Diabetic Ketoacidosis (DKA)

Definition: Hyperglycemia, ketonemia, ketonuria, and metabolic acidosis (pH <7.3, Bicarbonate <15mEq/L).

- Moderate: pH<7.2-7.3 and HCO3<15
- Severe: pH<7.1 and HCO3<10

Treatment Guidelines: (New onset diabetes is treated differently because of increase risk of cerebral edema).

1. **Fluids:**
   - **Bolus**: 20cc/kg bolus of NS over 1 hour (faster if the child is hypotensive). If in shock/ hemodynamic instability, repeat bolus of NS.
   - **Maintenance**: 1.5X maintenance fluids of ½ NS with 20Meq KCL and 20Meq KP04/L for established diabetic patients. For *new onset DKA* patients, consider fluids changed to NS with 20KCL+ 20KPO4/L.
   - Strict I & O recording to assure positive fluid balance.

2. **Electrolytes: No Sodium Bicarbonate**
   - **Sodium:** General fluid should contain ½ NS or NS if hyponatremic.
   - **Potassium & Phosphate: K is added after the initial bolus of fluids**. One half KCL and the other half KPO4. 40Meq/L of K (20Meq KCL/L and 20Meq KP04/L).

3. **Insulin drip: (mix 50 units Insulin-R in 50cc NS): No Bolus of insulin**
   - ***Known diabetic***: begin with continuous insulin drip 0.1unit/kg/hr (max 3-4 units/hr) after first fluid bolus. 0.05u/kg/hr if <3yrs. Drop glucose at 80-100 mg/dL/hr.
   - ***New Onset***: start at 0.05 units/kg/hr and try to keep the glucose from dropping by more then 50mg/dL/hr.
   - When glucose reaches <300, or if glucose decreases >100mg/dL/hr, change fluids to D5 1/2NS with 20Meq KCL & 20Meq KP04/L at 1.5 to 2X maintenance. Adjust the insulin to keep glucose slowly decreasing.

4. **Laboratory values:**
   - Check blood glucose Q1hr
   - Check VBG (Green tube).
   - Check electrolytes generally Q2hrs.
   - Monitor urine for ketones and glucose with each void**.**