

glucose usually greater than 350 from a lack of insulin. Recent warnings have been issued by the FDA about the use of SGLT2s leading to DKA. While the exact mechanism of how DKA occurs in these individuals on SGLT2s is unknown, uniquely these patients often have had hyperglycemia only slightly above the normal range compared to traditional DKA. This can lead to a delay in diagnosis because a lower blood glucose could place DKA lower on the differential diagnosis.

Conclusion: Conclusion: This case highlights the need for further research to determine the exact mechanism for how DKA occurs at lower levels of hyperglycemia compared to traditional levels for those on SGLT2s. It also showcases the need for physicians to be aware of the potential for nontraditional presentations of DKA in order to not delay treatment in these patients

Abstract #309

THE RELATIONSHIP BETWEEN VITAMIN D DEFICIENCY AND DIABETIC RETINOPATHY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objective: Diabetic retinopathy (DR) is one of the leading cases of blindness throughout the world. The role of vitamin D in the pathogenesis of diabetic retinopathy remains an area of debate. The purpose of this study was to comprehensively determine the strength of association between vitamin D deficiency (VDD) and DR. The secondary objective of this study was to determine if there exists any significant difference in serum vitamin D levels between patients with DR and control group patients.

Methods: Two authors independently searched published studies indexed in the MEDLINE and EMBASE from their date of inception to July 2015. We conducted a systematic review and meta-analysis of observational studies that assessed the association between diabetic retinopathy and vitamin D deficiency. Vitamin D deficiency is defined as a serum level less than 20 ng/mL. Optimal vitamin D level was defined as a serum level greater than 30 ng/mL. Pooled odds ratios (OR) and mean difference (MD) with 95% confidence intervals (CIs) were calculated using a random-effect, Mantel-Haenszel analysis.

Results: The initial search yielded 122 articles. Data were extracted from 13 studies involving 9,350 participants with diabetes mellitus who had undergone assessment for both DR and VDD. There is a statistically significant association between diabetic retinopathy and vitamin D deficiency with a pooled OR of 1.44 (95% CI: 1.15 to 1.81, P=0.001). There was also a statistically significant lower

serum 25-hydroxyvitamin D level in patient subgroups with diabetic retinopathy vs control groups with a mean difference (MD) of -2.25 ng/mL (95% CI: -3.64 to -0.87, P=0.001)

Conclusion: Our meta-analysis and systemic review demonstrates a significant association between VDD and DR and demonstrates a statistically significant difference in mean serum vitamin D levels between DR and non-DR patients. Vitamin D supplementation as a protective mechanism against the development and progression of DR, particularly in elderly female patients, warrants further investigation.

Abstract #310

ACUTE PERICARDITIS AS A RARE CONSEQUENCE OF SEVERE DIABETIC KETOACIDOSIS

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Case Presentation: A 33-year-old Hispanic man with insulin-dependent diabetes of 15 years' duration was admitted to the hospital with a 2-day history of nausea, vomiting, and worsening shortness of breath. He endorsed loss of appetite and was unable to hold food down. He vomited a number of times after attempts to drink soup. There were no changes in urinary frequency. He decided to stop taking insulin yesterday because of poor oral intake. He stated that he had been compliant to his insulin until yesterday. His normal insulin regimen includes lispro 15 units before meals and glargine 20 units at bedtime. On examination he was alert and oriented to person, place, and time. He was found to have had Kussmaul's respirations. The temperature was 35.3°C, pulse 135/minute, and blood pressure 118/58 mmHg. Auscultation of the heart and lungs was normal. The abdomen was soft and bowel sounds were present.

Initial labs showed a blood glucose of 900 mg/dL, plasma bicarbonate 3 mmol/L, blood urea 33 mg/dL, plasma sodium 133 mmol/L, potassium 5.7 mmol/L, with a calculated serum osmolality of 299 mosmol/kg. There was no evidence of any precipitating infection on history. Blood cultures, throat swab for viral infections, and urine culture were all sterile. He was diagnosed with severe DKA and was treated with intravenous fluids and insulin infusion. After 48 hours of hospitalization, he began to complain of substernal chest pain. This pain was very sharp in character, worse on deep inspiration. Electrocardiogram was done and shown definite ST elevation in leads I-III,AVL,AVF and V2-V6. Troponin T was elevated to 29 ng/mL from 0.01 on admission. The Echocardiogram showed normal left ventricular size and contractility with LVEF 63%. He was diagnosed with acute pericarditis