

中文題目：共病症數量會增加非嚴重急性呼吸窘迫症候群患者之死亡率

英文題目：The number of comorbidities is associated with increased mortality in patients with non-severe acute respiratory distress syndrome (ARDS)

作者：歐偉凡<sup>1</sup> 游於藝<sup>2</sup> 吳珈潤<sup>1</sup> 楊惠喬<sup>2</sup> 楊宗穎<sup>1</sup> 吳杰亮<sup>1,3</sup> 詹明澄<sup>1,2</sup>

<sup>1</sup> 台中榮民總醫院內科部胸腔科, <sup>2</sup> 台中榮民總醫院內科部呼吸治療科, <sup>3</sup> 台中榮總重症醫學部

**Background:** Critically ill patients with initial non-severe acute respiratory distress syndrome (ARDS) are often unrecognized and under-treated.<sup>1</sup> Their mortality rate remains high. We thus investigate the risk factors of mortality in patients needing mechanical ventilation in the intensive care units (ICUs) with non-severe ARDS.<sup>2</sup>

**Method:** This study is a retrospectively analysis of prospective acquired data which was collected in a tertiary referral hospital in central Taiwan. These data are collected from clinical audit program for quality improvement of critical care. Patients with acute respiratory failure needing invasive mechanical ventilation were screened from July 2018 to December 2019. Those who met the criteria of ARDS by Berlin Definition were included for analysis.

**Result:** Totally, 2207 patients needing mechanical ventilation admitted to ICUs were screened. Of these, 458 patients met the criteria of ARDS and were eligible for analysis. The incidence of ARDS was 20.8% (30.3%, 50.2%, and 19.4% for patients with mild, moderate, and severe ARDS, respectively) (Figure 1). The overall mortality rate was 41% (33.1%, 42.2%, and 50.6% for patients with mild, moderate, and severe ARDS, respectively,  $P = 0.029$ ). The mean driving pressure (DP) was 12.5 cm H<sub>2</sub>O (12 and 13.5 cm H<sub>2</sub>O for survivors and non-survivors, respectively,  $P = 0.002$ ) (Table 1). Patients with higher mortality rate were observed only in those with severe ARDS and higher DP (11.3 and 14.4 cm H<sub>2</sub>O for survivors and non-survivors, respectively,  $P = 0.002$ ), but not mild (11.9 and 13.3 cm H<sub>2</sub>O for survivors and non-survivors, respectively,  $P = 0.134$ ) and moderate (12.3 and 13 for survivors and non-survivors, respectively,  $P = 0.234$ ) ARDS (Table 2). In patients with non-severe ARDS (including patients with mild or moderate ARDS), hepatic disease, diabetes mellitus, malignancy, immunosuppression, SOFA score, APACHE II score, and plateau pressure ( $P_{plat}$ ) were associated with higher mortality rate (Table 3). After multivariable analysis, immunosuppression (OR: 2.233 (1.098-4.539),  $P = 0.027$ ), malignancy (OR: 1.842 (1.079-3.144),  $P = 0.025$ ), and SOFA score (OR: 1.154 (1.064-1.252),  $P < 0.001$ ) were associated with higher mortality rate independently (Table 4). After stratification of patients according to the number of comorbidities 0, 1-2,  $\geq 3$ , the mortality rate was 75%, 63.5%, and 51%, respectively ( $P = 0.02$ ) (Figure 2).

**Conclusion:** Among critically ill patients needing mechanical ventilation in the ICU, the number of comorbidities is associated with increased risk of mortality in patients with non-severe ARDS.

### Reference:

1. Bellani G, Laffey JG, Pham T, et al. Epidemiology, Patterns of Care, and Mortality for Patients

With Acute Respiratory Distress Syndrome in Intensive Care Units in 50 Countries. *Jama* 2016;315:788-800.

2. Pham T, Serpa Neto A, Pelosi P, et al. Outcomes of Patients Presenting with Mild Acute Respiratory Distress Syndrome: Insights from the LUNG SAFE Study. *Anesthesiology* 2019;130:263-83.