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<5.5mEq/L
   e. Do not give Sodium Bicarbonate.
      Administration has been associated with increased likelihood of cerebral edema

V. Insulin drip
   a. Start insulin drip at 0.1units/kg/hour
      i. May use 0.05 units/kg/hour in children less than 2 years old
   b. Make insulin concentration mixed 1unit/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

<table>
<thead>
<tr>
<th>Weight</th>
<th>Rate of IVF</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 kg</td>
<td>8 x (weight in kg) ml/hr</td>
</tr>
<tr>
<td>10-15kg</td>
<td>90 ml/hr</td>
</tr>
<tr>
<td>15-20kg</td>
<td>120 ml/hr</td>
</tr>
<tr>
<td>20-30kg</td>
<td>140 ml/hr</td>
</tr>
<tr>
<td>30-50kg</td>
<td>160 ml/hr</td>
</tr>
<tr>
<td>50-80kg</td>
<td>200 ml/hr</td>
</tr>
<tr>
<td>&gt;80kg</td>
<td>250 ml/hr</td>
</tr>
</tbody>
</table>

DO NOT GIVE SODIUM BICARBONATE
DO NOT GIVE INSULIN BOLUS

TO BE USED ONLY IN CONSULTATION WITH A PEDIATRIC INTENSIVIST
866-353-KIDS (5437)