LETTER TO THE EDITOR

Parasternal Intercostal Muscle Thickness Fraction (PICTF%): Ultrasound a New Tool for Weaning Prediction?

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Dear Editor,

We have read the article of Ramaswamy et al.[1] with great interest. The authors observed that assessing the thickness fraction of parasternal intercostal muscle (PICTF%) can predict adequately weaning failure. However, we raise certain points for further clarification of their reported observation.

First, it is not clear whether they have included coronavirus disease-19 (COVID-19) patients who often require mechanical ventilation. Parasternal intercostal muscle thickness fraction evaluated within 12 hours of admission in patients with severe COVID-19 can accurately predict not only the need for ventilator support but also the outcome and 30-day mortality.[2]

Second, the PICTF% shows increased activity as a compensatory mechanism for reduced activity of the diaphragm. The PICTF% can independently predict failure of the weaning trial, especially in patients with normal thickness of the diaphragm.[3] It would have been great if the authors could have measured the excursion of the diaphragm to evaluate its dysfunction. Moreover, combined use of PICTF% and airway occlusion pressure measured at 100 milliseconds can predict weaning failure.[4] Composite indicators such as the CROP index and rapid shallow breathing index (RSBI) are also useful predictors of weaning.[3]

Third, it is not evident how much inspiratory support the patients were receiving during ventilation. Excessive inspiratory support can lead to disuse atrophy of the diaphragm and intercostal muscles. Moreover, the deleterious effect of over-recruitment adds to the insult.[5]

We appreciate the authors' work on the cut-off value of PICTF% to suggest its discriminating power and sensitivity in predicting extubation failure. This observation will throw light on the success of extubation after spontaneous breathing trials in critically ill patients.

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