



Physician Orders ADULT: Diabetes Ketoacidosis Protocol Plan (DKA Plan)

Initiate Orders Phase

Care Sets/Protocols/PowerPlans

- ☐ Initiate Powerplan Phase
Phase: Diabetes Ketoacidosis Plan Phase, When to Initiate: _____
- ☐ Initiate Powerplan Phase
Phase: DKA Treatment Phase One, When to Initiate: _____
- ☐ Initiate Powerplan Phase
Phase: DKA Treatment Phase Two, When to Initiate: _____

Diabetes Ketoacidosis Plan Phase

Non Categorized

Patient must meet at least **TWO DKA Criteria**. If patient does not meet criteria, alternative therapy should be considered. (NOTE)*

- R DKA Criteria
Must choose TWO DKA criteria. Hold down CTRL Key to make multiple choices., T;N, Ketone POS+/B-Hydroxybutyrate POS+ | Plasma Glucose greater than 250 mg/dL | Arterial pH less than or equal to 7.3 | Serum Bicarbonate less than 18 mEq/L | Anion Gap greater than or equal to 12
- ☐ Add To Problem List
Problem: DKA (diabetic ketoacidosis)
- ☐ Add To Problem List

Admission/Transfer/Discharge

- ☐ Patient Status Initial Inpatient
T;N Admitting Physician: _____
Reason for Visit: _____
Bed Type: _____ Specific Unit: _____
Care Team: _____ Anticipated LOS: 2 midnights or more
- ☐ Notify Physician-Once
Notify For: room number upon arrival to unit

Vital Signs

- ☒ Vital Signs
Monitor and Record T,P,R,BP, q4h(std)

Activity

- ☐ Bedrest
- ☐ Bedrest w/BRP
- ☐ Out Of Bed
Up Ad Lib
- ☐ Out Of Bed
With Assistance

Food/Nutrition

- ☐ NPO
- ☐ *Instructions: NPO except for ice chips (DEF)**
- ☐ *Instructions: NPO except for sips of water*

Patient Care

- R Bedside Glucose Nsg
Stat, q1h

Medications

- ☒ Hypoglycemia Protocol Plan(SUB)*
- ☐ VTE MEDICAL Prophylaxis Plan(SUB)*

Laboratory

- ☒ BMP
Time Study, T;N, q4h x 48 hr, Type: Blood
- ☒ Magnesium Level
Time Study, T;N, q8h x 48 hr, Type: Blood
- ☒ Phosphorus Level





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- Time Study, T;N, q8h x 48 hr, Type: Blood*
- ☐ Ketone(Beta-Hydroxybutyrate)
Routine, T+1;0400, once, Type: Blood
 - ☐ CBC
Routine, T+1;0400, once, Type: Blood
 - ☐ Hgb A1C
Routine, T+1;0400, once, Type: Blood
 - ☐ Ketone(Beta-Hydroxybutyrate)
STAT, T;N, once, Type: Blood
 - ☐ Osmolality Serum
STAT, T;N, once, Type: Blood
 - ☐ Urinalysis w/Reflex Microscopic Exam
Routine, T;N, once, Type: Urine, Nurse Collect
 - ☐ Urine Culture
Routine, T;N, Specimen Source: Urine, Nurse Collect
 - ☐ Pregnancy Screen Serum
Routine, T;N, once, Type: Blood
 - ☐ Pregnancy Screen Urine
Routine, T;N, once, Type: Urine, Nurse Collect
 - ☐ Pregnancy Screen Urine Point of Care
Routine, once

Consults/Notifications/Referrals

- ☐ Consult Clinical Dietitian
Routine, Type of Consult: Education / ADA
- ☐ Consult Diabetic Teaching
Priority: Routine, Diabetes Out of Control
- ☐ Notify Physician For Vital Signs Of
BP Systolic < 90, Heart Rate > 140
- ☒ Notify Physician-Continuing
Notify For: Glucose less than 70mg/dL or greater than 400mg/dL
- ☒ Notify Physician-Continuing
Notify: Physician, Notify For: Less than 50 mg/dL decrease in Glucose level despite MAX insulin rate of 15 units/hr; persistent emesis; NO mental status improvement within 6 hrs of starting treatment; Decrease in Glucose of 400 mg/dL or more in 1 hour.
- ☒ Notify Physician-Continuing
Notify: Physician, Notify For: HR >120 or <50; MAP <55; Temp >101 or <96; RR >25 or <12; and SATs 92% on RA or <95% on 40% FiO2.
- ☒ Notify Physician-Continuing
Notify: Physician, Notify For: Serum Phosphate level less than 2 mmol/L; Potassium level greater than 5.5 or less than 3.
- ☒ Notify Physician-Continuing
Notify: Physician, Notify For: If patient's blood glucose level falls below 100 mg/dL after D51/2NS is started.

