and hyperglycemic emergencies as a potential adverse effect of this treatment. It highlights the need to ensure that blood glucose is monitored throughout treatment to prevent hyperglycemic emergencies.

Diabetes Mellitus and Glucose Metabolism

DIABETES CASE REPORTS

Case Series: Exacerbation of Insulin Resistance With Active COVID 19 Infection

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Background: Severe hyperglycemia due to insulin resistance is associated with increased mortality due to induction of pro-inflammatory cytokines, immunodepression, impairing cellular function and healing. We describe 6 patients admitted with COVID19 pneumonia complicated with DKA requiring high dose insulin infusion.
 # 1 19 yo African American (AA) male with history of pre-DM and obesity (BMI 41 kg/m2) presented with polyuria, polydipsia, obtunded and intubated in ER. Labs showed pH 7.35, serum sodium (Na) 138 mmol/L, potassium (K) 6.8 mmol/L, chloride (Cl) 85 mmol/L, bicarbonate (HCO_3) 10 mmol/L, glucose 1140 mg/dL, lactate 1.4 mmol/L, anion gap (AG) 43, Beta Hydroxybutyrate (BOH) > 4.50 mmol/L. A1c 13.4%. Placed on insulin drip at 29.5 U/hr or 5.7 U/kg/hr. Discharged on Detemir 60 U TID and Novolog 20 U TID ac.
 # 2 55 yo female with T2DM and obesity (BMI 37.42 kg/m^2) presented with shortness of breath, intubated for hypoxia in ER. Labs showed pH 7.21, serum Na 138 mmol/L, K 5.6 mmol/L, Cl 101 mmol/L, HCO_3 13 mmol/L, glucose 557 mg/dL, lactate 5 mmol/L, AG 24, BOH > 0.27 mmol/L. A1c 7.8%. Placed on insulin drip at 23 U/hr or 5 U/kg/hr. Died from multiorgan failure on day 7.
 # 3 75 yo Hispanic female with T2DM, HCV, post liver-kidney transplant on immunosuppressants, HTN presented with weakness. Intubated on day 6 for hypoxemia. Placed on stress dose steroids for transplant failure. BMI 30 kg/m^2. Labs on day 6 showed pH 6.98, serum Na 140 mmol/L, K 3.5 mmol/L, Cl 100 mmol/L, HCO_3 20 mmol/L, glucose 590 mg/dL, AG 20, BOH 1.40 mmol/L. A1c 6.6% a year ago. Placed on insulin drip at 34 U/hr or 10.9 U/kg/hr. She developed ESRD requiring CRRT dialysis. She was made comfort care. Died on day 7.
 # 4 38 yo AA male with obesity (BMI 59.5 kg/m^2) presenting with confusion, polyuria, polydipsia. Labs showed pH 7.22. serum Na 133 mmol/L, K 6.8 mmol/L, Cl 81 mmol/L, HCO_3 15 mmol/L, glucose 1760 mg/dL, lactate 3.8 mmol/L, AG 37, BOH > 4.50 mmol/L. A1c 12.6%. Placed on insulin drip at 36 U/hr or 6 U/kg/hr. Discharged on Detemir 20 U qhs.
 # 5 27 yo AA female with T2DM, HTN and obesity (BMI 51 kg/m^2), pituitary adenoma presented with seizures. Labs showed pH 7.15, serum Na 133 mmol/L, K 7.0 mmol/L, Cl 84 mmol/L, HCO_3 7 mmol/L, serum glucose 951 mg/dL, lactate 1.6 mmol/L, AG 24, BOH >2.45 mmol/L. A1c >15%. Placed on insulin drip at 24 U/hr or 5 U/kg/hr. Died on day 5 from multiorgan failure.
 # 6 74 yo Hispanic female with T2DM, HTN and asthma presented with altered mental status. BMI 28 kg/m^2. Labs showed pH 7.25, serum Na 155 mmol/L, K 4.6 mmol/L, Cl 125 mmol/L, HCO_3 17 mmol/L, serum glucose 779 mg/dL, lactate 2.6 mmol/L, AG 13, BOH >2.45 mmol/L. A1c > 15%. Placed on insulin drip at 24 U/hr or 3.5 U/kg/hr. Died on day 5.
Conclusion: Patients with DM and obesity admitted with Covid19 infection presented with severe insulin resistance and poor outcomes. Cconsideration should be given to assessing therapeutic interventions to enhance insulin sensitivity and improve outcomes.

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DIABETES CASE REPORTS

Checkpoint Inhibitor-Associated Autoimmune Diabetes Mellitus: A Case Report

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Introduction: Checkpoint Inhibitors have revolutionized the management in oncology by stimulating the immunological response to cancer. On the contrary, there is an increase in immune-related adverse effects affecting various systems including the endocrine. We report a unique case of new-onset diabetes with diabetic ketoacidosis (DKA) within 18 days of receiving checkpoint inhibitors for Merkel Cell Carcinoma.
Clinical Case: An 86-year-old man diagnosed with locally advanced Merkel cell carcinoma underwent surgery and radiotherapy to his right face and neck. Four months later, the positron emission tomography (PET) scan was consistent with liver metastasis. Pembrolizumab, a programmed death receptor-1 (PD-1) inhibitor was initiated as next line treatment. Prior to starting pembrolizumab, his blood glucose was 92 mg/dL (60–120) with no previous history of diabetes mellitus. He presented 18 days later to the emergency room with altered mental status, polyuria, and polydipsia with a blood glucose of 980 mg/dL, anion gap of 26 mmol/L (5–15), and was managed for DKA with new-onset Diabetes Mellitus. HbA1C was 7.0% (4–5.6). He was discharged on subcutaneous insulin glargine once daily, pre-meals insulin aspart, and was referred to the endocrinology clinic. Further investigations obtained during the clinic visit demonstrated low C-peptide of <0.7 ng/mL (0.8–6), glucose 76 mg/dL, positive glutamic acid decarboxylase (GAD-65) antibodies of >25,000 nmol/mL (<0.02), negative islet antigen-2 antibody, islet cell antibody and zinc transporter 8 antibodies. Other endocrine tests showed normal thyroid function, cortisol, and adrenocorticotrophic hormone (ACTH) levels. The patient was educated on checkpoint inhibitor-associated autoimmune diabetes and the need for a lifelong insulin regimen.
Clinical Lesson: Our case highlights the immune-related adverse effect involving the endocrine system from checkpoint inhibitor therapy. In comparison to the other common