

Emergency Treatment of Diabetic Ketoacidosis

TO BE USED ONLY IN CONSULTATION WITH A PEDIATRIC INTENSIVIST

I. Diagnosis (patient must have)

- a. Hyperglycemia (serum glucose >300)
- b. Acidosis (pH < 7.3 or HCO₃ <15)
- c. Ketosis (ketones in urine or acetone/ketones in blood)

Diagnosis is supported by *polyuria* and *polydipsia* or *known diabetic*
Other Diagnosis to consider: Sepsis and Shock, Asthma/Steroids, and
Nonketotic hyperosmolar Coma (if glucose is >1000)

II. Laboratory evaluation

- a. Initial: Urinalysis, Basic Metabolic Panel
- b. Hourly: finger stick glucose
- c. Every 2 hours: Basic Metabolic Panel

III. Monitoring

- a. Cardiac monitor, potassium fluctuations may be associated with arrhythmia
- b. Glasgow Coma Score (GCS) at least hourly
- c. Call for drop in GCS >2 points, severe headache, persistent vomiting

IV. Fluids: Goal is to avoid excessive fluid administration or rapid osmotic shifts

- a. If hypovolemia present: Consider fluid bolus with 20ml/kg Normal Saline (0.9% NS) IV.
- b. Maintenance fluid (start with 0.9% NS)
- c. Change IVF to contain dextrose (D5NS or D10NS) when serum glucose < 300
- d. May add potassium (20-40 mEq/L) if patient making urine, on insulin, and K < 5.5 mEq/L
- e. **Do not give Sodium Bicarbonate.**
Administration has been associated with increased likelihood of cerebral edema

Weight	Rate of IVF
<10 kg	8 x (weight in kg) ml/hr
10-15kg	90 ml/hr
15-20kg	120 ml/hr
20-30kg	140 ml/hr
30-50kg	160 ml/hr
50-80kg	200 ml/hr
>80kg	250 ml/hr

V. Insulin drip

- a. Start insulin drip at 0.1 units/kg/hour
 - i. May use 0.05 units/kg/hour in children less than 2 years old
- b. Make insulin concentration mixed 1 unit/ml in normal saline
- c. Goal: SLOW correction of the acidosis and hyperglycemia
- d. Goal: drop glucose by 100mg/dL per hour, then keep between 200-300
- e. **DO NOT GIVE IV INSULIN BOLUS.** While adults tend to be insulin resistant and can tolerate bolus insulin, children do not. Bolus doses of insulin have been associated with CARDIAC ARREST in children.
- f. Run insulin into same IV as the IVF

**DO NOT GIVE SODIUM BICARBONATE
DO NOT GIVE INSULIN BOLUS**

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866-353-KIDS (5437)