

OBSERVATIONAL STUDY OF A NOVEL PERIOPERATIVE GLUCOSE CONTROL PROTOCOL IN PATIENTS UNDERGOING BARIATRIC SURGERY



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BACKGROUND

- Immediate physiologic changes occur with bariatric surgery especially with glucose metabolism
- In 2020, noted a high incidence of postoperative hyperglycemia requiring insulin infusions, endocrinology consultations—prolonging length of stay
- PONV impacts patient experience and length of stay; ondansetron is not effective in comparison to dexamethasone which is highly effective but has been linked to hyperglycemia
- Our team created a comprehensive perioperative glucose control protocol including novel dexamethasone-glargine co-administration

STUDY AIM

Assess the feasibility and safety of a novel perioperative glucose control protocol with glargine-dexamethasone co-administration

STUDY DESIGN

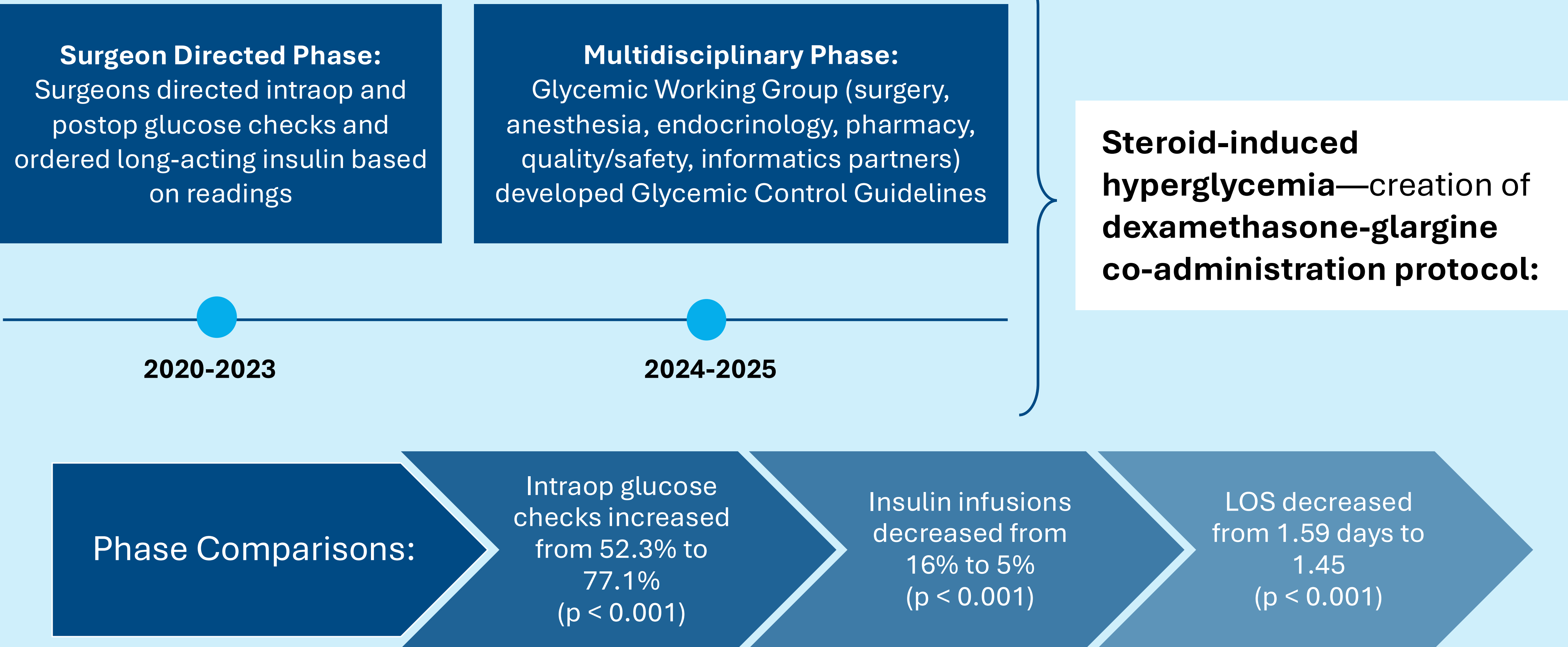
Quality Improvement: Developed a periop glucose control protocol that shifts from insulin infusion to long-acting insulin

Retrospective Review: All patients who underwent bariatric surgery during two phases:
1) Surgeon directed glycemic control (2020-2023)
2) Multidisciplinary protocol (2024-2025)

- **Primary Outcome (safety):** Rate of hypoglycemia (glucose < 70) intraop and postop (24 hours post surgery)
- **Secondary Outcomes:** Rate of hyperglycemia (glucose > 180), insulin infusions, length of stay, cadence of glucose measurement

Statistical Analysis: Descriptive patient demographics, incidence of hypoglycemia and hyperglycemia with Fisher's exact test of and Mann-Whitney for LOS comparisons

