attach patient label here

Methodist Le Bonheur Healthcare

Physician Orders ADULT

ICU Glycemic Control Protocol Orders

[**R**] = will be ordered
T= Today; N = Now (date and time ordered)
Height: _____cm Weight: _____kg

Allergies: [ ] No known allergies
[ ]Medication allergy(s):
[ ] Latex allergy [ ]Other:

[ ]	NOTE: All patients must be in ICU and have a blood glucose greater than 150 mg/dL X 2 measurements, or ONE measurement greater than 180 mg/dL for Cardiovascular Surgery patients. This is NOT for treatment of DKA or Hyperglycemic Hyperosmolar Syndrome (HHS).	
[R]	ICU Glycemic Control Protocol Initiate	T;N
	Patient Care	
[ ]	Nursing Communication	T;N, ICU Glycemic Control Protocol: Contact Pharmacy to remove insulin from TPN with next bag change
[R]	Nursing Communication	T;N, ICU Glycemic Control Protocol: Change Insulin drip every 24 hours
[R]	Nursing Communication	T;N, ICU Glycemic Control Protocol: Comment: Discontinue ICU Glycemic Control protocol when patient is transferred from ICU, initiate standard sliding scale protocol unless otherwise indicated by MD. If patient eating an oral diet, begin BG q4hrs with Sliding Scale.
[R]	Nursing Communication	T;N, ICU Glycemic Control Protocol: Call MD for IV fluids containing dextrose (if patient not receiving TPN or enteral feedings) when blood glucose falls below 200 mg/dL and continue until insulin infusion is discontinued.
[R]	Whole Blood Glucose Nsg (Bedside Glucose Nsg)	Routine, q1h(std), ICU Glycemic Control Protocol: Check bedside glucose result before starting insulin infusion. Change to q2h when blood glucose has remained in goal range for 4 hours. If blood glucose remains in goal range for 4 consecutive q2h results (8 hours), may change bedside glucose to q4h. Resume q1h bedside glucose any time the infusion is stopped and restarted, for any infusion rate change or change in nutrition infusion rates.
	Continuous Infusions	
[ ]	Dextrose 5% in Water	1,000 mL, IV, Routine, Comment: For use with ICU Glycemic Control Protocol. Begin when blood glucose falls below 200 mg/dL and continue until insulin infusion is discontinued. Infuse over _____,
[ ]	Dextrose 10% in Water (D10W)	1,000 mL, IV, Routine, Comment:For use with ICU Glycemic Control Protocol. Begin when blood glucose falls below 200 mg/dL and continue until insulin infusion is discontinued. Infuse over _____
[ ]	Dextrose 5% with 0.45% NaCl (D5 1/2NS)	1,000 mL, IV, Routine, Comment: For use with ICU Glycemic Control Protocol. Begin when blood glucose falls below 200 mg/dL and continue until insulin infusion is discontinued. Infuse over _____
[R]	ICU Glycemic Control Insulin Infusion	100 units / 100 mL, IV, T;N, titrate, Comment: see Reference text for titration parameters. Hold Insulin if patient is out of ICU for a procedure. Restart upon return to ICU. Hold insulin infusion if TPN or continuous enteral feeds are stopped for any reason unless the patient is receiving another source of exogenous glucose (D5W, D10W). Resume insulin infusion when TPN/enteral feedings are resumed. Resume insulin at the previous rate if TPN/enteral feedings are resumed at the previous rate. If TPN/enteral feedings are resumed at a different rate start insulin protocol from the beginning.
[R]	.ICU Glycemic Control Protocol ref text	See Reference Text, N/A, N/A, Routine
	Medications	
[ ]	insulin regular	_____ units, Injection, IV Push, once, BOLUS, Comment: See ICU Glycemic Control Protocol reference text for dose
[ ]	glucose (Dextrose 50% in water Syringe)	25 mL, Injection, IV Push, prn, PRN Other, specify in Comment, Routine, Comment: As needed per ICU Glycemic Control Protocol
[ ]	glucose (Dextrose 50% in water Syringe)	50 mL, Injection, IV Push, prn, PRN Other, specify in Comment, Routine, Comment: As needed per ICU Glycemic Control Protocol
	Laboratory	
[R]	Potassium Level	STAT, T;N, once, Type: Blood, Nurse Collect, Comment: Obtain before starting ICU Glycemic Control Infusion
	Consults/Notifications	
[ ]	Notify Physician-Once	T;N, Notify: Physician, Stat serum potassium (K+) before starting insulin infusion, if no recent K+ available. If K+ is <3.3 (if less than 2.8 if on HYPOTHERMIA protocol) call MD for K+ replacement orders before starting insulin infusion.
[ ]	Consult Clinical Pharmacist	Start at: T;N, Special Instructions: D/C all previous insulin orders (including insulin in TPN) and antidiabetic medications. Patient is on ICU Glycemic Control Protocol, verify patient is receiving a source of exogenous glucose, (tube feeds,D5,TPN) prior to starting insulin infusion.

