

DKA and HHS REFERENCE TEXT

Goals of Therapy:

Labs

Replace volume deficits	Monitor Chem 8 every 6 hours x 24 hours
Replace electrolyte deficits	Monitor Magnesium level daily x 3 days
Correct Ketoacidosis (anion gap<12)	Call MD if K > 5.5 mEq/L or <3.5 meq/L
Correct hyperglycemia & prevent hypoglycemia	

INSULIN: Notify MD before starting Insulin Drip if serum potassium is less than 3.3

- Bolus: Human Regular Insulin 0.15 units/kg IV x1dose (if not given in ED and not started on Insulin IV Drip)
- Standard Insulin IV Drip 100 units Human Regular Insulin in 100 ml NS (1 unit = 1 mi.)
- Check Blood Glucose every 1 hour and adjust insulin as follows:

<u>BLOOD GLUCOSE mg/dl</u>	<u>½ Standard (LOW)</u> (units/hour)	<u>Algorithm 1 Standard</u> (units/hour)	<u>Algorithm 2 Stress</u> (units/hour)
100-140	0.5	1	2
141-180	0.7	1.5	3
181-220	1	2	4
221-260	1.2	2.5	5
261-300	1.5	3	6
301-340	2	4	8
Over340	2.5	5	10

- Start on Standard scale
- For blood glucose less than 140 mg/dl x2, go to half standard infusion or move 1 column to the left
- If blood glucose greater than 340 mg/dl x2, go to stress infusion rate or move 1 column to the right
- If patient is on ½ standard and blood glucose less than 140 mg/dl x2, then contact physician to consider transition or adjustment to customized lower scale.

DIAGNOSTIC CRITERIA

Serum HC03	DKA	HHS
pH	Low (< less than 15 mEq/liter) <less than 7.3	Normal or slightly low Greater than 7.3
BG	800 mg/dl or can be normal	Often >greater than 800 mg/dl
Serum BHBA	Greater than 5 mmol/1	Less than 5 mmol/1
Urine Ketones	Large	Small

- Na correction: $2.4 \times (\text{plasma glucose} - 100) / 100$ (AM. J. Med. 1999; 106:399)
- Anion Gap: $\text{Na}_{\text{MEASURED}} - \text{Cl} - \text{CO}_2$ (normal 8-20)
- Calculated Osmolality: $2(\text{Na} + \text{K}) + \text{glucose}/20 + \text{BUN}/2.8$ (coma: calculated osmolality exceeds 230)

FLUID MANAGEMENT:

- Assume about 10% dehydration (100 ml/kg). Give 1 liter/hour for 4 hours and then 250-500 ml/hour for the next 2 to 4 hours; then 100-250 ml/hour.
- Correct fluid deficit over 36 to 48 hours. (Give NS initially; give ½ NS if corrected Na is > greater than 150 mEq/liter.
- Change to D5NS or D51/2NS when BG< less than 200mg/dL.\