QUALITY IMPROVEMENT INITATIVE



GLARGINE-DEXAMETHASONE CO-ADMINISTRATION PROTOCOL

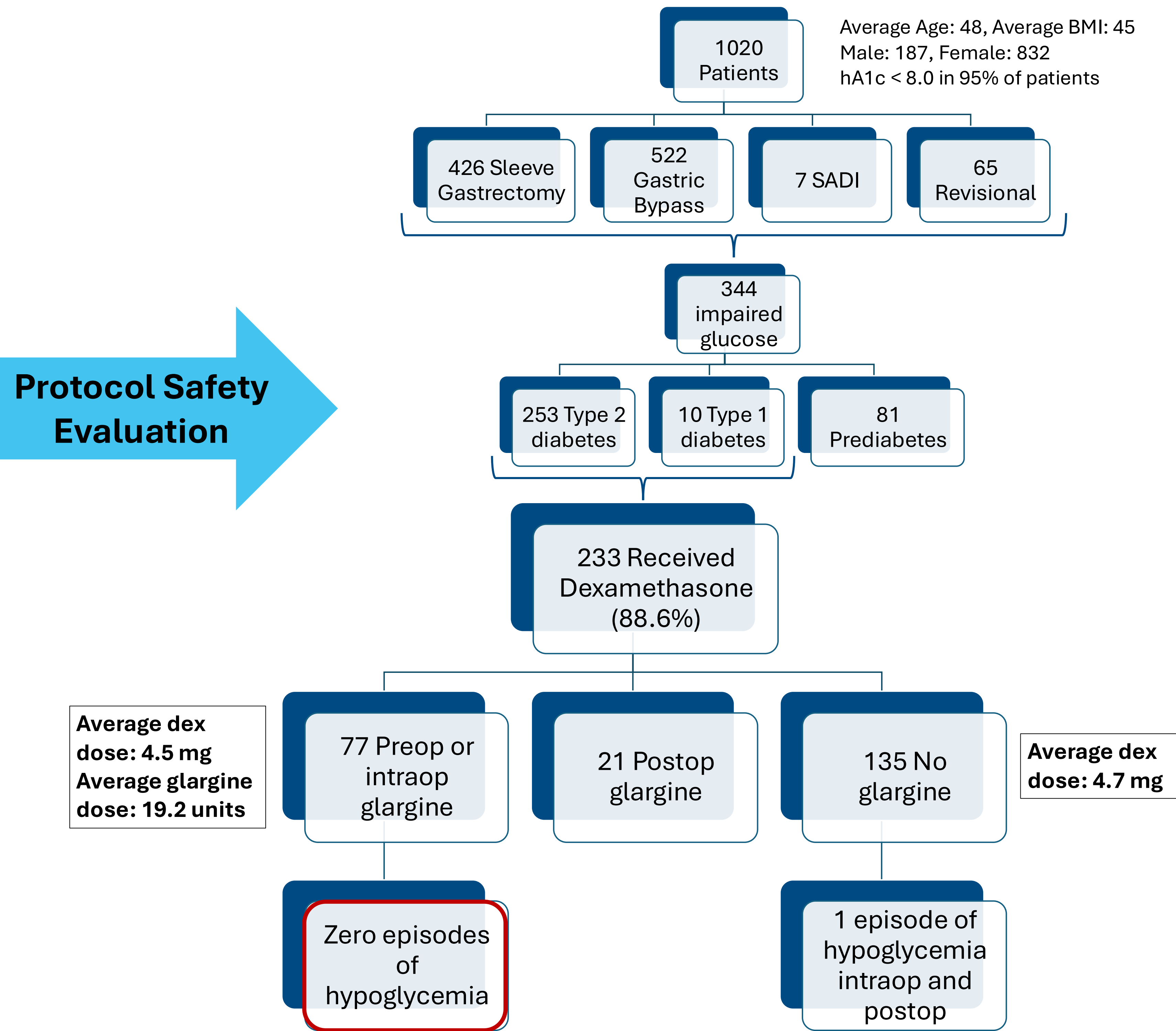
Patients with diabetes on insulin received weight/dexamethasone dose/glucose measurement-based glargine co-administration:

Type 2 Diabetes on insulin: glargine-dexamethasone co-administration	Dexamethasone Dose	Admission Blood Glucose 100-140	141-180	> 180
	4 mg	45-64 kg: 6 units glargine 65-84 kg: 8 units glargine > 84 kg 11 units glargine	45-64 kg: 7 units glargine 65-84 kg: 10 units glargine > 84 kg 13 units glargine	45-64 kg: 8 units glargine 65-84 kg: 12 units glargine > 84 kg 15 units glargine
	> 4 mg	45-64 kg: 8 units glargine 65-84 kg: 12 units glargine > 84 kg 14 units glargine	45-64 kg: 10 units glargine 65-84 kg: 14 units glargine > 84 kg 16 units glargine	45-64 kg: 12 units glargine 65-84 kg: 16 units glargine > 84 kg 18 units glargine

Patients with glucose > 180 in preop also received short acting insulin based on blood glucose, total daily insulin dose and BMI

Piloted in surgical non bariatric patients ($n = 34$), found to decrease the proportion of patients requiring correctional insulin from 93% to 73.5% without any episodes of hypoglycemia

RESULTS: Glargine-Dexamethasone Co-Administration



Secondary Outcomes:
Intraop/Postop hyperglycemia—no difference in glargine+dex vs. dex alone
Intraop insulin infusions—no difference
POD1 insulin infusions—decreased rate for glargine+dex (23%) vs. dex alone (36%) $p=0.04$
LOS—no difference

CONCLUSIONS

- Multidisciplinary approach to quality improvement in perioperative glucose control is effective at increasing the cadence of glucose checks and decreasing rate of insulin infusions and length of stay
- Glargine-dexamethasone co-administration for patients with diabetes is **feasible and safe**
- Ongoing work is needed to optimize secondary outcomes (hyperglycemia)