University of Cincinnati Medical Center | UC Health

Lab: 43700

UC Medical Center (UCMC) DKA Protocol

Consider ICU admission if altered MS, pH < 7.1, ESRD or CHF (GA?)
Determine and address underlying cause (infection, non-compliance, insulin pump, not working, new diagnosis etc.)

FOR OBSCU ONLY

Administer IV fluid boluses

First 1 hour – 1 L NS
Hours 2-4: 0.5-1L/H NS
Thereafter 250 mL/h until 80% deficient corrected of appropriate fluid (see below).
Body water deficit = 0.6 * bodyweight* (1- (140/Na)

EKG, Start Tele (cardiac + pulse ox), insert foley, CEFM and tocometry if GA appropriate
Check VS/BG Q1H, BMP/VBG Q1-2H

Potassium Replacement

Re-evaluate with each BMP

Replace K+ per Electrolyte Replacement Protocol

Exclusions: SCr > 1.8 mg/dL or urine output < 0.5 mL/kg/hr x 4 hours; dialysis

See potassium replacement protocol
(See next page)

IV Fluids

Re-evaluate BG portion every hour
Re-evaluate K, corrected Na, and BG with each BMP/VBG+
Calculate Corrected Na as follows:
Na + 1.6*[(BG-100)/100]
http://www.globalrph.com/hyperglycemia.htm
Call MD if Cl > 115 for alternate orders

Insulin

Hold if K < 3.3. Give 40 mEq/h until K > 3.3. Check Q1H.

1. **If BG > 200,** loading dose of 0.1-0.4 units/kg, then start gtt
2. **If BG< 200, start gtt**

If BG falls by ≥ 100 mg/dL in one hour or fails to decrease by 20% in first 2 hours, exit drip protocol (call MD)

Transition to home insulin (with 2-hour overlap) when anion gap* <11,

BG 100-249 mg/dL

BG < 100 mg/dL

50 mL D50 IV x1, then D10W infusion at 150 mL/hr. CALL MD

BG ≥ 250 mg/dL

K ≥ 5.3 mEq/L

- Corrected Na ≤ 145 → D5NS @ 250 mL/hr
- Corrected Na > 145 → D5½NS @ 250 mL/hr

K < 5.3 mEq/L

- Corrected Na ≤ 145 → D5NS + 20 mEq KCl/L @ 250 mL/hr
- Corrected Na > 145 → D5½NS + 20 mEq KCl/L @ 250 mL/hr

K ≥ 5.3 mEq/L

- Corrected Na ≤ 145 → NS @ 250 mL/hr
- Corrected Na > 145 → ½NS @ 250 mL/hr

K < 5.3 mEq/L

- Corrected Na ≤ 145 → NS + 20 mEq KCl/L @ 250 mL/hr
- Corrected Na > 145 → ½NS + 20 mEq KCl/L @ 250 mL/hr

DKA Electrolyte Replacement Protocol (adapted from UCMC ICU electrolyte replacement protocol)

Exclusions

- Serum Creatinine > 1.3
- Urine output < 0.5 mL/kg/h
- Dialysis

Potassium (Reference Range 3.5 – 5.3 mmol/L)	
Potassium level (mmol/L)	
4 – 4.3	20 mEq Potassium Chloride IVPB over 1 hour (central line) or over 2 hours (peripheral line) once
3.7 – 3.9	40 mEq Potassium Chloride IVPB over 2 hours (central line) or over 4 hours (peripheral line) once
3.4 – 3.6	60 mEq Potassium Chloride IVPB over 3 hours (central line) or over 6 hours (peripheral line) once
3 – 3.3	80 mEq Potassium Chloride IVPB over 4 hours (central line) or over 8 hours (peripheral line) once
Less than 3	80 mEq Potassium Chloride IVPB over 4 hours (central line) or over 8 hours (peripheral line) once NOTIFY PHYSICIAN AND RECHECK POTASSIUM 2 HOURS AFTER INFUSION

Insulin drip protocol

- MD to be contacted and drip held until further discussion if
  - Potassium < 3.3
  - Fail to decrease BG by 20% in 2 hours
  - BG < 100
  - BG falls > 100 in 1 hour

Blood glucose	Insulin
< 80 mg/dL	Discontinue drip, continue IV fluids
100-120 mg/dL	0.5 units/hour
121-140 mg/dL	1.0 units/hour
141-160 mg/dL	1.5 units/hour
161-180 mg/dL	2.0 units/hour
181-200 mg/dL	2.5 units/hour
201-220 mg/dL	3.0 units/hour
221-240 mg/dL	3.5 units/hour (CALL MD)
241-260 mg/dL	4.0 units/hour
261-280 mg/dL	4.5 units/hour
281-300 mg/dL	5.0 units/hour
301-320 mg/dL	5.5 units/hour
321-340 mg/dL	6.0 units/hour
341-360 mg/dL	6.5 units/hour
361-380 mg/dL	7.0 units/hour
381-400 mg/dL	7.5 units/hour
401-420 mg/dL	8.0 units/hour
421-440 mg/dL	8.5 units/hour
441-460 mg/dL	9.0 units/hour
460-480 mg/dL	9.5 units/hour
480+ mg/dL	10.0 units/hour