DKA Treatment Phase ONE

Nursing Communication

- ☒ Nursing Communication
DKA Treatment Phase ONE: Place lab order for BMP, Magnesium and Phosphorous 2 hours after insulin drip started and call MD with results.
- ☒ Nursing Communication
DKA Treatment Phase ONE: Once glucose is less than 250 mg/dL, insulin drip should no longer be titrated.

Continuous Infusion

Use caution in patients with Congestive Heart Failure and/or End Stage Renal Disease in regards to management of fluid. Fluid management of these patients is at the discretion of the physician(NOTE)*





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Bolus IV Fluids

Physician must choose one fluid for bolus infusion, either Lactated Ringers or Sodium Chloride 0.9%. (NOTE)*

- ☐ lactated ringers
1,000 mL, IV, STAT
Comments: Infuse first liter at 999 mL/hr; Infuse second liter at 500 mL/hr then STOP. Discontinue Lactated Ringers and START 0.45% Sodium Chloride.
- ☐ Sodium Chloride 0.9%
1,000 mL, IV, STAT
Comments: Infuse first liter at 999 mL/hr; Infuse second liter at 500 mL/hr then STOP. Discontinue 0.9% Sodium Chloride and START 0.45% Sodium Chloride.

Continuous Infusion

Use caution in patients with Congestive Heart Failure and/or End Stage Renal Disease in regards to management of fluid. Fluid management of these patients is at the discretion of the physician. (NOTE)*

- ☒ Sodium Chloride 0.45%
1,000 mL, IV, STAT, 250 mL/hr
Comments: START after 2 liters of Bolus Fluids have infused. Start 0.45% Sodium Chloride at 250 mL/hr continuously. If Accucheck drops below 250 mg/dL, Discontinue 0.45% Sodium Chloride AND START D5W with 0.45% NS at 150 mL/hr.
- ☒ D5 1/2NS
1,000 mL, IV, Routine, 150 mL/hr
Comments: Start once Accucheck drops to less than 250 mg/dL.
- ☐ D5 1/2 NS KCl 20 mEq/L
1,000 mL, IV, Routine, 150 mL/hr
Comments: Start if potassium levels are 3.5-5.3 mmol/L AND patient receiving D5 1/2 NS fluids. Ensure current fluid being infused is discontinued.
- ☐ 1/2 NS with KCl 20 mEq (IVS)*
Sodium Chloride 0.45%
1,000 mL, IV, Routine, 150 mL/hr
Comments: Start if potassium levels are 3.5-5.3 mmol/L, AFTER patient has received 3 liters of fluid total and patient still on 1/2 NS fluids. Ensure current fluid being infused is discontinued.
- potassium chloride
- R insulin R infusion (IVS)*
Sodium Chloride 0.9%
100 mL, IV, Routine, titrate, unit/kg/hr
Comments: (Conc: 1 unit/mL) If Potassium Level is less than 3.5 mmol/L, administer Potassium Chloride 40 mEq bolus IV over 4 hours PRIOR to starting the insulin drip. If initial blood glucose is greater than 400 mg/dL, give patient a BOLUS of 0.1 units/kg of Regular insulin PRIOR to starting the insulin drip (MAX BOLUS: 10 units). Initiate Insulin drip at 0.1 unit/kg/hr (MAX of 15units/hr). Goal glucose reduction of 50-100 mg/dL per hour. If glucose drops by less than 50 mg/dL in an hour, INCREASE drip rate by 0.05 unit/kg/hr. If glucose drops by greater than 100 mg/dL in an hour, DECREASE drip rate by 0.05 units/kg/hr. When glucose reaches less than 250 mg/dL, decrease Insulin drip rate BY HALF. The Insulin drip should be continued until DKA resolves, the patients is eating and subcutaneous insulin has been started. When subcutaneous insulin is ordered, the insulin drip should be continued for 1.5 hours after subcutaneous insulin has been administered and then the drip STOPPED to ensure adequate insulin levels.
- insulin regular (for IV set)
- R Nursing Communication
DKA Treatment Phase One: If potassium levels are 3.5-5.3 mmol/L, AFTER patient has received 3 liters of fluid per bolus plan, then discontinue fluid being infused and START order for same fluid with 20 mEq of potassium chloride at 150 mL/hr.





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R Nursing Communication

DKA Treatment Phase One: Hold insulin drip if blood glucose is less than 100 mg/dL. Notify MD.

