**Diabetic Ketoacidosis (DKA) Management Algorithm (Adult Patients)**

**Full Guideline:** Diabetes-Adult/Ped-Inpatient/Amb/ED

**Questions?** Contact Inpt Diabetes Quality Committee

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**IV Fluids**
- Evaluate hydration status
  - Severe hypovolemia
    - Give 0.9% NaCl at rate of 1 L/hr
  - Mild dehydration
    - Cardiogenic shock
      - Hemodynamic monitoring/pressors
    - Evaluate corrected serum Na+ concentration
      - Na+corrected = Na+ measured + [(glucose-100)/100]*1.6
        - Normal or high serum Na+
        - Low serum Na+
          - 0.9% NaCl at rate of 250-500 mL/hr
          - 0.45% NaCl at rate of 250-500 mL/hr

**Insulin**
- Ensure adequate potassium level before starting insulin therapy
- Use Standard Dose Insulin Infusion – Adult – Practice Protocol
  - Consider adding 5% dextrose to IV fluids when blood glucose declines to 200 mg/dL or lower to reduce hypoglycemia risk (may be unnecessary if patient eating)

**Potassium**
- Establish adequate urine output of ≥50 ml/hr, then replete, if necessary
  - K+ < 3.3 mEq/L
  - K+ > 5.2 mEq/L
  - Before starting insulin therapy, give 10-20 mEq K+ per hour in IV fluids until K+ > 3.3 mEq/L‡
  - K+ 3.3 to 5.2 mEq/L
    - Give 10-20 mEq/L of K+ in IV fluids to maintain K+ level between 4 and 5 mEq/L (If appropriate, K+ supplementation may also be provided orally.)

‡ K+ Infusion rates ≥20 mEq/hr require a cardiac monitor. Maximum recommended rate for peripheral K+ administration is no greater than 10 mEq/hr. Sliding Scale potassium only allowed on B43, B44, F44, B45, TLC, D45, D65 IMC, F45, F4M5

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**DKA Resolution/IV to SQ Transition**
- Insulin infusion should be continued until acidosis has resolved, as demonstrated by pH > 7.3, bicarbonate > 18 mmol/L, blood glucose < 200 mg/dL, and normalization of anion gap. After resolution, if patient is able to eat, transition to subcutaneous (SQ) insulin. Refer to order set ED/IP - Diabetes - Insulin Transition - IV to Subcutaneous - Adult - Supplemental [5254]. Overlap the insulin drip with the SQ insulin by 2 or more hours. For an insulin-naïve patient, calculate the daily insulin dose received via insulin infusion in the last 24 hours, decrease by 20%, and split the remainder up as ½ basal insulin and ½ mealtime insulin (mealtime dose to be divided between all meals).

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**For a patient in HHS, use an IV solution containing 5% dextrose when blood glucose declines to 300 mg/dL or lower.**

Hourly glucose monitoring required every hour until glucose within target range of 110-150 mg/dL for 3 hours, then check every 2 hours. Resume hourly monitoring if blood glucose deviates from the target range. Check electrolytes and phosphate level every 2 hours times two, then every 4 hours. Check a beta-hydroxybutyrate level every 8 hours. Identify and treat the cause of the DKA precipitation.

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ADA Standards of Medical Care in Diabetes-2019.