

This study examined the role of early fluid administration and identified other risk factors within the first 6 h of hospital presentation associated with developing ARDS in septic patients” Seethala et al (2017).

Abstract:

Background: Sepsis is a major risk factor for acute respiratory distress syndrome (ARDS). However, there remains a paucity of literature examining risk factors for ARDS in septic patients early in their course. This study examined the role of early fluid administration and identified other risk factors within the first 6 h of hospital presentation associated with developing ARDS in septic patients.

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Methods: This was a secondary analysis of septic adult patients presenting to the Emergency Department or being admitted for high-risk elective surgery from the multicenter observational cohort study, US Critical Injury and Illness trial Group-Lung Injury Prevention Study 1 (USCIITG-LIPS 1, NCT00889772). Multivariable logistic regression was performed to identify potential early risk factors for ARDS. Stratified analysis by shock status was performed to examine the association between early fluid administration and ARDS.

Results: Of the 5584 patients in the original study cohort, 2534 (45.4%) met our criteria for sepsis. One hundred and fifty-six (6.2%) of these patients developed ARDS during the hospital stay. In multivariable analyses, Acute Physiology and Chronic Health Evaluation (APACHE) II score (OR 1.10, 95% CI 1.07-1.13), age (OR 0.97, 95% CI 0.96-0.98), total fluid infused in the first 6 h (in liters) (OR 1.15, 95% CI 1.03-1.29), shock (OR 2.57, 95% CI 1.62-4.08), pneumonia as a site of infection (OR 2.31, 95% CI 1.59-3.36), pancreatitis (OR 3.86, 95% CI 1.33-11.24), and acute abdomen (OR 3.77, 95% CI 1.37-10.41) were associated with developing ARDS. In the stratified analysis, total fluid infused in the first 6 h (in liters) (OR 1.05, 95% CI 0.87-1.28) was not associated with the development of ARDS in the shock group, while there was an association in the non-shock group (OR 1.21, 95% CI 1.05-1.38).

Conclusions: In septic patients, the following risk factors identified within the first 6 h of hospital presentation were associated with ARDS: APACHE II score, presence of shock, pulmonary source of infection, pancreatitis, and presence of an acute abdomen. In septic patients without shock, the amount of fluid infused during the first 6 h of hospital presentation was associated with developing ARDS.

Full Text

Reference:

Seethala, R.R., Hou, P.C., Aisiku, I.P., Frenzl, G., Park, P.K., Mikkelsen, M.E., Chang, S.Y., Gajic, O. and Sevransky, J. (2017) Early risk factors and the role of fluid administration in developing acute respiratory distress syndrome in septic patients. *Annals of Intensive Care*. 7:11.

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