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Children with Newly Diagnosed Type 1 Diabetes Before and During the COVID-19 Pandemic

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Dear Editor,

We would like to share ideas on the publication "A Long-Term Comparison of Presenting Characteristics of Children with Newly Diagnosed Type 1 Diabetes Before and During the COVID-19 Pandemic" (1). Kaya et al. (1) noted that increased frequency and severity of diabetic ketoacidosis (DKA) was observed in children with newly diagnosed with type 1 diabetes (T1DM) during the pandemic, and the results justify concerns about the diagnosis of other diseases during the pandemic. Kaya et al. (1) also stated that diabetes symptom recognition studies should be continued regularly to reach all parts of society during a pandemic. We agree that Coronavirus disease-2019 (COVID-19) can cause endocrine disruption and its correlation with diabetes is interesting. Severe acute respiratory syndrome-Coronavirus-2 may promote the beginning of T1DM and may hasten the emergence of DKA in juvenile diabetic patients, according to a report by Albuali and AlGhamdi (2), even in the absence of respiratory symptoms.

Kaya et al. (1) has found an increased frequency and severity of DKA in children with newly diagnosed T1DM in the pandemic period, and they are concerned about the diagnosis of other diseases during the pandemic. Although there might be limitation on controlling of confounding factors due to nature of a retrospective study based on records review, Kaya et al. (1) point to some interesting findings. Possible pathological associations may be due to an abnormal immune response/inflammation or increased blood viscosity due to COVID-19 (3,4,5). In brief, the pathogen might induce abnormal immunity that can directly attack islet cell or there might be hyperinflammatory process that can result in DKA (3,4). Additionally, the increased blood viscosity is a common observation in COVID-19 case (6). The hyperviscosity induced by COVID-19 might also be a triggering factor for DKA development (5). The current study has been able to show that there are no significant effects of immune/autoantibodies. The observation on no significant effects of immune/autoantibodies can be further interpreted in term of possible exact pathophysiology of DKA. Based on the data from the present study, the pathogenesis of DKA should be unlikely to be associated with abnormal immune response. This may mean that changes in blood viscosity after COVID-19 may contribute to the development of DKA.

Ethics

Peer-review: Internally peer-reviewed.

Authorship Contributions

Concept - Design - Data Collection or Processing - Analysis or Interpretation - Writing: Rujittika Mungmunpuntipantip, Viroj Wiwanitkit.

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