Evaluation of Hospital Length of Stay in Patient with DKA Treated with EndoTool

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INTRODUCTION

- Hypoglycemia is an economic burden for health systems and can lead to worse patient outcomes
- EndoTool IV (ETIV) is an insulin dosing algorithm (IDA) that utilizes patient factors for insulin titration
- ETIV is theorized to decreased rates of hypoglycemia and hospital length of stay (LOS)

METHODS

- Retrospective review conducted of glycemic data from two dashboards: ETIV and diabetic ketoacidosis (DKA)
- ETIV LOS dashboard data collected from January 2022 through February 2024 and DKA dashboard data collected from January 2023 through February 2024
- Difference in comparison dates due to DKA dashboard collecting data for 1 calendar year intervals
- Excluded patients <18 years old, undergoing hemodialysis, or with LOS >14 days
- Defined hypoglycemia as blood glucose <70 mg/dL, severe hypoglycemia as <45 mg/dL
- Compared hospital LOS and hypoglycemia rates for patients with DKA treated with ETIV to patients with DKA treated with standard insulin infusion protocol

RESULTS

- A total of 354 patients captured on the ETIV dashboard met inclusion criteria
- 189 (53.3%) patients were treated with ETIV and 165 (46.6%) patients were not treated with ETIV
- LOS was shorter in the ETIV group (3.95 vs. 4.40 days) translating to a cost difference of $12,000,000 between the two groups
- A total of 277 patients were captured on the inpatient glycemic dashboard
- 155 (41.50%) patients were treated with ETIV and 162 (58.50%) were treated with standard insulin infusion
- Patients treated with ETIV had lower incidences of hypoglycemia and severe hypoglycemia.

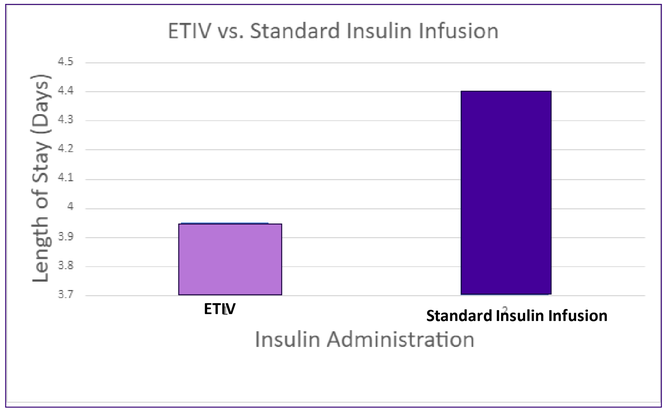

Figure 1. Hospital length of stay between the ETIV and standard insulin infusion groups from the ETIV dashboard

RESULTS (CONT'D)

		Events of Hypoglycemia	
	No. Patients	Hypoglycemia	Severe hypoglycemia
ETIV	115	10	1
Standard infusion	162	350	55
Total	277	360	56

Table 1. Hypoglycemia and severe hypoglycemia events from the DKA dashboard

DISCUSSION

- We conclude that patients treated with ETIV have decreased LOS, hypoglycemia, and severe hypoglycemia rates
- ETIV results in softer landing to achieve glycemic targets, leading to lower incidence of hypoglycemia from less aggressive insulin titration
- ETIV results in significant cost savings for hospital systems
- Future directions for research will focus on integration of continuous glucose monitor (CGM) data into the electronic medical record coupled with ETIV use

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