

**PP38 COVID 19 DIABETIC
KETOACIDOSIS : FLUID VS
OXYGEN RESUSCITATION
DILEMMA**

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INTRODUCTION : Diabetic ketoacidosis (DKA) is a life threatening condition that has been implicated in coronavirus disease 2019 (COVID-19). The proposed pathophysiology includes hyperinflammatory process triggered by SARS-CoV2 causing pancreatic beta cells injury with subsequent insulinopenia. DKA in the presence of severe COVID-19 pneumonia prove a challenge to treating physician as we need to balance between metabolic and respiratory component during resuscitation.

CASE PRESENTATION & RESULTS : A 26-year-old obese man with no other medical illness, presented with one day history of shortness of breath, preceded by three days of non-productive cough. He has no fever, vomiting, abdominal pain, or diarrhoea. No prior osmotic symptoms such as polyuria or polydipsia. He was alert, tachypneic at 38 breaths per minute with saturation of 84% under room air. Lungs had bibasal crepitation. Bedside dextrose and ketone showed high index. Arterial blood gas showed metabolic acidosis with respiratory compensation; pH 7.17, pCO₂ 13.6 mmHg, pO₂ 159 mmHg, HCO₃ 9.4 mmol/L. Total white count was elevated at 24.75. Rapid Test Kit and PCR came back as COVID-19 positive. Chest radiograph showed normal heart size with peripheral multilobular consolidation. Patient was

started on High Flow Nasal Cannula, steroid and prophylaxis anti-coagulant. DKA fluid resuscitation and fixed insulin infusion were initiated as per protocol. Subsequently, patient deteriorated and later was intubated in view of acute respiratory distress syndrome (ARDS). Fortunately, he recovered and discharged 8 days later.

DISCUSSION : Fluid replacement is critical in DKA management to restore circulatory volume, clearance of ketones and to correct electrolytes disturbances. However, both DKA and COVID-19 pneumonia can induce ARDS. In this setting, aggressive fluid resuscitation may exacerbate 'lung leak'. As a result, extravascular lung water increase, causing poor gas exchange and further hypoxia. Thus, a more conservative fluid management should be applied to protect the lungs, at the expense of prolonged ketonemia.

CONCLUSION : DKA increase mortality in COVID-19 patients. Prompt recognition of DKA in COVID-19 and initiation of treatment is crucial in emergency department. Frequent clinical assessment should be performed to determine the need of further fluid boluses. This case report highlights the importance of individualized intravenous fluid replacement to avoid worsening respiratory distress in COVID-19 patient.