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► To cite this version:

Marc Diedisheim, Etienne Dancoisne, Jean-François Gautier, Etienne Larger, Emmanuel Cosson, et al.. Response to Letter to the Editor from Woolcott and Castilla-Bancayán: “Diabetes Increases Severe COVID-19 Outcomes Primarily in Younger Adults”. *Journal of Clinical Endocrinology and Metabolism*, 2021, 106, pp.E5277-E5278. 10.1210/clinem/dgab583 . hal-04020996

HAL Id: hal-04020996

<https://hal.science/hal-04020996v1>

Submitted on 5 Dec 2023

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Response Letter to the Editor from Woolcott & Castilla-Bancayán:Diabetes Increases Severe COVID-19 Outcomes Primarily in Younger Adults

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Keywords: diabetes, covid-19, mortality, age

DISCLOSURE SUMMARY: The authors have nothing to disclose.

Accepted Manuscript

We thank Drs Woolcott and Castilla-Bancayán (1) for their interest in our article (2). They suggest potential explanations to the differences with their own study (3).

We agree that exclusion of a large number of patients may undermine the power to detect significant differences. However, given the influence of obesity on severe forms of COVID-19 (4) we decided against imputing missing values or removing body mass index (BMI) from the multivariate adjusted model. For information, we conducted an analysis including patients without available BMI, therefore not using it in the multivariate adjusted model, and found that mortality was significantly different between patients with or without diabetes up to 70 years: <50 HR 2.06 [1.36-3.14] (p-value <0.001), 50-60 HR 1.35 [1.01-1.82] (p-value 0.04), and 60-70 HR 1.23 [1.00-1.52] (p-value 0.049), but not between 70-80 (HR 1.14 [0.96-1.35], p-value 0.13) nor > 80 (HR 0.91 [0.80-1.04], p-value 0.17).

Concerning the 90-day period, a minority of deaths occurred between 28 and 90 days : 16% in patients with diabetes and 14% in those without diabetes (p-value = 0.56). Analyzing the results with a restricted 28-day follow-up criterion did not modify our conclusions significantly.

Besides, although we agree that ethnic differences might influence analysis, such information was not available in our database.

Another possible explanation could arise from the difference in mortality rate between the two cohorts. In the Mexico cohort, death occurred in 47% (28,254/60,469) and 36% (43,613/120,875) of patients with or without diabetes respectively (3). In our cohort, these rates were 26% (637/2,549) and 22% (831/3,855) for patients with or without diabetes respectively. This difference in absolute mortality rate might influence the relative weight of diabetes, and could related to many factors: different indications for hospitalizations, diabetes with difference in duration, treatments, complications, glycated hemoglobin, etc.

To conclude, we agree that evidence tends to suggest that the risk of severe COVID-19 forms associated with diabetes decreases with age but also acknowledge that it is difficult to ascertain a precise age threshold.

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