



Among critically ill patients receiving crystalloid fluid therapy, use of a balanced crystalloid compared with normal saline did not reduce the mortality, risk of severe AKI or RRT use rate” Liu et al (2019).

Abstract:

**Introduction:** Fluid resuscitation is a fundamental component of the management of critically ill patients, but whether choice of crystalloid affects patient outcomes remains controversial. Therefore, we performed this meta-analysis to compare the efficacy and safety of balanced crystalloids with normal saline.

**Methods:** We searched the MEDLINE, Cochrane Central and EMBASE up to October 2018 to identify randomized controlled trials (RCTs) that compared balanced crystalloids versus normal saline in critically ill patients. The primary outcome was mortality. The secondary results were the incidence of acute kidney injury (AKI) and risk of receiving renal replacement therapy (RRT). Two authors independently screened articles based on the inclusion and exclusion criteria. The meta-analysis was conducted using Revman 5.3, trial sequential analysis (TSA) 0.9 and STATA 12.0.

**Results:** Nine RCTs were identified. The pooled analyses showed that there were no significant differences in mortality (relative risk (RR) = 0.93, 95% confidence interval (CI) = 0.86, 1.01, P = 0.08), incidence of AKI (RR 0.94, 95% CI 0.88, 1.00, P = 0.06) or RRT use

rate (RR 0.94, 95% CI 0.69, 1.27, P = 0.67) between balanced crystalloids and normal saline groups. However, TSA did not provide conclusive evidence.

Conclusions: Among critically ill patients receiving crystalloid fluid therapy, use of a balanced crystalloid compared with normal saline did not reduce the mortality, risk of severe AKI or RRT use rate. Further large randomized clinical trials are needed to confirm or refute this finding.

Trial registration: A protocol of this meta-analysis has been registered on PROSPERO (registration number: CRD42018094857).

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#### Reference:

Liu, C., Lu, G., Wang, D., Lei, Y., Mao, Z., Hu, P., Hu, J., Liu, R., Han, D. and Zhou, F. (2019) Balanced crystalloids versus normal saline for fluid resuscitation in critically ill patients: A systematic review and meta-analysis with trial sequential analysis. The American Journal of Emergency Medicine. March 1st. .

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