



## COVID-19: Precision Medicine and Vascular Endothelium

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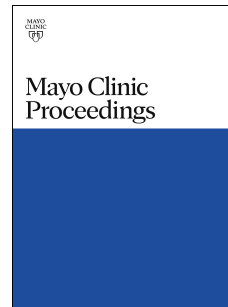
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**COVID-19: Precision Medicine and Vascular Endothelium**

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**COVID-19: Precision Medicine and Vascular Endothelium**

To the Editor: We read with care and interest the original article from Pereira et al. about the development of a precision medicine approach to the COVID-19 pandemic.<sup>1</sup>

We appreciate very much the specialist explanation about the demographic (such as age, race, ethnicity, sex) and biological variables (such as ACE2 expression, immune regulation, body mass index and genetics) that may characterize the high-risk patient and they can serve for optimizing hospitalization, vaccination and targeted drug therapy.

However, “predictive algorithms may help in individualizing targeted therapy including hospitalization and assist in the logistics of vaccine administration” only if all key factors are included. In our opinion, it is of paramount importance to introduce the vascular endothelium into the discussion.<sup>2</sup> In fact, endothelial damage to various organs were highlighted by autopsy outcomes<sup>3</sup> and severe SARS-CoV-2 infection could have a more complete and significant interpretation evaluating integrity of endothelial glycocalyx.<sup>4</sup>

In conclusion, the recognition of the whole COVID-19 host/genetic factors that contribute to COVID-19 susceptibility and subsequent pathogenesis advocates the use of precision medicine in better designing clinical trials and in treatment of the disease.<sup>5</sup>

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