Letter to the Editor

Risk of mortality in COVID-19 patients with newly diagnosed and pre-existing diabetes

To the Editor,

The findings from the study by Harbuwono et al. from Indonesia published recently in *Primary Care Diabetes* add to the existing evidence that pre-existing diabetes is an independent risk factor for the mortality of coronavirus disease 2019 (COVID-19) patients [1]. In this study, 705 patients had pre-existing diabetes and 19,776 had no pre-existing diabetes. Given the large sample of those with no pre-existing diabetes, this study could have provided insights into whether those with newly diagnosed diabetes or pre-existing diabetes incur higher mortality risk from COVID-19. However, the authors lost this opportunity, as glucose and HbA1c values were not available for these patients. A few studies suggest that COVID-19 patients with newly diagnosed diabetes may have a greater risk of mortality than those with pre-existing diabetes [2]; however, these studies are constrained by small sample sizes and inadequate adjustment of confounders. It is not known whether newly diagnosed diabetes per se or hyperglycemia is the key contributing factor for the higher mortality risk from COVID-19. It is possible that the untreated proinflammatory state of those with newly diagnosed diabetes and the protective effect of antidiabetic drugs used by those with pre-existing diabetes may be playing key roles. Knowing these could provide some valuable insights for the effective clinical management of COVID-19 patients.

Studies have shown that infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) may cause new-onset diabetes and unmask previously undiagnosed diabetes, collectively known as "newly diagnosed diabetes" [3–5]. These are likely due to the destruction of beta cells of the pancreas (consequently, reduced insulin secretion), increase in insulin resistance by interfering with the insulin signaling pathways, and enhanced autoimmunity [5]. In a systematic review and meta-analysis of eight studies with 3711 hospitalized COVID-19 patients, 14.4% had newly diagnosed diabetes [4]. Thus, of the 19,776 patients without pre-existing diabetes in the Indonesian study, a significant proportion could have had newly diagnosed diabetes.

Future studies should consider separating patients with no pre-existing diabetes into those with newly diagnosed diabetes and those without and compare the risk of mortality in these groups and in those with pre-existing diabetes. More importantly, admission or the average glucose levels over the duration of hospitalization should be adjusted for in the analyses. Therefore, we recommend that all COVID-19 patients should be screened with plasma glucose and HbA1c on admission and undergo continuous monitoring of glucose during hospitalization, which would help manage these patients effectively.

Data availability

No data was used for the research described in the article.

Financial disclosures

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Conflict of interest

The author has no conflict of interest.

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