

## Response to: Choreo-ballistic movements heralding COVID-19 induced diabetic ketoacidosis



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### EDITORIAL

An article by Ghosh et al. states that the presence of diabetic ketoacidosis (DKA) in coronavirus disease-19 (COVID-19) patients<sup>1</sup> needs special attention. Thereafter, the authors show a case that SARS-CoV-2 has the potential induced DKA. DKA usually indicates hyperglycemia.<sup>2</sup> It has been explained that there are several possibilities for DKA in COVID-19 patients.<sup>3,4</sup> Responding to the case presented by Gosh et al.,<sup>1</sup> we are pleased that this patient is getting better, then the patient was discharged after seven days. We should note in this case that rehydration with intravenous fluids and continuous intravenous insulin infusion can save the lives of COVID-19 patients. Apart from this case, we have reported the case of DKA in COVID-19 patients. Unfortunately, the COVID-19 patients we reported did not recover and died on the 8<sup>th</sup> day after being hospitalized.<sup>5</sup>

Another case shows that DKA in male COVID-19 patients has also been reported. The first diabetes patient with no comorbidities, while the second patient was without diabetes but had hypertension and cerebrovascular accident (CVA). Both patients responded well to treatment so that they could be discharged in a stable condition. Based on these two cases, it can be seen that COVID-19 patients induced DKA because that high sensitivity

is needed to diagnose DKA in a timely manner in COPVID-19 patients.<sup>6</sup>

A previous study reported that a prospective study involving type 2 diabetes mellitus (T2 DM) patients with COVID-19 indicated a significant incidence of DKA after following parenteral glucocorticoids.<sup>7</sup> Another previous study also showed that DM is an important risk factor for COVID-19. Many clinical reports confirm that DM as a comorbid is detrimental and has high mortality in COVID-19 patients. This can happen because DM and COVID-19 are connected through three main axes. The three main axes are the ACE2 axis, the liver axis, and the inflammatory axis.<sup>8</sup> Besides that, previous research also showed that 48.4% of COVID-19 patients with DM comorbidities showed signs of pneumonia on CT scans. In addition, 32.3% of COVID-19 patients with diabetes comorbidities also indicated being admitted to the intensive care unit.<sup>9</sup> The results of other studies also showed that COVID-19 patients with DM comorbidities are associated with a risk of severe infection and high mortality.<sup>10</sup> It is clear that the risk factors for COVID-19, among others metabolic syndrome and diabetes.<sup>11</sup>

Our message for the general public is to continue implementing health protocols and following vaccinations to prevent COVID-19.

### CONCLUSION

Rehydration with intravenous fluids and continuous intravenous insulin infusion can save the lives of COVID-19 patients induced Diabetic Ketoacidosis.

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### CONFLICTS OF INTEREST

The author declared that there is no conflict of interest

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