

Category : **Renal: failure**

A356 - Association between lung mechanics and the development of acute kidney injury in ards patients.

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Introduction:

Mechanical ventilation and Acute Respiratory Distress Syndrome (ARDS) are considered as risk factors for Acute Kidney Injury (AKI). Despite the availability of experimental data, few clinical data exist on the effect of lung mechanics and respiratory parameters on the development of AKI. We pursued to investigate the effect of mechanical ventilation on the development of AKI in mechanically ventilated patients with ARDS.

Methods:

We performed a secondary analysis of individual patient data from seven therapeutic controlled trials conducted by the ARDS and PETAL networks. Chronic kidney disease and early AKI patients (patients developing AKI < 48 hours of enrollment) were excluded from the study. Late AKI was defined as the development of AKI more than 48 hours and up to seven days after the initiation of mechanical ventilation.

Results:

Overall, out of 2986 patients with ARDS 726 developed late AKI (late AKI group) and 2260 did not develop AKI (no AKI group). Both Driving Pressure (DP) and Positive End-Expiratory Pressure (PEEP) at enrollment were independently associated with the development of late AKI [hazard ratio, (HR) 1.039 for increments of 1 cm H₂O in DP, 95% confidence interval (CI) 1.022-1.056 and HR 1.052 for increments of 1 cmH₂O in PEEP, 95% CI 1.021 - 1.084, respectively]. In addition, both mean DP and mean PEEP were independently associated with the development of late AKI [HR 1.052 for increments of 1 cm H₂O in DP, 95% CI 1.035-1.07 and HR 1.203 for increments of 1 cm of H₂O in PEEP, 95% CI 1.165-1.242]. Age (HR 1.008 for increments of 1 year, 95% CI 1.001-1.0015), diabetes mellitus (HR 1.469, 95% CI 1.110-1.944), cardiovascular (HR 1.525, 95% CI 1.212-1.920) and hepatic dysfunction (HR 1.628, 95% CI 1.192-2.224) were also identified as independent risk factors for late AKI.

Conclusion:

Injurious mechanical ventilation may cause late AKI.