting characteristic was Diabetes mellitus with hyperglycemia also describe instances comparable to ours, in which euglycemic patients treated with anti-antibody therapy developed DKA despite having no family history of diabetes. The case of one of our patients highlights the possibility of Type 1 Diabetes mellitus and hyperglycemia developing as uncommon adverse events in patients with advanced melanoma who get pem brolizumab treatment. If left untreated or treated too slowly, diabetic ketoacidosis has the potential to be lethal. Early symptom identification and treatment are crucial for lowering ketoacidosis-related mortality and morbidity. Although catastrophic fulminant diabetic ketoacidosis has been described in peombrlizumab-induced diabetes, our patients' histories of hours of symptoms point to the possibility that earlier presentation and consequently earlier intervention could have been achieved with earlier education of warning symptoms and signs Progression.

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