

LETTER TO EDITOR

Glycemic control and COVID-19 outcomes: the missing metabolic players

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Dear Editor,

The recent article by Zhan *et al.*¹ deserves laud for focusing on a pertinent subject of metabolic prognostication in coronavirus disease 2019 (COVID-19). Nonetheless, the index research endeavor evaluating the association between glycemic control and short- to long-term COVID-19 outcomes in a prospective cohort study including 574 COVID-19 patients with type 2 diabetes mellitus, misses out on closely related important metabolic prognostic players.¹

Appropriate to the context, the lack of account for obesity as a comorbidity in the study deserves attention. This becomes particularly relevant when the former has been demonstrated to have a considerable prognostic significance in COVID-19.^{2,3} A meta-analysis by Cai *et al.* included 46 studies with a total of 625 153 COVID-19 patients to conclude that the obese patient cohort had a significantly escalated risk of severe disease, mechanical ventilation (MV), intensive care unit (ICU) admission and mortality (odds ratio (OR); 95% confidence interval (CI); I^2 : 3.81; 1.97–7.35; 57.4%, 1.66; 1.42–1.94; 41.3%, 2.25; 1.55–3.27; 71.5%, 1.61; 1.29–2.01; 83.1%, respectively).³ Indeed, Zhan *et al.*¹ also employ a composite endpoint of the need for ICU admission, MV, in-hospital mortality or disease progression, to define short-term composite outcome in their study.

At the same time, prognostic implications of dyslipidemia are difficult to overlook in a study like Zhang *et al.*¹ featuring metabolic disturbances at the cornerstone of poor outcomes in COVID-19. Notably, Liu *et al.*⁴ outlined an association of dyslipidemia with the disease severity of COVID-19 (OR; 95% CI; I^2 : 1.27; 1.11–1.44; 39.8%, P -values = 0.038) across an accumulated data from 12 studies and overall 12 995 COVID-19 patients. The dyslipidemic subset additionally demonstrated 2.13 times an accentuated mortality risk in their analysis compared to those without dyslipidemia (P -values = 0.001).

Albeit the fact remains that Zhan *et al.*¹ were evaluating the prognostic ramifications of a dynamic management factor of glucose homeostasis, the importance of intricately linked baseline risk-predisposition cannot be overemphasized. The pivotal prognostic role of a composite risk-assessment is nested in the findings of a very recent study by Wu *et al.*⁵ They delineated that the COVID-19 patients with an underlying metabolic syndrome (defined utilizing the modified World Health Organization (WHO) criterion) manifested 56% and 81% heightened risk of ICU admission and mortality, respectively (P -values < 0.001). These results emanated subsequent to a multivariable analysis on a large retrospective data with a 39% incidence of metabolic syndrome (834 out of 2146 patients).

Needless to say, incorporation of the aforementioned missing metabolic players could have enhanced the lucidity of the Zhan *et al.* study findings, which classifies as another remarkable research aligned with the covetable aim of comprehending the potential factors associated with short- to long-term outcomes in COVID-19.

Conflict of interest. None declared.

References

1. Zhan K, Zhang X, Wang B, Jiang Z, Fang X, Yang S, *et al.* Short and long-term prognosis of glycemic control in COVID-19 patients with type 2 diabetes. *QJM* 2022. doi:10.1093/qjmed/hcac020
2. Zhang X, Lewis AM, Moley JR, Brestoff JR. A systematic review and meta-analysis of obesity and COVID-19 outcomes. *Sci Rep* 2021; 11:7193.
3. Cai Z, Yang Y, Zhang J. Obesity is associated with severe disease and mortality in patients with coronavirus disease 2019 (COVID-19): a meta-analysis. *BMC Public Health* 2021; 21:1505.

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4. Liu Y, Pan Y, Yin Y, Chen W, Li X. Association of dyslipidemia with the severity and mortality of coronavirus disease 2019 (COVID-19): a meta-analysis. *Virology* 2021; **18**: 157.

5. Wu S, Zhou K, Misra-Hebert A, Bena J, Kashyap SR. Impact of metabolic syndrome on severity of COVID-19 illness. *Metabolic Syndrome and Related Disorders* 2022. doi:10.1089/met.2021.0102