To evaluate outcomes in patients receiving balanced fluids for resuscitation in pediatric severe sepsis" Emrath et al (2017).

Abstract:

Objective: To evaluate outcomes in patients receiving balanced fluids for resuscitation in pediatric severe sepsis.

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Design: Observational cohort review of prospectively collected data from a large administrative database.

Setting: PICUs from 43 children's hospitals.

Patients: PICU patients diagnosed with severe sepsis.

Interventions: None.

Measurements and Main Results: We reviewed data from the Pediatric Health Information System database from 2004 to 2012. Children with pediatric severe sepsis receiving balanced fluids for resuscitation in the first 24 and 72 hours of treatment were compared to

those receiving unbalanced fluids. Thirty-six thousand nine hundred eight patients met entry criteria for analysis. Two thousand three hundred ninety-eight patients received exclusively balanced fluids at 24 hours and 1,641 at 72 hours. After propensity matching, the 72-hour balanced fluids group had lower mortality (12.5% vs 15.9%; p = 0.007; odds ratio, 0.76; 95% CI, 0.62–0.93), lower prevalence of acute kidney injury (16.0% vs 19.2%; p = 0.028; odds ratio, 0.82; 95% CI, 0.68–0.98), and fewer vasoactive infusion days (3.0 vs 3.3 d; p < 0.001) when compared with the unbalanced fluids group.

Conclusions: In this retrospective analysis carried out by propensity matching, exclusive use of balanced fluids in pediatric severe sepsis patients for the first 72 hours of resuscitation was associated with improved survival, decreased prevalence of acute kidney injury, and shorter duration of vasoactive infusions when compared with exclusive use of unbalanced fluids.

Reference:

Emrath, E.T., Fortenberry, J.D., Travers, C., McCracken, C.E. and Hebbar, K.B. (2017) Resuscitation With Balanced Fluids Is Associated With Improved Survival in Pediatric Severe Sepsis. Critical Care Medicine. 45(7), p.1177–1183.

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