Medications

If initial blood glucose is greater than 400 mg/dL, order BOLUS below.(NOTE)*

- ☐ insulin regular
0.1 units/kg, Injection, IV Push, once, Routine, BOLUS
Comments: IF serum glucose is greater than 400 mg/dL, Give prior to starting insulin drip.
(MAX BOLUS: 10 units)

R .DKA Management Ref. Text

See Reference Text, N/A, N/A, Routine

Order STAT Potassium Chloride bolus if Potassium is less than 3.5 mmol/L. Potassium Chloride bolus should be completely administered PRIOR to starting the insulin drip.(NOTE)*

- ☐ potassium chloride
40 mEq, IV Piggyback, IV Piggyback, once, STAT, (infuse over 4 hr), Bolus
Comments: If Potassium is less than 3.5 mmol/L, give prior to starting insulin drip.

Order below for Potassium less than 4 mmol/L during administration of insulin drip.(NOTE)*

- ☐ potassium chloride
40 mEq, IV Piggyback, IV Piggyback, q4h, PRN Hypokalemia, (for 0, (infuse over 4 hr)
Comments: Give if potassium level is less than 4 mmol/L

Order below if Magnesium is less than 1.8 mg/dL(NOTE)*

- ☐ magnesium sulfate
2 g, IV Piggyback, IV Piggyback, q8h, PRN Hypomagnesemia, (infuse over 2 hr)
Comments: During administration of insulin drip, give if magnesium level is less than 1.8 mg/dL

Consults/Notifications/Referrals

- ☒ Notify Physician-Continuing
Notify: MD, Notify For: Notify MD for potassium less than or equal to 3.5 mmol/L., T;N

DKA Treatment Phase TWO

Non Categorized

Physicians should target an Accucheck goal of 150 - 250 mg/dL until DKA resolves (i.e., CO2 is greater than 18, and the Anion Gap is less than 12). After resolution of DKA, an Accucheck goal of 140 - 180mg/dL should be targeted.(NOTE)*

Continuous Infusion

R Nursing Communication

DKA Treatment Phase TWO: Once Accucheck drops to less than 250mg/dL DC 0.45% NS and start D5% with 0.45% NS at 150 mL/hr

R Nursing Communication

DKA Treatment Phase TWO: Hold insulin drip if blood glucose is less than 100 mg/dL. Notify MD.

R Nursing Communication

DKA Treatment Phase TWO: When transitioning from IV to Subcutaneous insulin, continue insulin drip for 1.5 hours after beginning subcutaneous insulin then STOP the drip to ensure adequate insulin levels.

- ☐ D5 1/2NS
1,000 mL, IV, Routine, 150 mL/hr
Comments: May start once Accucheck drops to less than 250 mg/dL.

- ☐ insulin R infusion (IVS)*
Sodium Chloride 0.9%
100 mL, IV, Routine, units/hr
Comments: (Conc: 1 unit/mL) If Potassium Level is less than 3.5 mmol/L, administer Potassium Chloride 40 mEq bolus IV over 4 hours PRIOR to starting the insulin drip. If initial blood glucose is greater than 400 mg/dL, give patient a BOLUS of 0.1 units/kg of Regular insulin PRIOR to starting the insulin drip (MAX BOLUS: 10 units). Initiate Insulin drip at 0.1 unit/kg/hr (MAX of 15units/hr). Goal glucose reduction of 50-100 mg/dL per hour.
If glucose drops by less than 50 mg/dL in an hour, INCREASE drip rate by 0.05 unit/kg/hr.
If glucose drops by greater than 100 mg/dL in an hour, DECREASE drip rate by 0.05





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units/kg/hr. When glucose reaches less than 250 mg/dL, decrease Insulin drip rate BY HALF.

The Insulin drip should be continued until DKA resolves, the patients is eating and subcutaneous insulin has been started.

When subcutaneous insulin is ordered, the insulin drip should be continued for 1.5 hours after subcutaneous insulin has been administered and then the drip STOPPED to ensure adequate insulin levels.

insulin regular (for IV set)
100 units

Consults/Notifications/Referrals

Physicians should target an Accucheck goal of 150-250mg/dL until DKA resolves (ie CO₂ is > 18, and the Anion Gap is < 12). After resolution of DKA, an Accucheck goal of 140-180mg/dL should be targeted.(NOTE)*

- ☒ Notify Physician-Once
Notify: MD, Notify For: Call MD for subcutaneous insulin orders when DKA resolves (i.e., CO₂ is greater than 18, and the Anion Gap is less than 12) and patient is able to eat., T;N
Comments: To transition from IV to subcutaneous insulin, continue the insulin drip for 1.5 hours after subcutaneous has begun and then STOP the drip to ensure adequate insulin levels.

- ☒ Notify Physician-Continuing
Notify: MD, Notify For: If blood glucose is less than 100 mg/dL., T;N

Date

Time

Physician's Signature

MD Number

*Report Legend:

DEF - This order sentence is the default for the selected order

GOAL - This component is a goal

IND - This component is an indicator

INT - This component is an intervention

IVS - This component is an IV Set

NOTE - This component is a note

Rx - This component is a prescription

SUB - This component is a sub phase, see separate sheet

R-Required order

