

Key biomarker for inflammation and COVID-19 risk

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Varying severity of COVID-19 symptoms in patients is reflected by levels of a chemical biomarker in their body which scientists say could be used to better manage treatments and other interventions, including

vaccinations.

In a new paper in *International Journal of Infectious Diseases*, [medical experts](#) in Italy and Australia examined levels of a chemical called serum amyloid A (SAA), a protein synthesized in the liver which can spike up to 1,000-fold within the first 24-48 hours of an infection.

In turn, an increase in SAA can further perpetuate [inflammation](#) and cause clot abnormalities and organ damage, researchers say, concluding SAA levels are associated with higher COVID-19 severity and mortality.

The University of Sassari and Flinders University researchers focused on the latest research including 19 studies of more than 5,600 COVID-19 patients for specific markers to predict [disease](#) severity and progression.

"Our analyses showed that COVID-19 patients with [severe](#) disease or who eventually died had significantly higher levels of SAA when compared to patients with mild COVID-19," says senior corresponding author Professor of Clinical Pharmacology Arduino Mangoni, from Flinders University in South Australia.

"Patients with severe forms of [coronavirus](#) disease 2019 have excessive inflammation, alterations in clot formation, and significant damage in several organs, particularly the lung, the kidney, the heart, and the liver,"

Given the key role of inflammation in COVID-19, markers that reflect a state of excessive inflammation might be particularly useful for risk stratification and effective management.

"This chemical may help, together with other patient characteristics, in predicting which COVID-19 patients are likely to deteriorate and require aggressive management," the researchers say.

While safe and effective vaccines are being rolled out worldwide there are currently few effective therapies to treat COVID-19 in the community and in hospital.

In this context, the use of specific markers to predict disease severity and would facilitate the early identification of patients requiring aggressive management and monitoring and assist with the judicious use of health care resources.

The link between SAA and COVID-19 severity and mortality focused on data collected from 5,617 [patients](#) hospitalized with COVID-10 with different degrees of severity and survival status, along with current literature.

More information: Angelo Zinellu et al. Serum amyloid A concentrations, COVID-19 severity and mortality: An updated systematic review and meta-analysis, *International Journal of Infectious Diseases* (2021). [DOI: 10.1016/j.ijid.2021.03.025](https://doi.org/10.1016/j.ijid.2021.03.025)

Provided by Flinders University

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