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Symposium
Introduction

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Diabetes Case Reports

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More than 37 million people in the Unites States have diabetes; approximately 20% are unaware that they have the disease.[1,2] An additional 96 million Americans have prediabetes, with more than 80% of those individuals not knowing that they are at high risk for developing diabetes.[1,2] Patients admitted to the hospital with known diabetes typically have additional comorbidities such as hypertension, high cholesterol, and chronic kidney disease,[2] which frequently contribute to the complexity of their care. It becomes even more challenging to appropriately diagnose and treat acutely ill patients who present with an additional comorbidity of an unknown diabetes diagnosis. Although insulin has been, and remains, a mainstay of treatment for more than 100 years,[2] new treatments for acute consequences and complications of diabetes have been rapidly evolving and are becoming increasingly tailored to the individual patient situation.[3] There are at least 11 pathways that lead to hyperglycemia, and new classes of medications are being developed and used to target these different pathways.[3] This rapid evolution in treatments can make it challenging for providers and bedside nurses to remain up-to-date on the latest evidence and interventions. The purpose of this symposium series is to use case report presentations to highlight aspects of the evolution of diabetes care and potential complications of which to be aware.

Sodium-glucose cotransporter-2 (SGLT2) inhibitors are increasingly being used in patients with diabetes as well as in patients with heart failure with or without diabetes because of their cardiorenal protective effects.[4,5] Patients taking SGLT2 inhibitors are at an increased risk of developing a unique form of diabetic ketoacidosis (DKA), in which patients exhibit ketosis, metabolic acidosis, and *normoglycemia* rather than hyperglycemia. Klinkner and colleagues present a case report of euglycemic DKA and discuss the diagnosis and treatment of patients with this diagnosis.

Bak describes a case example highlighting how uncontrolled diabetes can lead to hypertriglyceridemia and ultimately acute pancreatitis. This combination of diseases can lead to life-threatening illness. Bak discusses the interrelatedness of these diagnoses and how treatment with insulin improves the hyperglycemia while also decreasing triglyceride levels.

Glucocorticoids are commonly used in critically ill patients and can lead to steroid-induced hyperglycemia in many patients, including those with known diabetes mellitus and those who are undiagnosed. Pollock presents a case report of

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steroid-induced hyperglycemia in a patient presenting with worsening respiratory status 3 weeks after a COVID-19 diagnosis who was discovered to also have previously undiagnosed diabetes. The author provides valuable information on how to optimize blood glucose control by choosing the appropriate type of insulin to align with the pharmacokinetics of the glucocorticoid being administered.

The final case report in this series highlights the challenges of treating diabetes-related gastroparesis (DRG), a complication that can develop later in the course of diabetes mellitus. Patients with DRG can have frequent episodes of intractable vomiting requiring hospitalization. Batty and colleagues describe the development and implementation of a DRG treatment protocol, initiated in the emergency department and guiding care through hospitalization and postdischarge. The authors highlight this protocol in a case example that demonstrated prompt intervention and resolution of the DRG flare and a notably reduced hospital length of stay.

I hope that this series of case studies provides both an underlying foundation of evidence for new treatments being used for patients with diabetes as well as new perspectives on treatment of long-standing complications and consequences of diabetes mellitus.

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