Date **Time** **Physician's Signature** **MD Number**

ICU Glycemic Control Reference Text

RESTRICTION: Patients must be in an intensive care unit

PHYSICIAN

1) Order " ICU Glycemic Control Protocol."
2) Patients must have a blood glucose (BG) greater than 150 mg/dl x 2 measurements
or ONE BG measurement greater than 180 mg/dL for Cardiovascular Surgery patients
3) This is NOT for the treatment of diabetic ketoacidosis (DKA) or Hyperglycemic hyperosmolar syndrome (HHS).

PHARMACIST

1) D/C all previous insulin orders (including insulin in TPN) and antidiabetic medication orders.
2) Verify patient is receiving some source of exogenous glucose (eg tube feeds, D5, TPN) prior to initiating infusion.
3) Standard IV Insulin Infusion: 100 units Regular Human Insulin/100 ml NS (Final conc: 1 unit/ml)

NURSING

1) **If patient has insulin in TPN, contact Pharmacy to remove insulin from TPN with next bag change.**
2) Stat serum potassium (K+) before starting insulin infusion, if no recent K+ available. If K+ is <3.3 (**less than 2.8 if on HYPOTHERMIA protocol**) call MD for K+ replacement orders before starting insulin infusion.
3) Change insulin drip every 24 hours.
4) Check bedside BG before starting infusion and Q1H. (ONLY utilize venous draw for BG monitoring in patient on HYPOTHERMIA protocol)

- Change to Q2H accuchecks when BG has remained in the goal range for 4 hours.
- If BG remains within goal range for 4 consecutive Q2H accuchecks (8 hours), may decrease accuchecks to Q4H.

5) Resume Q1H accuchecks any time the infusion is stopped & restarted, for any infusion rate change, or change in nutrition infusion rates.
6) Document infusion rate and BG values on flow sheet.
7) Call MD for Dextrose containing IV fluid orders (if patient not receiving TPN or enteral feedings) when blood glucose falls below 200 mg/dl and continue until insulin infusion is discontinued.
8) HOLD insulin infusion if TPN or continuous enteral feeds are stopped for any reason unless the patient is receiving another source of exogenous glucose. (eg D10W, D5W)

- Resume insulin infusion when TPN/enteral feedings are resumed.
- Resume insulin at the previous rate if TPN/enteral feedings are resumed at the previous rate.
- If TPN/enteral feedings are resumed at a different rate check BG 1 hr after feedings are resumed and start insulin protocol from the beginning.

9) HOLD insulin infusion if patient is out of the ICU for a procedure. Restart upon return to ICU.
10) Discontinue ICU Glycemic Control protocol when:

- Patient is transferred from the ICU and initiate standard insulin sliding scale orders unless otherwise indicated by MD.
- Patient is eating an oral diet, begin accuchecks Q4H w sliding scale.

Target range: serum glucose 100 to 150 mg/dL

Initiating the Insulin Infusion:
ICU Bed
Blood Glucose greater than 150mg/dl for two measurements

OR ANY Blood Glucose greater than 180 mg/dl for Cardiovascular Surgery patients

Glucose:	151-190 mg/dL	191-240 mg/dL	241-300 mg/dL	301-400 mg/dL	**greater** than 400 mg/dL
IVP Bolus:	2 units	4 units	6 units	10 units	14 units and Call MD
Initial Rate:	1 units/hr	2 units/hr	3 units/hr	4 units/hr	5 units/hr

Adjust Insulin Infusion rate as follows:

Glucose	**Interventions**
less than or equal to 60 mg/dL	DC infusion and give 50mL D50 IVP: Call MD and recheck glucose in 15 min. 1. If glucose remains less than 60 mg/dL, repeat 25 mL D50 IVP every 15 minutes until glucose is greater than 100 mg/dL. 2. When glucose is greater then 125 mg/dL, restart infusion at 1/2 the previous rate (rounded to the nearest whole unit.
61-99 mg/dL	D/C infusion and recheck glucose in 1 hr. 1. If glucose remains less than 80 mg/dL, give 25 mL D50 IVP every 15 minutes until glucose is greater than 100 mg/dL and call MD. 2. When glucose is greater than 125 mg/dL, restart insulin infusion at 1/2 the previous rate (rounded to the nearest whole unit).

Glucose	**Interventions**
Target Range	
100-150 mg/dL	1. No change 2. If glucose continues to decrease greater than 20 mg/dL within the goal range; decrease rate by 50% (1/2 the previous rate, rounded to the nearest whole unit)

Glucose	**Titration**
151-180 mg/dL	Increase infusion by 1 unit/hr
181-210 mg/dL	Increase infusion by 2 unit/hr
211-250 mg/dL	Increase infusion by 3 unit/hr
251-290 mg/dL	Increase infusion by 4 unit/hr
291-340 mg/dL	Increase infusion by 5 unit/hr
341-400 mg/dL	Increase infusion by 6 unit/hr
greater than 400mg/dL**	Increase infusion by 7 unit/hr

****If greater than 400mg/dL after 1 hour - CALL MD**

Special Considerations/Interventions

1. If glucose drops by more than 100 mg/dL from previous reading at anytime, decrease rate by 50% (round to the nearest whole unit) and recheck glucose in 1 hr.

2. If glucose drops by more than 50 mg/dL from previous reading at anytime, decrease rate by 25% (round to the nearest whole unit) and recheck glucose in 1 hr.