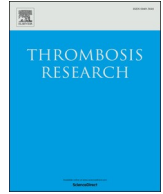




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Letter to the Editors-in-Chief

Pulmonary embolism in coronavirus disease-19 (COVID-19) and use of compression ultrasonography in its optimal management



We read with enormous interest the recent article by D.C. Rotzinger et al. entitled “Pulmonary embolism in patients with COVID-19: Time to change the paradigm of computed tomography” wherein they discussed and advocated the use of computed tomographic angiography (CTA) in patients of severe COVID-19 with clinical suspicion of pulmonary embolism (PE) [1]. However, the idea of liberal use of CTA in every severe COVID-19 pneumonia with suspected PE may not be feasible in many situations in the current pandemic context and thus we must look for easy alternatives which can reliably aid in the diagnosis and management of PE. The incidence of pulmonary embolism (PE) in severe COVID-19 pneumonia has been reported in the range of 23–30% [2,3]. These preliminary results point to an underlying coagulation disorder in COVID 19 pneumonia [3][5]. The exact rate of occurrence of a concomitant lower extremity deep venous thrombosis (DVT) in documented cases of PE in severe COVID-19 is not known at present. This seemingly unimportant piece of information can have a huge bearing on the optimal management of suspected PE patients in many parts of the world in this pandemic setting. According to Prospective Investigation of Pulmonary Embolism Diagnosis (PIOPED) II the majority (90%) of PE originate in the deep venous system of lower limbs, reinforcing the notion that PE and DVT are the manifestations of a single disorder [[4]]. Conversely, up to 50–70% patients of proven PE show evidence of underlying DVT. Furthering the projections of PIOPED II, it is expected that a significant proportion of COVID-19 cases with PE would have an underlying DVT. We contend that CTA should be pre-faced with the use of compression ultrasound of lower limbs. A diagnosis of DVT in a clinically suspected patient of PE may obviate the need for CTA. Use of CTA for diagnosis of PE may not be logistically feasible in every centre in the current pandemic where the available healthcare resources are overstretched. CTA entails transfer of patient to CT suite, chances of disease transmission to other subjects and need for disinfection of CT suite. Additionally, it also involves use of contrast media which might be contraindicated in patients with severe COVID-19 with associated deranged renal function or patients with contrast

allergy.

On the other hand compression ultrasound is a bedside modality with advantages of wide availability, rapidity and safety (no need of contrast media and lack of radiation exposure). Patients with positive compression ultrasound can be started on anticoagulants without further need of CTA. According to the PIOPED II this group of PE patients may be as high as 50–70% [[4]]. However, patients with a negative compression ultrasound with suspicion of PE should be subjected to further testing in the form of CTA. This approach is logistically easy, rapid, widely available, inexpensive and safe.

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