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LETTER TO THE EDITOR

Coronary Calcium Score in COVID-19 Hospitalized Patients

We read with interest the article of Dillinger et al. (1). Although their rationale makes sense, several issues should be discussed.

The authors stated that coronary artery calcium (CAC) score assessed on low-dose computed tomography predicts the need for ventilation and death in a cohort of 209 hospitalized coronavirus disease-2019 (COVID-19) patients. We analyzed the same endpoint in a similar population of 280 patients with COVID-19. We excluded patients with previous history of cardiovascular disease.

Although CAC score indeed predicted the same combined endpoint, adjusting for age made its additional predictive value nonsignificant (**Figure 1**). Because the correlation between CAC and age is extremely strong, this is not astonishing. Additionally, during the peak of pandemic, access to intensive care unit (ICU) was limited for older patients because of the saturation of ICU beds. In our cohort, mortality was the main driver of events and was artificially higher in the older population (with higher CAC score) not having access to the ICU. Mortality was very low compared with previous series (2) and with our results (4.3% vs. 16.0%), although the authors reported only the mortality in the ICU. In our cohort, among the 72 patients who were transferred to the ICU, 19 (26.4%) patients died.

The proportion of an elevated CAC score in patients younger than 62 years of age was also surprisingly high compared with results from our cohort (32% vs. 6.2%) and with data reported by the MESA (Multi-Ethnic Study of Atherosclerosis) registry for the same age and ethnicity (3). This might be explained by the technical limitations of the method used for CAC score assessment: absence of triggering, lower temporal resolution, and a larger field of view, which alters the voxel size, leading to an overestimated CAC score (4).

The differences between various patient series suggest that the evidence linking cardiovascular disease with COVID-19 remains incomplete, and further research with more robust analyses are warranted.

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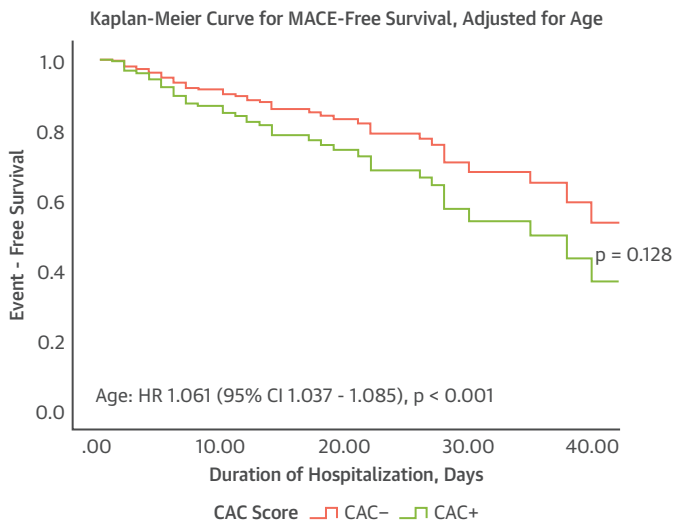
FIGURE 1 Kaplan-Meier Curve for the Combined Endpoint



Coronary artery calcium (CAC) score had a nonsignificant additional predictive value for the combined endpoint when adjusted for age. MACE = major adverse cardiac event (mechanical noninvasive/invasive ventilation, extracorporeal membrane oxygenation or death).

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REPLY TO LETTER:

We read with interest the letter from Dr. Cosyns and colleagues reporting that coronary artery calcium (CAC) was associated with the need for ventilation or