

■ Letter to the Editor

Risk factors for invasive mechanical ventilation after thoracentesis*Torasentez sonrası invaziv mekanik ventilasyon için risk faktörleri* Korhan Kollu*

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I read with interest the article by Dogancı et al. [1]. The article titled "Assessment of risk factors for the need of invasive mechanical ventilation in patients undergoing thoracentesis in tertiary care intensive care units" was published in the 2/2024 issue of the Turkish Journal of Clinics and Laboratory. Congratulations to the authors for this article.

Pleural effusions are common in intensive care units, with reported rates reaching 50–60% in various studies. Pleural fluid accumulation has been described as a "hidden" morbidity factor that can hinder weaning from mechanical ventilation [2]. A large database analysis found that pleural effusion in ICU patients is associated with increased mortality and prolonged ICU stay, independent of disease severity. The same study also reported a significantly higher need for mechanical ventilation in patients with pleural effusion (e.g., 63.1% vs. 55.7%) [3]. Therefore, predicting which patients will require invasive mechanical ventilation (IMV) despite thoracentesis is clinically crucial.

Doğancı et al. identified several factors associated with an increased need for IMV in these patients. In multivariate logistic regression, the use of vasopressor medication and prolonged ICU duration emerged as independent predictors of IMV requirement [1]. Patients requiring vasopressors or extended ICU care were

more prone to deterioration, possibly due to hemodynamic shifts or re-expansion pulmonary edema after drainage. This aligns with findings that ICU patients with pleural effusions requiring vasopressors have worse outcomes, including higher mortality [4, 5]. Reducing ICU length of stay may mitigate IMV risk by preventing hospital-acquired infections. These insights highlight the need for close monitoring and early intervention after thoracentesis, particularly in hemodynamically unstable or long-term ICU patients.

The authors' study found that while the overall prevalence of comorbidities was similar between patients requiring and not requiring IMV. However, the frequencies of specific comorbid conditions varied. Interestingly, certain comorbid conditions (like pulmonary thromboembolism and hypertension) were more common in patients who did not require IMV. These confounding factors could impact potential or independent risk factors for IMV requirement. Incorporating a standardized comorbidity assessment such as the Charlson Comorbidity Index (CCI) could enhance understanding of the patients' chronic health burdens and their impact on IMV risk. It has proven utility in critical care settings – for example, higher Charlson comorbidity scores have been shown to predict

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worse outcomes (including hospital mortality) in critically ill and mechanically ventilated patient populations [6].

In conclusion, a more detailed understanding of the risk profile in ICU patients undergoing thoracentesis will support clinicians in optimizing patient management. The observed increase in IMV and mortality risk in patients with pleural fluid drainage may stem from more severe underlying disease. Therefore, comprehensive risk assessment strategies incorporating comorbidities and overall disease severity are necessary for more accurate risk evaluation.

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