

2020

Increased prevalence of VTE reported by Klok and colleagues, the numbers don't add up

Y. Y. Greenstein

Zucker School of Medicine at Hofstra/Northwell

Follow this and additional works at: <https://academicworks.medicine.hofstra.edu/publications>



Part of the [Critical Care Commons](#)

Recommended Citation

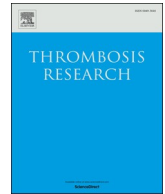
Greenstein YY. Increased prevalence of VTE reported by Klok and colleagues, the numbers don't add up. . 2020 Jan 01; 191():Article 6326 [p.]. Available from: <https://academicworks.medicine.hofstra.edu/publications/6326>. Free full text article.

This Article is brought to you for free and open access by Donald and Barbara Zucker School of Medicine Academic Works. It has been accepted for inclusion in Journal Articles by an authorized administrator of Donald and Barbara Zucker School of Medicine Academic Works. For more information, please contact academicworks@hofstra.edu.



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Letter to the Editors-in-Chief

Increased prevalence of VTE reported by Klok and colleagues, the numbers don't add up



Dear Editor,

I read with interest the study by Klok and colleagues, published April 5, 2020, entitled “Incidence of thrombotic complications in critically ill ICU patients with COVID-19.” In this study the authors report that 31% of patients met the composite outcome of having a thrombotic complication which they define as having a pulmonary embolism, deep vein thrombosis, or an ischemic stroke. The study included 184 patients with 31 patients having a thrombotic complication. This adds up to an incidence of 16.8%, not 31%. Additionally, the authors report that 9.2% of the patients were on therapeutic anticoagulation upon admission. They do not report what percentage of those that made up the composite outcome were already on therapeutic anticoagulation upon enrollment in the study. This makes it plausible that the incidence of a true new thrombotic event was even lower than 16.8%. Finally, it is not clear if this study was prospective or retrospective, information that will help clinicians to weigh the validity of the results.

All hospitalized COVID-19 patients should receive chemical thromboprophylaxis as prior research suggests that 11% of these patients would develop venous thromboembolisms (VTE) if no prophylactic anticoagulation was given [1]. This has been reaffirmed by The International Society of Thrombosis and Haemostasis in their March 25, 2020 guidelines [2].

There is concern that patients with COVID-19 are at higher risk of developing venous thromboembolism. A recently published study claimed that anticoagulant therapy for COVID-19 patients was associated with decreased mortality [3]. Careful review of this study elucidated that the patients received prophylactic, not therapeutic doses of anticoagulation and thus the conclusions drawn by the authors are inaccurate. Another study attempted to elucidate the prevalence of VTE and reported that 25% of 81 patients with COVID-19 had a DVT. Unfortunately, this study is not representative as none of the 81 patients received VTE chemical prophylaxis, making the true prevalence of VTE in these patients unclear [4].

The American Society of Hematology recommends against empiric therapeutic anticoagulation for COVID-19 patients given lack of evidence of benefit and potential harm [5]. High quality prospective studies are required to further elucidate the best way to manage the coagulopathy that we are seeing in patients critically ill with COVID-19.

Clinicians must carefully review all published work for validity before changing practice or guidelines. Hospitals must establish safe ways to aggressively test for the presence of VTE in these patients to inform therapeutic anticoagulation, focusing on minimizing exposure of healthcare workers to the virus. Dedicated imaging machines located close to patients with COVID-19 can help improve the ability to rapidly diagnose and treat VTE in patients with COVID-19.

Funding information

None.

Declaration of competing interest

Author YYG has no conflicts of interest pertaining to this manuscript.

References

- [1] S. Barbar, F. Noventa, V. Rossetto, et al., A risk assessment model for the identification of hospitalized medical patients at risk for venous thromboembolism: the Padua Prediction Score, *J Thromb Haemost* 8 (2010) 2450–2457.
- [2] J. Thachil, N. Tang, S. Gando, et al., ISTH interim guidance on recognition and management of coagulopathy in COVID-19, *J Thromb Haemost* (2020), <https://doi.org/10.1111/jth.14810> [Epub ahead of print].
- [3] N. Tang, H. Bai, X. Chen, et al., Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy, *J Thromb Haemost* (2020), <https://doi.org/10.1111/jth.14817> [Epub ahead of print].
- [4] S. Cui, S. Chen, X. Li, et al., Prevalence of venous thromboembolism in patients with severe novel coronavirus pneumonia, *J Thromb Haemost* (2020), <https://doi.org/10.1111/JTH.14830> [Epub ahead of print].
- [5] American Society of Hematology online publication March 27, <https://www.hematology.org/covid-19/covid-19-and-vte-anticoagulation>, (2020).

Yonatan Y. Greenstein

Department of Medicine, Division of Pulmonary and Critical Care Medicine and Allergy and Rheumatology, Rutgers – New Jersey Medical School, University Hospital Building, Room I-354B, 150 Bergen Street, Newark, NJ 07103, United States of America

E-mail address: yonatan@njms.rutgers.edu.