

## Bergmann 2018

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**Bibliographic Reference** Bergmann, Kelly R; Abuzzahab, M Jennifer; Nowak, Jeffrey; Arms, Joe; Cutler, Gretchen; Christensen, Eric; Finch, Mike; Kharbanda, Anupam; Resuscitation With Ringer's Lactate Compared With Normal Saline for Pediatric Diabetic Ketoacidosis.; Pediatric emergency care; 2018

### Study details

<b>Study type</b>	<b>Retrospective cohort study</b>
Study location	USA
Study setting	multicentre study which included patient, observation, or emergency department (ED) care
Study dates	January 1, 2005, and September 30, 2015
Sources of funding	Not reported
Inclusion criteria	children aged 0 to 17 years discharged from inpatient, observation, or emergency department (ED) care with a diagnosis of diabetes with ketoacidosis, type I (International Classification of Diseases, Ninth Revision [ICD-9] codes 250.11 and 250.13), between January 1, 2005, and September 30, 2015
Exclusion criteria	those with nonparenteral administration route, infused volume of less than 50 mL, or concentrations other than 0.9% for the NS group. We further excluded those without available cost records as not all hospitals reported it each year.
Sample size	49,737
Loss to follow-up	not reported
Condition specific characteristics	No definition provided.
Interventions	<b><u>Ringer's lactate</u></b> No information provided on DKA protocols used. <b><u>Normal saline</u></b> No information provided on DKA protocols used.
Outcome measures	<b>Cerebral oedema</b>

<b>Study type</b>	<b>Retrospective cohort study</b>
	<b>Length of stay (days)</b>
	<b>Healthcare utilisation - Mechanical ventilation</b>

### Study arms

**Normal saline (N = 43841)**

**Ringer's lactate (N = 1762)**

### Characteristics

#### Arm-level characteristics

	<b>Normal saline (N = 43841)</b>	<b>Ringer's lactate (N = 1762)</b>
% Female Percentage (%)	54.5	53.5
Age MedianIQR	12 (9 to 15)	12 (9 to 15)

#### ROBINS-I Tool

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Moderate (Appropriate analysis method that controlled for all the important confounding domains not conducted)
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Serious (DKA protocols followed not defined.)
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Serious (DKA protocols followed not defined.)

<b>ROBINS-I Tool</b>		
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Low
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious (Appropriate analysis method that controlled for all the important confounding domains not conducted. DKA protocols followed not defined.)
	Directness	Partially Applicable (Definition of DKA not provided)