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.

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Clinical implication of pulmonary artery thrombi in COVID-19

We would like to thank Amit Mandal and co-authors for reporting their data on pulmonary embolism, respectively pulmonary artery thrombi (PAT), in the novel coronavirus disease (COVID-19) [1] which contributes to the understanding of the novel SARS-CoV2 disease. Combining this information to larger studies available, pulmonary artery thrombi might be a complication in at least one out of six patients with COVID-19 hospitalized on an intensive care unit [2]. With more than 40,000,000 infections worldwide, as reported at the end of October, thrombosis in COVID-19 is a major heath issue.

Guidelines on antithrombotic therapy in COVID-19 advocate a prophylactic anticoagulation [3]. In case of proven thrombus, anticoagulation is the primary therapeutic intervention as in all thrombotic diseases. However, working in the field of intensive care medicine we know that bleeding complications are the dark side of anticoagulative therapy [4]. Thus, several pressing questions have to be investigated in order to guide anticoagulation in COVID-19.

First, it is unclear if subsegmental pulmonary artery thrombi are a modifiable complication of COVID-19 or merely a surrogate for disease severity. Second, since there is data suggesting that PAT can form even in patients receiving anticoagulative therapy it is unclear if anticoagulation can prevent PE in COVID-19 patients [2]. Third, the question remains unanswered if anticoagulation can improve outcome since retrospective data on anticoagulation is very prone to a selection bias. Forth, it remains to be determined which anticoagulant (low molecular weight heparin, unfractionated heparin, or even direct oral anticoagulants) is most advantageous for thrombotic complications in COVID-19 and if different stages of the disease necessitate different drug choices. Fifth, duration of anticoagulation is unanswered.

These questions are pressing, since patients with COVID-19 are at risk of bleeding. Retrospective data analysis suggests that bleeding occurs significantly more frequent in patients with COVID-19 on anticoagulation compared to those without [5] and low platelet count is common in COVID-19. We therefore warrant caution when advocating an aggressive anticoagulation regiment in COVID-19 at the present state of knowledge.

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