Recent data have challenged the notion that rapid intravenous fluid administration results in adverse neurologic outcomes in children with diabetic ketoacidosis (DKA)” Pruitt et al (2019).

Abstract:

Background: Recent data have challenged the notion that rapid intravenous fluid administration results in adverse neurologic outcomes in children with diabetic ketoacidosis (DKA). While many physicians still administer a cautious 10 cc/kg bolus of intravenous fluids for pediatric DKA patients, there may be benefits to using a larger bolus.

Methods: This was a retrospective chart review of all pediatric patients with DKA presenting to a single emergency department (ED) between 2013 and 2015. Patients who received a bolus of 10 cc/kg or less in the ED were compared to patients who received >10 cc/kg of fluids. The primary outcome was the difference in hospital length-of-stay between the two groups. Secondarily, we compared groups with regards to the time to bicarbonate normalization.

Results: In sum, 170 pediatric DKA ED visits were analyzed. Patients who received a 10 cc/kg bolus or less of fluids in the ED had a mean hospital length-of-stay > that was 0.38 days longer (95% CI: 0.006 to 0.75 days) than those who received >10 cc/kg. On multivariable regression analysis, the difference between groups was diminished and no longer statistically significant. The time to bicarbonate normalization was 0.12 days longer (95% CI -0.029 to 0.27) in the 10 cc/kg or less group than the >10 cc/kg group.

Conclusions: After adjustment for confounders, no statistically significant differences in outcomes were seen in pediatric DKA patients who received a 10 cc/kg bolus or less compared to those who received a larger initial bolus.

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