Medical Xpress

Blood protein predicts poor COVID-19 outcomes

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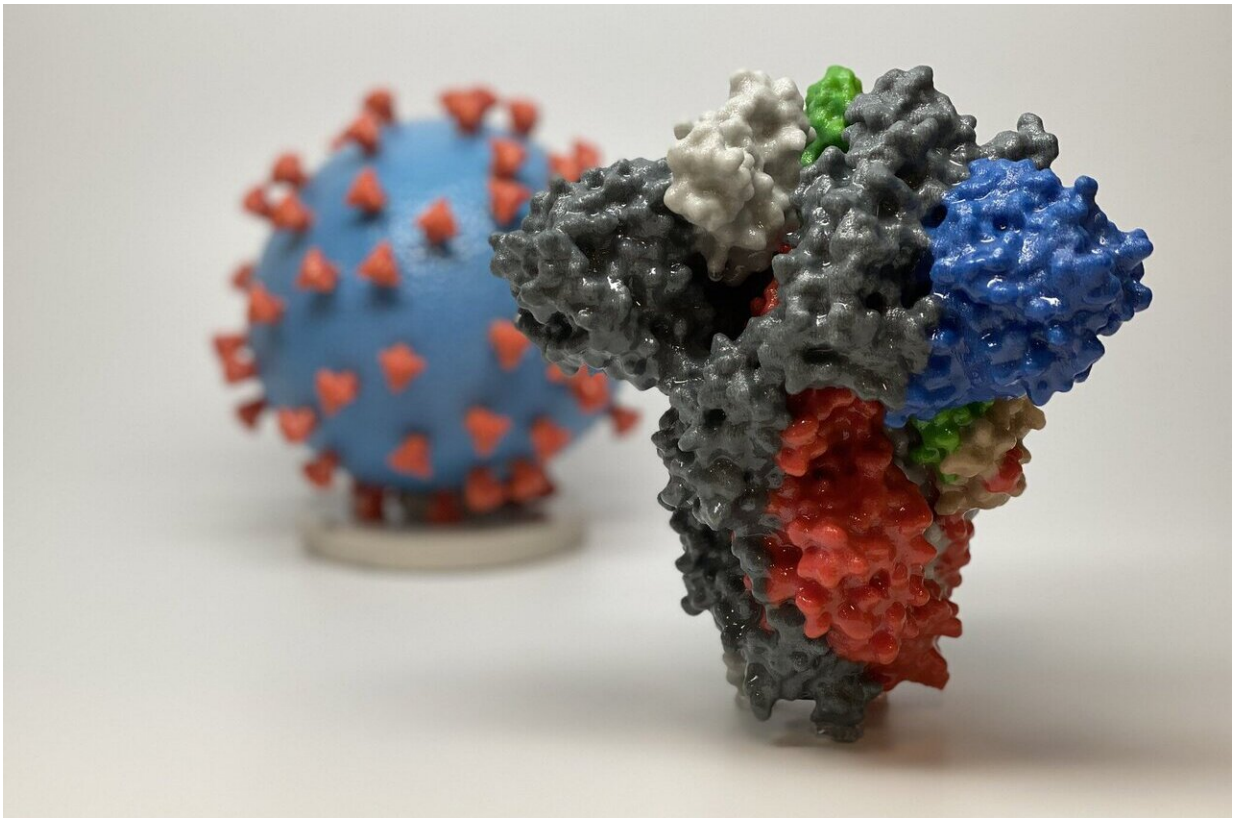

3D print of a spike protein of SARS-CoV-2, the virus that causes COVID-19—in front of a 3D print of a SARS-CoV-2 virus particle. The spike protein (foreground) enables the virus to enter and infect human cells. On the virus model, the virus surface (blue) is covered with spike proteins (red) that enable the virus to enter and infect human cells. Credit: NIH

Low levels of the blood protein renalase predict poor outcomes in patients with COVID-19, Yale researchers report. They are planning to ask for expedited approval from the U.S. Food and Drug Administration to investigate whether the protein, which fights inflammation, might improve outcomes of patients with severe cases of the disease.

"We want to investigate whether giving patients renalase protein agonists can improve outcomes," said senior author Gary Desir, the Paul B. Beeson Professor of Medicine, vice provost for faculty development and diversity, and chair of internal medicine at Yale School of Medicine.

Desir and colleagues measured levels of renalase in 51 COVID-19 patients at Yale New Haven Hospital and 15 uninfected subjects. They found that the 14 patients with the lowest levels of renalase experienced the most severe symptoms and were more likely to die than those with higher levels of the blood protein.

The study was posted on preprint server MedRxiv and has not been peer-reviewed.

Desir's lab had previously explored using the anti-inflammatory properties of renalase to treat acute kidney injury and acute pancreatitis. Desir theorized that renalase might help reduce the damaging immune system response associated with late-stage, severe COVID-19 cases.

More information: Melinda Wang et al. Decreased plasma levels of the survival factor renalase are associated with worse outcomes in COVID-19, (2020). DOI: 10.1101/2020.06.02.20120865

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