

[Evidence review for fluid therapy for the management of diabetic ketoacidosis]

Basnet 2014

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Bibliographic Reference

Basnet, Sangita; Venepalli, Preethi K; Andoh, Jennifer; Verhulst, Steven; Koirala, Janak; Effect of normal saline and half normal saline on serum electrolytes during recovery phase of diabetic ketoacidosis.; Journal of intensive care medicine; 2014; vol. 29 (no. 1); 38-42

[Diabetes (type 1 and type 2) in children and young people: diagnosis and management]: evidence review for fluid therapy for the management of diabetic ketoacidosis (December 2020)

Study details

Study type	Retrospective cohort study
Study location	USA
Study setting	Paediatric intensive care unit
Study dates	2005 and 2010
Duration of follow-up	For majority of the patients, we found that plasma glucose was checked every hour; sodium, potassium, and bicarbonate every 2 hours; and serum chloride every 6 to 8 hours
Sources of funding	Not reported
Inclusion criteria	Children between the age of 1 and 18 years with initial serum pH <7.3 and serum bicarbonate <15 meq/L with hyperglycemia and ketonuria
Exclusion criteria	Patients in shock requiring pressors for management
Sample size	121
Condition specific characteristics	DKA defined as initial serum pH <7.3 and serum bicarbonate <15 meq/L with hyperglycemia and ketonuria.
Interventions	<p><u>0.9% saline</u> Used a post-bolus re-hydration fluid during the recovery phase of DKA</p> <p><u>0.45% saline</u> Used a post-bolus re-hydration fluid during the recovery phase of DKA</p>
Outcome measures	<p>Healthcare utilisation - Mean PICU stay (hours)</p> <p>Change in corrected sodium (meq/L)</p> <p>Rate of change of glucose (mg/dL/h)</p>

Study arms

0.9% saline (N = 47)

0.45% saline (N = 41)

Characteristics

Arm-level characteristics

	0.9% saline (N = 47)	0.45% saline (N = 41)
Age (years) Mean/SD	12.9 (4.1)	9.9 (4.4)
% Female Nominal	62	61

ROBINS-I Tool		
Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Moderate (no information on confounders or of methods to control for any post-intervention variables that could have been affected by the intervention.)
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	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Moderate (No information on co-interventions e.g. initial fluid used, rate and volume or type of additives.)
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	Moderate (no information on confounders or of methods to control for any post-intervention variables that could have been affected by the intervention. No information on co-interventions e.g. initial fluid used, rate and volume or type of additives.)
	Directness	Directly applicable