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.

INVITED COMMENTARY

The New Virus Tells the Old Story

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Vision is a dominant sense in the majority of humans. This fact explains our bias as physicians towards ordering imaging tests. Despite a common understanding that imaging is never 100% accurate, the reliance on these tests as the first diagnostic step is hard to overcome. Duplex ultrasound (DUS) to diagnose acute deep vein thrombosis (DVT) provides a good example. With false positive and negative rates approaching 6% and exceeding 10%, respectively,[1] evidence based guidelines strongly recommend against DUS as a first line diagnostic test. Nevertheless, the widespread practice of relying on DUS remains unchanged.

The COVID-19 pandemic has introduced a new challenge to such practice. Thrombo-inflammation, one of the main pathophysiological features of this new disease contributes to the high incidence of venous thrombo-embolism (VTE) in infected individuals, and the role of traditional risk factors for thrombo-embolism has become less clear.

The present study by Bellmunt and colleagues[2] set out to investigate VTE incidence in a cohort of 230 critically ill ICU patients with confirmed COVID-19, as well as to determine whether a single DUS can detect the presence of DVT before the development of pulmonary embolism (PE). Although the authors confirmed a high incidence of VTE (approximately 25%, findings similar to the 30% pooled rate of VTE in a recent meta-analysis[3]), the lack of a comparison group means that the true increase can only be inferred; historical rates of VTE in ICU patients with non-COVID viral pneumonias are lower than 2%.[4]

More importantly, screening DUS did not improve outcomes. Six patients with negative scans developed symptomatic VTE within seven days after scan. The reason early detection failed to prevent future VTE events is difficult to determine but can be partially explained by another significant finding of this study: the similar rates of VTE in patients regardless of anticoagulation dosing. A longer follow up, therefore, may reveal even more new VTE events. In contrast, D dimer levels were predictive of future VTE events. A cut off value of 1 500 ng/mL had 86% negative predictive value and using a higher cut off value was reported to be an even better predictor.

As is common to all studies, more questions are raised than answered. The study showed that decisions based on clinical manifestations and D dimer levels outperform a single screening DUS in critically ill patients with COVID-19; however, how best to risk stratify patients and implement the appropriate treatment remains unclear.

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