Diabetes Ketoacidosis (DKA) Emergency Room Algorithm

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Indusion Criteria: patient of any age presenting with potential Diabetic Ketoacidosis (DKA)
[Consider if history of: weight loss, vomiting, abdominal pain, polyuria, polydipsia, nocturia;

Consider if exam findings of: tiredness, Kussmaul respirations, dehydration, mental status changes, abdominal pain
(can be severe and present as acute abdomen)]

Exclusion Criteria: well- appearing, HCO3 >18 mmol/L

INITIAL MANAGEMENT

Establish DKA diagnosis (defined by pH <7.3, HCO3 <15 mmol/L, blood sugar >200, ketones – blood or urine)

*Note: Hyperglycemic Hyperosmolar Syndrome (HHS) is a spectrum with DKA, and may not have acidosis and ketones, but will have severe hyperglycemia and dehydration.

Discuss care with PICU/Endocrine.

LABS:

- Chem 10, Blood gas, CBC w diff, HbA1C, STAT B-hvdroxybuterate. UA
- Repeat Chem 7/VBG after initial NS bolus

If newly diagnosed diabetes, add:

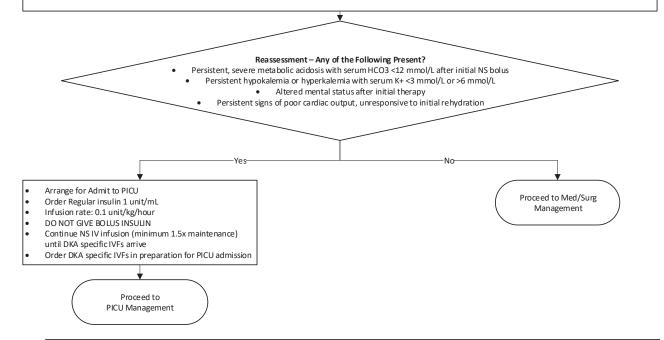
- Free T4, TSH, is let cell antibody, insulin antibody, glutamic acid decarboxylase antibody
- Consider C-peptide if BMI >95th percentile

FEN:

- Give 0.9% NS bolus 10-20 mL/kg over 30-60 min
 - Additional fluid bolus <u>only</u> if signs of worsening dehydration or shock (hypotension, tachycardia, delayed cap refill, oliquria)
 - Caution needed when using depressed mental status as marker of shock, as it may represent DKA associated brain injury
- Large volume fluid resuscitation may be associated with increased risk of cerebral edema
- Post bolus: start NS at minimum of 1.5x maintenance until appropriate fluids (per PICU/Med Surg care) become available

NURSING CARE:

- Establish PIV x2
- If oliguria present, insert foley catheter
- Strict I&O
- Bed Rest



Always monitor for DKA Associated Brain Injury and notify the PICU attending if s/s present!

Signs/Symptoms:

HA, change in neuro status (restlessness, irritability, drowsiness), inappropriate slowing of HR or rise of BP

Treatment: Therapy should always precede imaging!

- (1) Hypertonic Saline(3%) 1.25 2.5 mEq/kg (2.5 5 ml/kg) IV (over 5 min for acute herniation; over 10 min for increased intracranial pressure) QR Mannitol 0.25 g/kg over 30 minutes (can be repeated every 6-8 hours)
- (2) Ensure pt on 0.9% NS fluids
- (3) If GCS <11 after therapy, consider ET intubation
- (4) Consider head CT
- * Do not give sedating meds outside the setting of intubation (may lead to rise of PCO2 and herniation)

If no improvement in mental status, repeat:

Hypertonic Saline (3%) 1.25-2.5 mEq/kg (2.5-5 mL/kg) IV (over 5 min for acute herniation; over 10 min for increased intracranial pressure) <u>OR</u> Mannitol 0.25 g/kg over 30 minutes

