Results Fourteen patients were enrolled in the study. In six of these patients, the EVLWi and PVPI were measured simultaneously. At baseline, the elastase level and the PVPI showed a strong and significant correlation (R² = 1.000, n = 6, P ≤ 0.05). All of the plot data of the six patients showed strong correlations of the elastase level with the EVLWi (R² = 0.750, n = 25, P < 0.01) and the PVPI (R² = 0.881, n = 25, P < 0.01).

Conclusions The plasma neutrophil elastase level and the PVPI measured by PICCO were strongly correlated in patients with pneumonia. This suggests that a rise in the blood level of elastase may elevate the PVPI, resulting in an increased EVLWi. (UMIN Clinical Trials Registry: ID UMIN000002803.)
were analyzed using uniform outcome definitions. We tested prespecified effect modifiers using multivariable hierarchical regression, adjusting for important prognostic factors and clustering effects.

**Results** Overall, there were 374 hospital deaths (52.9%) in the higher PEEP group and 409 (35.2%) in the lower PEEP group (adjusted relative risk, 0.94; 95% confidence interval (CI), 0.86 to 1.04; \( P = 0.25 \)). Treatment effects varied with the presence or absence of ARDS, defined by a ratio of partial pressure of oxygen to fractional inspired oxygen concentration equal to or less than 200 mmHg (interaction \( P = 0.02 \)). The relative risks of hospital mortality for patients with and without ARDS were 0.90 (95% CI, 0.81 to 1.00; \( P = 0.049 \)) and 1.37 (95% CI, 0.98 to 1.92, \( P = 0.065 \)), respectively. Patients with ARDS were more likely to achieve unassisted breathing earlier (hazard ratio, 1.16 (95% CI, 1.03 to 1.30, \( P = 0.01 \)); whereas the hazard ratio for time to unassisted breathing was 0.79 (95% CI, 0.62 to 0.99, \( P = 0.04 \)) in patients without ARDS at baseline. Rates of pneumothorax and the use of neuromuscular blockers, vasopressors and corticosteroids were similar.

**Conclusions** Higher levels of PEEP are likely to improve survival for patients with ARDS, but not for patients with less severe acute lung injury.