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**Novel appearance of hyperglycemia/diabetes, associated with COVID-19**

Ilias I. New-onset diabetes in COVID-19

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**Abstract**

In a recent meta-analysis the prevalence of coronavirus disease 2019 (COVID-19)-associated hyperglycemia was 25%, and that of COVID-19-associated new-onset diabetes was 19%. An association between hyperglycemia or new-onset diabetes and COVID-19 has been suggested. In a recent relevant study of critically and non-critically ill patients with COVID-19, we found that indeed beta-cell function was compromised in critically ill patients with COVID-19 and that these patients showed a high glycemic gap. Nevertheless, one quarter of critically ill patients with no history of diabetes have stress hyperglycemia, a finding which could obscure the prevalence of hyperglycemia or new-onset diabetes that could be attributed to COVID-19 *per se*.

**Key Words:** Blood glucose; Pandemics; Severe acute respiratory syndrome coronavirus 2; Humans; Hyperglycemia; Hospitalization

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**Core Tip:** An association between hyperglycemia or new-onset diabetes and coronavirus disease 2019 (COVID-19) has been suggested. Nevertheless, one quarter of critically ill patients with no history of diabetes have stress hyperglycemia, a finding which could obscure the prevalence of hyperglycemia or new-onset diabetes that could be attributed to COVID-19 *per se*.

**TO THE EDITOR**

We have read with great interest the work by Shrestha *et al*[1] regarding new-onset hyperglycemia/diabetes (DM) in patients with coronavirus disease 2019 (COVID-19). With an erudite meta-analysis the authors found that the pooled prevalence of COVID-19-associated hyperglycemia was 25.23% and that the prevalence of COVID-19-associated new-onset DM was 19.70%[1].

An association between hyperglycemia/new-onset DM and COVID-19 has been suggested[2], *via* decreased insulin secretion and increased insulin resistance[2,3]. In a recent relevant study, of critically and non-critically ill patients with COVID-19, we found that indeed beta cell function (based on glucose and insulin measurements and using the Homeostasis Model Assessment HOMA2 estimate of steady state beta cell function[4]) was compromised in critically ill patients with COVID-19. Furthermore, these patients showed a high glycemic gap (based on admission glucose and glycated hemoglobin measurements)[5]. Nevertheless, we acknowledged that on average, 25% of critically ill patients with no history of DM have stress hyperglycemia[5-7], a finding which could obscure the prevalence of hyperglycemia/new-onset DM that could be attributed to COVID-19 *per se*.

Thus, it would be interesting if the results of the study by Shrestha *et al*[1] were presented separately-if possible-for critically and non-critically ill patients with COVID-19 and compared to non-COVID-19 patients.

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**Footnotes**

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