To the Editor:

It was interesting to read through the article by Trigonis et al (1), recently published in *Critical Care Medicine*. They included 45 ICU patients who underwent lower limbs ultrasound (LLUS) examination and concluded venous thromboembolism (VTE) prevalence of 42.2%. This prevalence keeps with the high prevalence of VTE detected by systematic screening of all ICU patients, reported by similar studies (2). This letter aims to highlight the factors leading, in

Caution Is Needed When Reporting or Pooling the Prevalence of Venous Thromboembolism in Critically Ill Coronavirus Disease 2019 Patients

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general, to inaccurate reporting of VTE prevalence in individual studies and pooling in meta-analyses.

Trigonis et al (1) included patients who underwent LLUS. Patients in ICU undergo LLUS generally when deep venous thrombosis (DVT) is suspected (except when systematic screening is part of a study protocol) (2). This indicates that the prevalence provided by studies looking at a group of patients who underwent diagnostic imaging may not represent the prevalence of the whole ICU cohort, instead a selected high-risk group. This prevalence helps the clinician understand the proportion of positive LLUS once DVT is suspected, and a test is requested. Similarly, studies exploring pulmonary embolism (PE) prevalence by examining CT pulmonary angiography (CTPA) scans report PE in a selected group of patients who had PE suspicion and underwent imaging (3). This helps both the physician ordering the CTPA and the radiologist who interprets CTPA understanding the proportion of positive CT scans once a CTPA is ordered. Nonetheless, it does not represent PE prevalence in the whole ICU cohort. Misinterpreting this has led to an inflation of the prevalence of PE events in the general coronavirus disease 2019 (COVID-19) population in the initial phase of the COVID-19 pandemic and the notion that PE prevalence is higher than DVT in critically ill COVID-19 patients (4). Additionally, it led to perhaps inaccuracies in the pooled incidence of VTE reported by several meta-analyses (5).

When systematic screening is adopted to screen for VTE in all ICU cohorts, the prevalence of DVT was as high as 85% (2). This may explain the VTE prevalence discrepancy between the studies that do not adopt systematic screening and studies that adopt it. It also shows that our clinical ability to predict and diagnose VTE is far from optimal. Wichmann et al (6) reported 58% undiagnosed VTE prevalence in 12 COVID-19 patient’s autopsies. This suggests that studies with high mortality could report a spuriously low VTE prevalence when systematic screening or autopsies are not attempted. Furthermore, as inferred from the study by Wichmann et al (6), VTE events may have been an overlooked cause of mortality in this cohort.

Statistically, the exact VTE incidence, incidence rate, or prevalence is generally difficult to ascertain in ICU settings. This is due to various reasons, including the absence of uniform screening at ICU admission to exclude patients with prior VTE, absence of systematic assessment with varying screening guided by clinicians’ suspicion, and varying follow-up time. Finally, this letter aimed to improve the understanding of the VTE burden in critically ill patients. Notwithstanding this, the burden is high. Efforts are needed to improve the prevention, screening, and diagnosis of VTE in this patient cohort.

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Dr. Mohamed conceived the idea of this letter, wrote the manuscript, and submitted it for publication.

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