

Is the mNutric Score, the Only Independent Risk Factor for Abdominal Muscle Thickness Influencing Weaning?

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Dear Editor,

After reading with great interest the study published by Vishwas et al.¹ who found that the modified nutritional risk in critically ill (mNutric) score, correlates to thinner expiratory muscles in the abdomen and is an independent predictor of weaning in critically ill patients on mechanical ventilation. While complimenting the authors for their commendable work, we offer to raise certain points for clarification and better understanding of their observations.

First, it is not clear whether they had included critically ill surgical patients or not. Abdominal surgery especially in the upper abdomen is associated with postoperative respiratory complications owing to dysfunction of the diaphragm and abdominal muscles leading to delayed weaning.² Ultrasound not only helps to detect abdominal muscle thickness, but it also helps in detecting diaphragm thickening fraction (DTF) during inspiration. Diaphragmatic excursion (DE) and the speed with which the diaphragm contracts appear to be the foremost parameters that can be used for weaning.³ During tidal breathing, DE <1.1 cm indicates diaphragm weakness. A positive correlation exists between the thickness of the diaphragm and its strength. The concurrence of the thickness of the external oblique to the peak expiratory flow rate has already been established, and DE >1.79 cm has been found to predict weaning.⁴

Second, it would be interesting to know what drugs the study patients were taking. Sedatives, corticosteroids, and neuromuscular blockers might adversely affect diaphragm function and abdominal expiratory muscle's function.⁵

Third, lung ultrasound score (LUS) is an important predictor of weaning. Diaphragm thickening fraction of $\geq 30\%$ along with a LUS of ≤ 12 have been observed to successfully predict weaning.⁶ It would be further interesting whether any correlation was observed between lung ultrasound score and the thickness of abdominal expiratory muscles.⁴

Fourth, the NUTRIC score is only applicable for macronutrients, protein, and energy. Critically ill patients also may benefit from pharmaconutrient therapy like arginine, glutamine, and antioxidants which also might influence the thickness of abdominal expiratory muscles.⁷ In the present study, the authors have used the cut-off value of score 4. Some studies have used the score 5 as a cut-off value.^{8,9} Setting the cut-off value with a different score would change the sensitivity and specificity of risk determination. Hence, it would be further interesting if the authors would highlight this. Further study is warranted in this aspect.

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