   a. Provide volume expansion with normal saline bolus
      i. **Adult**: Normal saline 20 mL/kg at rate of 1000 mL/hr; if symptoms of hypovolemic shock, follow Shock Guideline.
      ii. **Pediatric**: Normal saline 10 mL/kg bolus IV, reassess, and repeat up to 40 mL/kg total; if symptoms of hypovolemic shock, follow Shock Guideline.
3. If findings of hyperkalemia are present, administer IV fluids and consider administration of:
   a. Calcium chloride: 1 gm IV/IO over 5 minutes, ensure IV patency and do not exceed 1 mL per minute
   OR
   b. Calcium gluconate: 2 gm IV/IO over 5 minutes, with constant cardiac monitoring
4. If findings of hyperkalemia, consider administration of sodium bicarbonate 1 mEq/kg (max dose of 50 mEq) IV bolus over 5 minutes and consider albuterol 5 mg via nebulizer (can be repeated if no response is seen) to the two places in the document where the administration of albuterol is suggested for the treatment of hyperkalemia
5. Reassess patient
   a. Reassess vital signs (pulse, blood pressure, respiratory rate, neurologic status assessment), mental status, and signs of dehydration
   b. If mental status changes, reassess blood glucose level and provide appropriate treatment if hypoglycemia has developed
6. Disposition
   a. Transport to closest appropriate receiving facility

Patient Safety Considerations

1. Overly aggressive administration of fluid in hyperglycemic patients may cause cerebral edema or dangerous hyponatremia. Cerebral edema is a leading cause of death in children with DKA but is very rare in adults
   a. Closely monitor for signs of altered mental status, increased intracranial pressure, and immediately discontinue IV fluids and elevate head of bed if signs of increased ICP develop
   b. Reassess and manage airway as needed
2. Asymptomatic hyperglycemia poses no risk to the patient while inappropriately aggressive interventions to manage blood sugar may harm patients

Notes/Educational Pearls

Key Considerations

1. New onset DKA in pediatric patients commonly presents with nausea, vomiting, abdominal pain, and/or urinary frequency
2. Consider causes for hyperglycemia by thinking about the **3I's**:
   a. Insulin: This refers to any medication changes for insulin or oral medications including poor compliance or malfunctioning insulin pump
   b. Ischemia: This refers to hyperglycemia sometimes being an indication of physiologic stress in a patient and can be a clue to myocardial ischemia in particular
   c. Infection: Underlying infection can cause derangements in glucose control

Pertinent Assessment Findings

1. Concomitant trauma
2. Abdominal pain, "fruity breath," and rapid-deep respirations (Kussmaul respirations) may