

Benefits of high-dose blood thinners in COVID-19 patients remain unclear

13 November 2020



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While COVID-19 infected patients should be treated with standard anticoagulation therapies, such as blood thinning medication, a new study by researchers at the George Washington University (GW) shows that anticoagulating patients at higher doses, without traditional medical indications to do so, may be ineffective and even harmful. The study was published in the journal *Thrombosis Research*.

"COVID-19 [patients](#) appear to have an increased incidence of blood clots. Many hospitals and [health care providers](#) began to use high doses of blood thinners to prevent these clots or treat them preemptively," said Juan Reyes, MD, MPH, co-author of the study and director of hospital medicine at the GW School of Medicine and Health Sciences (SMHS). "We wanted to review the data of our subset of COVID-19 patients treated with blood thinners to determine if the higher-dose medication was helpful."

The research team evaluated 402 patients diagnosed with COVID-19 admitted to GW Hospital between March 15 and May 31, 2020. Clinical outcomes were compared between 152 patients

treated with high-dose blood thinners, and 250 patients treated with the standard low-dose blood thinners, typically prescribed to hospitalized medical patients. "Our findings did not demonstrate any additional benefit for those treated with [higher doses](#) of blood thinners above and beyond the standard of care," said Shant Ayanian, MD, MS, co-author and assistant professor of medicine at GW SMHS.

"While it's true that COVID-19 patients could be dying of blood clots, the data we've evaluated does not support giving every patient a high dose of blood thinners. That's a challenge, as the benefits still remain unclear," said Lei Lynn, MD, first author of the study and assistant professor of medicine at GW SMHS. "We caution against an aggressive blood thinner regimen for everyone, unless there is clear evidence to do so."

At the beginning of the pandemic, all patients admitted with COVID-19 to the GW Hospital were treated with standard dose anticoagulation, unless contraindicated. As awareness of the elevated risk of blood clots developed, many providers began treating patients with high-dose blood thinners. At GW Hospital, for non-critically ill patients, medical teams were advised to especially consider initiating a high dose of anticoagulation if a patient's D-dimer level exceeded 3 micrograms per milliliter. The research team previously published a study finding higher levels of the biomarker D-dimer, a medical indicator found in the [blood](#), is associated with higher odds of clinical deterioration and death from COVID-19. This study is the first of its kind to utilize D-dimer levels to analyze clinical outcomes of anticoagulation in patients who are not critically ill.

"Though we would have loved to have seen a clinical benefit to our patients from anticoagulation, our research found that higher doses of [blood thinners](#) were potentially harmful, with no clear benefits," said Karolyn Teufel, MD, co-author of the study and assistant professor of medicine at GW

SMHS. "Our research highlights the challenges with treating COVID-19. So much remains unknown."

"The effect of anticoagulation on [clinical outcomes](#) in novel Coronavirus (COVID-19) pneumonia in a U.S. cohort" was published in *Thrombosis Research*.

More information: Lei Lynn et al, The effect of anticoagulation on clinical outcomes in novel Coronavirus (COVID-19) pneumonia in a U.S. cohort, *Thrombosis Research* (2020). [DOI: 10.1016/j.thromres.2020.10.031](#)

Provided by George Washington University

APA citation: Benefits of high-dose blood thinners in COVID-19 patients remain unclear (2020, November 13) retrieved 1 September 2022 from <https://medicalxpress.com/news/2020-11-benefits-high-dose-blood-thinners-covid-.html>

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