

Perioperative Point of Care (POC) Glucose Management: A Collaborative Approach

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Background Information: There is substantial evidence demonstrating links between perioperative hyperglycemia and adverse clinical outcomes such as surgical site infection, increased rate of myocardial infarction and stroke in patients with diabetes. The stress of surgery and anesthesia also alters the homeostasis between hepatic glucose production and utilization of glucose in peripheral tissues. Preoperative carbohydrate loading with Enhanced Recovery After Surgery (ERAS) was found to decrease the catabolic state during fasting, increase insulin sensitivity and decrease the incidence of postoperative hyperglycemia. All patients on ERAS pathways at our facility have orders for preoperative glucose testing. Routine glucose testing on patients not on ERAS pathways was not a standard prior to this project, leading to inconsistent preoperative glucose testing of ERAS patients. This project aimed to improve testing in ERAS patients by expanding point of care (POC) glucose testing of surgical patients. Prior to March 2022, the compliance average rate POC glucose performed in patients on ERAS pathway was 55%.

Objectives of Project: The goal of this project was to improve preoperative phase of care POC glucose testing compliance by 20% in ERAS patients from period March to July 2022.

Process of Implementation: Education on placing orders for POC glucose testing were disseminated to surgeons and surgery clinics. Macros in electronic health records were created providing reminders for anesthesia providers to test glucose. Additional docking stations and glucometers were obtained and placed in the preoperative and Recovery areas. POC glucose testing was extended to non-ERAS surgical patients, with weekly data shared to key stakeholders for follow up.

Statement of Successful Practice: The compliance of POC glucose testing for ERAS increased from 55% to 79%. Overall compliance of ERAS and non-ERAS surgical patients achieved an average of 89%. Out of total population checked, 80% of patients did not have diabetes, 20% with diabetes diagnosis. 18% of patients who were hyperglycemic in preop did not have diabetes diagnosis and would not have been tested prior to this project.

Implications for Advancing the Practice of Perianesthesia Nursing: Incidence of hyperglycemia is common in surgical patients with and without history of diabetes. Standardizing the process of POC glucose testing in surgical patients decreased inconsistency which enables early detection and implementation of intervention.