

Guideline and adherence evaluation for the pre-operative management of adult patients with type II diabetes

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1. Purpose:

- a. There is a clear association between elevated blood sugars in the preoperative period and adverse outcomes including post-operative complications such as increased hospital length of stay and increased mortality in surgical patients. Many of these diabetic patients are managed with long acting, 70/30 mixed, or NPH insulins and require special management of their insulin(s) in the perioperative period. An evaluation of this academic medical center's guidelines will be completed to determine the appropriate use and adherence to said guidelines. The results of this evaluation will guide education to providers and pharmacists if needed, and determine if changes to the guidelines need to be made.

2. Methods

- a. Study design: Retrospective chart review
- b. Time frame of review: January 1, 2020 – December 31, 2020
- c. Inclusion Criteria
 - Type II diabetic patients undergoing a procedure involving sedation/anesthetic at Main or Indian Creek Campus
 - On long acting, 70/30, or NPH insulin as part of home medication regimen
 - Seen in Pre-Operative Assessment Clinic prior to procedure
 - Patients both at Main and ICC campuses
- d. Exclusion Criteria
 - Patients that are on any kind of insulin other than the 3 previously listed
 - Type I diabetic patients and/or patients using insulin pumps
 - Patients < 18 years of age
 - Patients on Tresiba BID
 - Patients having bowel prep prior to surgery
- e. Data to Collect
 - Each chart will be reviewed for patient demographics
 - MRN, gender, age
 - Home insulin regimen: long acting, 70/30, or NPH and their home dosing regimens
 - Appropriate recommendations of insulin hold/reduced dose parameters from pharmacists in PAC
 - Blood glucose(s) prior to procedure start time
 - Insulin given prior to procedure (Y/N)

- Type, dose, and route (IV/SQ) of insulin given prior to procedure start time, if any
- Cancellation of procedure due to elevated blood glucose (Y/N)

3. Results

- a. Of the 257 patients who are Type II diabetic on long-acting, 70/30, or NPH insulin, underwent a procedure involving sedation or anesthetic between January 1, 2020 and December 31, 2020, and were seen in the Pre-Operative Assessment Clinic at The University of Kansas Health System prior to their procedure, 53 patients had a blood glucose > 180 mg/dL upon arrival to the hospital before their procedure (20.6%). The average age of patients in this study is 64 years old, with a range of 25 to 91 years old. 9 patients received insulin prior to the start of surgery, with 7 of the 9 of those patients having a blood glucose > 180 mg/dL prior to the start of surgery (13.2%). Of those who received insulin prior to their procedure, 4 (44.4%) patients received regular insulin, 4 received aspart (44.4%), and 1 received NPH (11.1%). Of the 7 patients who had insulin administered for blood glucose > 180 mg/dL prior to surgery, 2 patients were given a dose of insulin that followed the established TUKHS policy (28.6%). PAC pharmacists gave appropriate written preoperative administration recommendations based on TUKHS's established policy to 234 of 257 patients (91%). 7 of 53 patients (13.2%) with blood glucose > 180 mg/dL were given instructions outside the perioperative diabetes guidelines.

4. Conclusion

- a. Results of this study will be used by the TUKHS PAC to educate staff regarding the recommendations currently in place for the appropriate use of home insulin in the pre-operative period. This study may lead to modifications of the current guideline in place at TUKHS and allow for education of pharmacists and providers to provide quality care regarding the management of adult patients with diabetes undergoing a procedure.