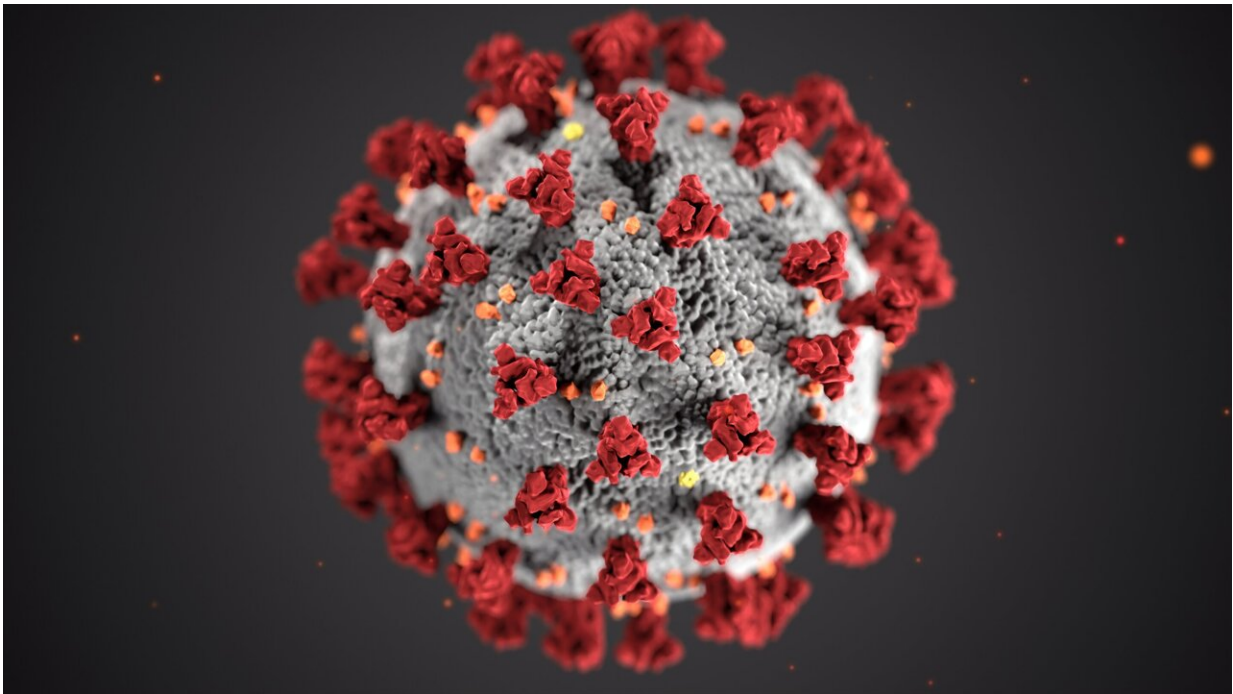


New thesis on severe COVID-19 and routine biomarker patterns

November 20 2023



Credit: Unsplash/CC0 Public Domain

Anna Sjöström at the research group Experimental and Clinical Neuroendocrinology, the Department of Molecular Medicine and Surgery, will defend her thesis "[Severe COVID-19 and routine biomarker patterns](#)" on November 24, 2023. Her main supervisor is Charlotte Höybye.

What's the main focus of your thesis?

Sjöström: My thesis is focused on how levels of some of our routine [blood](#) tests are affected by severe COVID-19. The focus is on patterns, dynamics and trends of routine blood tests. The three areas explored are coagulation, fluid balance and kidney function.

Which are the most important results?

Sjöström: The first study shows that D-dimer levels and [platelet counts](#) are key markers of severity in COVID-19. As daily mean platelet counts increased and D-dimer levels decreased over the study period, the thrombosis burden and deaths decreased. This coincided with the introduction of a higher dose of anticoagulation for patients with severe COVID-19.

In studies II and III, hyponatremia was shown to be common at hospital admission for patients with severe COVID-19. However, it was also common to, over time, develop hypernatremia. Hypernatremia was more frequent in [severe disease](#) and was associated with higher odds of death.

Patients had different patterns and dynamics of other electrolytes and acid-base markers when divided into groups based on the degree of hypernatremia. Moderate/severe COVID-19 was associated with MR findings suggestive of a state of vasopressin depletion, consistent with the development of hypernatremia caused by central diabetes insipidus.

The last sub-study showed that it was common with differences between eGFR calculated with creatinine and Cystatin C in severe COVID-19. The discrepancy was aggravated over the course of the disease, and a pronounced difference was associated with severe disease and death.

How can this new knowledge contribute to the improvement of people's health?

Sjöström: The direct benefit is understanding how levels and trends of some of our most common blood tests can be used to assess prognosis in patients with severe COVID-19. The benefit of following trends and dynamics, even within reference intervals, is a very valuable finding and prognostically useful. This can be applied to other data materials, which is interesting for further research.

What are your future ambitions?

Sjöström: I will continue to combine my work as a specialist doctor at the Karolinska University Laboratory with biomarker research where routine blood tests have a central role. The dream is to be able to use our enormous amount of data, generated from routine blood samples, in an efficient way for prognosis, [risk assessment](#) and diagnosis in several large patient groups.

More information: Severe COVID-19 and routine biomarker patterns. openarchive.ki.se/xmlui/handle/10616/48787

Provided by Karolinska Institutet

Citation: New thesis on severe COVID-19 and routine biomarker patterns (2023, November 20) retrieved 28 April 2024 from

<https://medicalxpress.com/news/2023-11-thesis-severe-covid-routine-biomarker.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.