## **Glycemic Control in Hospitalized Patients Receiving Enteral Nutrition**

Author: Jayden Flores, Pharm.D. Candidate Mentor: Carrie Vogler, Pharm. D., BCPS

## ABSTRACT

**Background** Artificial nutrition is sometimes necessary for patients that cannot tolerate oral intake of food or nutrition, and one of the forms of delivery is known as enteral nutrition, or delivery via nasogastric tube or ostomies into the digestive system. About 30% of patients experience hyperglycemia while receiving enteral nutrition. We sought to determine whether patients were receiving adequate glycemic control while receiving enteral nutrition during their inpatient visit.

**Methods** We conducted a retrospective, single-center chart review of hospitalized patients on enteral nutrition with a blood glucose target range of 70 mg/dL to 180 mg/dL. The statistics used to analyze the data will be descriptive, and there is a sample of about 60 patients. Statistical analysis was performed, using P-values calculated through t-tests, Mann-Whitney tests, and Fisher's exact test where appropriate. Patients' glucose levels and insulin given were observed from days 2, 3, and 5 of their respective visits. The primary outcome was to determine the effectiveness of glycemic control for those receiving enteral nutrition while hospitalized. Secondary outcomes include identifying variables that predict hypo- or hyperglycemia while on enteral nutrition and evaluating the referral process to endocrinology for glucose management.

**Results** After chart review, the study included 58 patients that received enteral nutrition from August 2020 to August 2023. Of these patients, 22% experienced a hyperglycemic event on day 3, while 23% experienced a hyperglycemic event on day 5, showing that the majority of patients' glycemic control regimen was appropriate and effective. Statistically significant factors included age (P=0.005), SCr (P=0.04), diabetes (P=0.001), home insulin use (P=0.047), insulin before enteral nutrition (P=0.03), and endocrine referral (P= 0.009). For patients that fit these parameters, more monitoring may be required to better maintain their glycemic control.

**Conclusions** This review of hospitalized patients on enteral nutrition showed that there are improvements that can be made in terms of glycemic control, as there are not many parameters for this patient population that have been established. Most patients observed were maintained at a range of 70-180 mg/dL for days 2, 3, and 5 of their visits, which suggests that current sliding scale insulin regimens are being used appropriately and effectively, but there may be reason to test glucose less frequently if they are well-maintained. Future studies can explore varying insulin regimens, and the types of insulins used. Less frequent glucose checks for select patients on EN may be possible if glycemic control is maintained. A larger study would likely lead to better predictability for hyperglycemic events as well as endocrinology referrals for this population.