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Pharmacist's Letter
Hospital

Safely Manage Insulin Infusions for Hyperglycemia in the ICU

You'll continue to see emphasis on **managing hyperglycemia in the ICU**...due to updated guidelines from the Soc of Critical Care Medicine.

We know that stress in critically ill patients can lead to hyperglycemia...which can increase mortality.

Be familiar with the latest critical care guidance to safely manage insulin in patients with hyperglycemia...and limit HYPOglycemia.

Consider treating after glucose is 180 mg/dL or higher for 2 consecutive checks.

Review the MAR first for IV infusions diluted in dextrose. Switching the diluent to saline...if compatible...may solve the problem.

Move to suggesting a titrated regular insulin infusion in unstable patients...volume overload and poor perfusion may impair subcutaneous insulin absorption. And insulin infusions can tailor control of variable glucoses caused by inflammation, vasopressors, etc.

In general, titrate insulin to the new guideline's widened glucose goal of 140 to 200 mg/dL. Lower goals may lead to severe hypoglycemia.

But don't be surprised to see lower targets in certain cases...such as 110 to 140 mg/dL for patients at high risk of HYPERglycemia (surgical or cardiac ICU patients, etc), but at low HYPOglycemia risk.

Standardize these glucose goals and insulin titrations by creating or updating insulin infusion protocols in your EHR. The new guidelines advocate adding decision support tools (rate calculations, etc)...they help achieve better glucose control with less hypoglycemia.

Incorporate glucose monitoring in the protocol. Suggest glucose labs at least hourly to start...since insulin can rapidly change levels.

Obtain these labs even if a new patient is wearing their own home continuous glucose monitor (CGM). Point out that the CGM can stay in place...but there aren't much data for relying on CGMs alone in the ICU.

Prepare for questions about spacing out glucose checks...to decrease workload for nurses. Consider spacing labs to every 2 hours only if consecutive glucose values are stable within target range.

Also ensure hypoglycemia can be treated promptly. Confirm all insulin infusions are paired with prn hypoglycemia reversal orders...nurse instructions, IV dextrose, IM glucagon...before verification.

And prepare regular insulin infusions in the pharmacy whenever possible to allow for double checks. Or use manufactured premix insulin bags to avoid compounding mistakes and allow stocking on patient units.

Use our resource, Hyperglycemia in the Hospital, to guide insulin therapy in other hospital areas...including non-ICU settings.

Key References:

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