



COVID with Diabetic Ketoacidosis: Intriguer or Consequence

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To the Editor: COVID-19 being a multisystem inflammatory state, it is theoretically possible that any of the organ systems with the angiotensin-converting enzyme 2 (ACE2) receptors in abundance might be a source of some clinical manifestation. Endocrine and exocrine dysfunction of pancreas may be one such manifestation. Here, we present a series of 5 children (3 female and 2 male) with diabetes ketoacidosis (DKA) with COVID-19 admitted to our center between May 2020 and August 2020.

COVID antigen testing was positive for 4 children while RT-PCR report was positive for 1 child. In the present case series, 4 children had severe DKA while 1 had moderate DKA; acute kidney injury was present in all children but only one patient required renal replacement therapy while others improved with medical management during treatment course. Cerebral edema was present in 3 patients and it was managed conservatively. None of them had any significant radiograph findings and did not require any supplemental oxygen support.

Lymphopenia was present in 1 patient (severe DKA), Serum ferritin was done in 2 patients and it was within normal limit, D-dimer was done in 3 patients and it was elevated in all 3 of them (severe DKA), C-reactive protein and procalcitonin was positive in one patient (severe DKA).

COVID-19 and DKA are both hyperinflammatory states, which, in conjunction, would theoretically result in hyperacute rapidly progressive illness [1]. The exact mechanism of such presentation in association with SARS CoV2 is still presumptive. ACE2 is highly expressed in the lungs and

pancreas and entry of SARS-CoV-2 into pancreatic islet cells may directly aggravate beta cell injury [2, 3] and massive cytokine release can damage islet cells [4].

Though the exact causal and co-existence relationship between diabetic ketoacidosis and COVID-19 is still presumptive, it is wise to be watchful of its occurrence. This may serve as an opportunity to institute-appropriate COVID-19 screening measures in children presenting as DKA.

Compliance with Ethical Standards

Conflict of Interest None.

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