Letter

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Acute Hyperglycemic Crises with Coronavirus Disease-19: Case Reports (*Diabetes Metab J* 2020;44: 349-53)

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In December 2019, coronavirus disease 2019 (COVID-19) caused by a novel coronavirus (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]) started in Wuhan, China [1]. The World Health Organization declared the COVID-19 pandemic on March 11, 2020. Until now (2020 May 17), a total of about 45 million confirmed cases with 300,000 deaths have been reported worldwide and the number of new confirmed cases has not yet been reduced [2]. In February 2020, a COVID-19 outbreak began in Daegu, Korea and about 11,000 confirmed cases with 263 deaths have been reported. Fortunately, the spread of COVID-19 has been well controlled in Korea [3].

In this article entitled, "Acute hyperglycemic crises with coronavirus disease-19: case reports," Kim et al. [4] reported two cases with serious acute diabetes complications precipitated by COVID-19 in Daegu. Diabetes, especially poorly controlled, is associated with an increased risk of infection and adverse outcomes [5]. Based on recent reports from China and Italy, the prevalence of diabetes among COVID-19 confirmed cases was similar in each country [6]. However, recent studies reported patients with severe COVID-19 disease were older and had more comorbidities, i.e., diabetes, cancer, and cardiovascular disease [7,8]. Diabetes is indeed associated with increased serious COVID-19 presentation and mortality after adjusting for other potential risk factors [9]. This means diabetes seems to have an effect on severe coronavirus disease, the treatment process, and poor outcomes rather than on patient susceptibility to COVID-19 infection. In this regard, COVID-19 in poorly controlled diabetes patients is thought to cause acute serious diabetic complications, However, to the best of my knowledge, there are few reports regarding the occurrence of diabetic ketoacidosis and an hyperglycemic hyperosmolar state in patients with COVID-19. Therefore, this study is valuable because it describes these cases in detail including diagnosis, the treatment process, and outcomes.

In my opinion, it would be better to describe the outcome of the follow-up treatment in the second patient case. In addition, the medication history for each patient including glucose-lowering drugs, anti-hypertensive drugs, and cholesterol-lowering drugs before admission and during COVID-19 treatment needs to be added to this study. Angiotensin-converting enzyme 2 (ACE2) is known as a cellular receptor for SARS-CoV-2 [10]. Several medications used mainly for patients with diabetes such as insulin, glucagon-like peptide-1, thiazolidinediones, ACE inhibitors, angiotensin II receptor blockers, and statins are reported to affect ACE2 expression and the level of angiotensin II [11]. Although data on how these drugs influence COVID-19 are lacking, it is recommended to share the author's opinion on the effects of the drugs used on diabetes patients' severe presentation and prognosis.

Lastly, I would like to express my gratitude and tribute to the medical staff in Daegu who have worked hard and dedicated themselves to public health during the COVID-19 outbreak.

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CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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