

LETTER

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Use of the lung ultrasound score in monitoring COVID-19 patients: it's time for a reappraisal

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To the Editor,

The lung ultrasound score (LUS)—as far as the literature reports—provides an overall rating of pulmonary aeration loss through the examination of 12 specified thoracic regions [1]. The level of aeration loss of each examined region is rated from 0 (absence of B lines) to 3 (lung consolidation), and the sum of these ratings constitutes the overall LUS, which can thus range from a minimum of zero to a maximum of 36 [1]. In non-COVID-19 patients with acute respiratory distress syndrome (ARDS), the LUS correlates with disease severity and mortality [1]. In COVID-19-related ARDS, a number of studies have assessed the role of the LUS in severity prediction and monitoring the response to treatment. Lung ultrasound is a quick- and easy-to-learn medical technique, rendering the LUS an easily accessible tool. The median time required for an expert operator to obtain a LUS is just 5 min. Ji and collaborators investigated the validity of using the LUS as a tool for monitoring the clinical progress of 280 COVID-19 patients [2]. The study confirmed their modified LUS (which generated an overall LUS scale of 0–60 by incorporating a score for pleural abnormalities [scale 0–2] for each of the 12 regions) to offer high prognostic accuracy (sensitivity and specificity both > 90%). Here, the authors proposed a cutoff value > 12 to predict an adverse outcome. Lichter et al., on the other hand, in their study of critically ill COVID-19 patients report an

optimal cutoff value of 18 on the 0–36 scale for predicting adverse outcome, with a reported sensitivity of 62% and a specificity of 75% [3], whereas Zhu et al. report a sensitivity of 81% and a specificity of 96% with a cutoff value of 7 [4]. However, the study by Ji et al. [2] is difficult to compare with other studies in the literature for the following two reasons: first, they used a modified LUS scale (note a recent international expert consensus on the use of multi-organ point-of-care LU in COVID-19 adopts the scale range of 0–36 [5] and does not consider the pleural line artifact); second, the patients in the study by Ji et al. appear less critically ill than those in other studies, as evidenced by the fact that 88% of patients had an average value of PaO₂/FiO₂ greater than 300 mmHg.

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