Perioperative Diabetes Medication Management

The Problem
Pre-operative diabetes medication management is confusing for many anesthesia providers and can vary greatly based on the type, timing and indication for medication or insulin. Patients often came to the holding area with uncontrolled glucose levels because of inappropriate medication management pre-operatively leading to treatment, delay or cancelation of OR cases.

Aim/Goal
The goal of the project was to identify what medications/insulin patients were taking preoperatively, who was providing the instructions for medication/insulin, and whether the changes made were appropriate/correct and clear for the patient. In addition the PI analyzed pre-op and post-op blood glucose (BG) levels.

The Team
Principal Investigator: Rebecca Longo, ACNP-BC, CDE
East Campus PACU nursing staff, MaryAnn Vann, MD (anesthesia advisor)

The Interventions
- A random group of patients with diabetes having surgery on the East Campus were surveyed preoperatively using a simple survey asking:
  - Which diabetes medications does the patient usually take?
  - Who provided instructions regarding changes to medication regimen?
  - What changes were made to usual medication regimen?
  - Were the instructions clear to the patient?
  - Pre-op and Post-op BG
- The data collected from these surveys indicated that patients were commonly receiving inappropriate instructions from the various services they were consulting.
- The Diabetes Medication Management guideline was developed for the Anesthesia Department
- Intraoperative Insulin Pump Guideline was developed in conjunction with hospital-wide Insulin Pump Policy
- Preoperative nurses, nurse practitioners and MDs were educated on the new guidelines
- Guidelines were provided for hyperglycemia/hypoglycemia treatment in the perioperative period
- Patients then re-surveyed to assess the effect intervention.

The Results/Progress to Date

Lessons Learned
- The average BG pre-operatively decreased from 166 mg/dL pre-intervention to 151 mg/dL post-intervention. The average post-operative BGs decreased from 162 mg/dL pre-intervention to 154 mg/dL post-intervention. The majority of BGs outside of goal BGs could be linked to improper instructions or patients not following instructions.
- Patients received correct instructions more frequently post-intervention.
- Pre-Admission Testing providers benefitted from education about the implementation of new guidelines. It was helpful for the PI to be available for side consults for real-world application of the guidelines.
- Many patients do not understand the action of their diabetes medications and insulin; the preoperative time is a valuable time for patient education.
- Fear of hypoglycemia was a frequent barrier to proper handling of diabetes medications by both patients and providers. Proper patient education of hypoglycemia treatment with clear liquids could be helpful.

Next Steps
Providers and patients should be properly educated on appropriate medication adjustments to promote good glycemic control during the perioperative period. Patients on insulin are at particular risk for glucose excursions and could benefit from more direct interventions pre-operatively.

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