

The Use of Insulin Infusions for Severe Hypertriglyceridemia in an Acute Care Setting

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INTRODUCTION

- Hypertriglyceridemia (HTG) affects approximately 16.2% of the adult population.¹
- Severe HTG is characterized by elevated plasma triglyceride (TG) levels >500mg/dL and is associated with an increased risk of pancreatitis, a potentially fatal complication.^{2,4}
- HTG can result from a variety of different causes including genetic mutations, lifestyle factors and certain medications.
- The American College of Cardiology guidelines suggest statins, a low-fat diet, omega-3 fatty acids, and fibrates for the management of severe HTG.²
- Currently, there are no guidelines on the treatment of acute pancreatitis secondary to severe HTG in the acute care setting, but limited literature suggests the use of insulin infusions for these patients.

OBJECTIVES

- The purpose of this study is to review patients treated with an insulin infusion for the treatment of severe HTG in an acute care setting.
- **Primary Outcome:**
 - Efficacy of insulin infusions for the treatment of severe HTG
- **Secondary Outcome:**
 - Time required to decrease TG <500mg/dL
 - Adverse effects (hypoglycemia, hypokalemia)

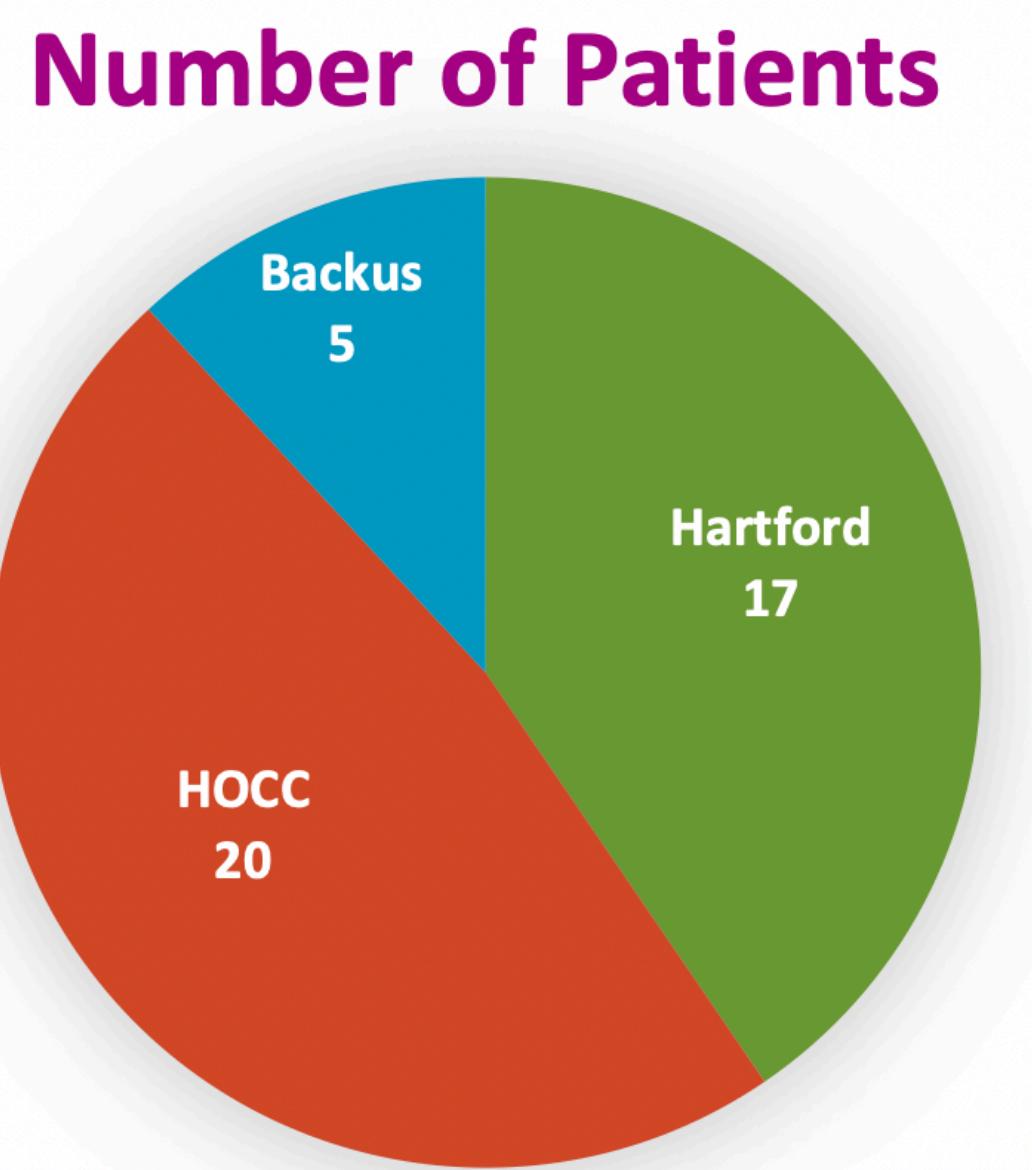
METHODS

- Retrospective, descriptive study that evaluated adult patients who received insulin infusions for the treatment of severe HTG within Hartford Healthcare between September 2018 – August 2020
- Patients were identified through medication reports and data was collected from electronic health records
- Descriptive analysis of data was performed

Inclusion Criteria:	Exclusion Criteria:
○ Age >18 years	○ Age <18 and >89 years
○ Received insulin infusion	○ Received insulin infusion for other indication
○ TG levels >1000mg/dL	○ TG levels <1000mg/dL

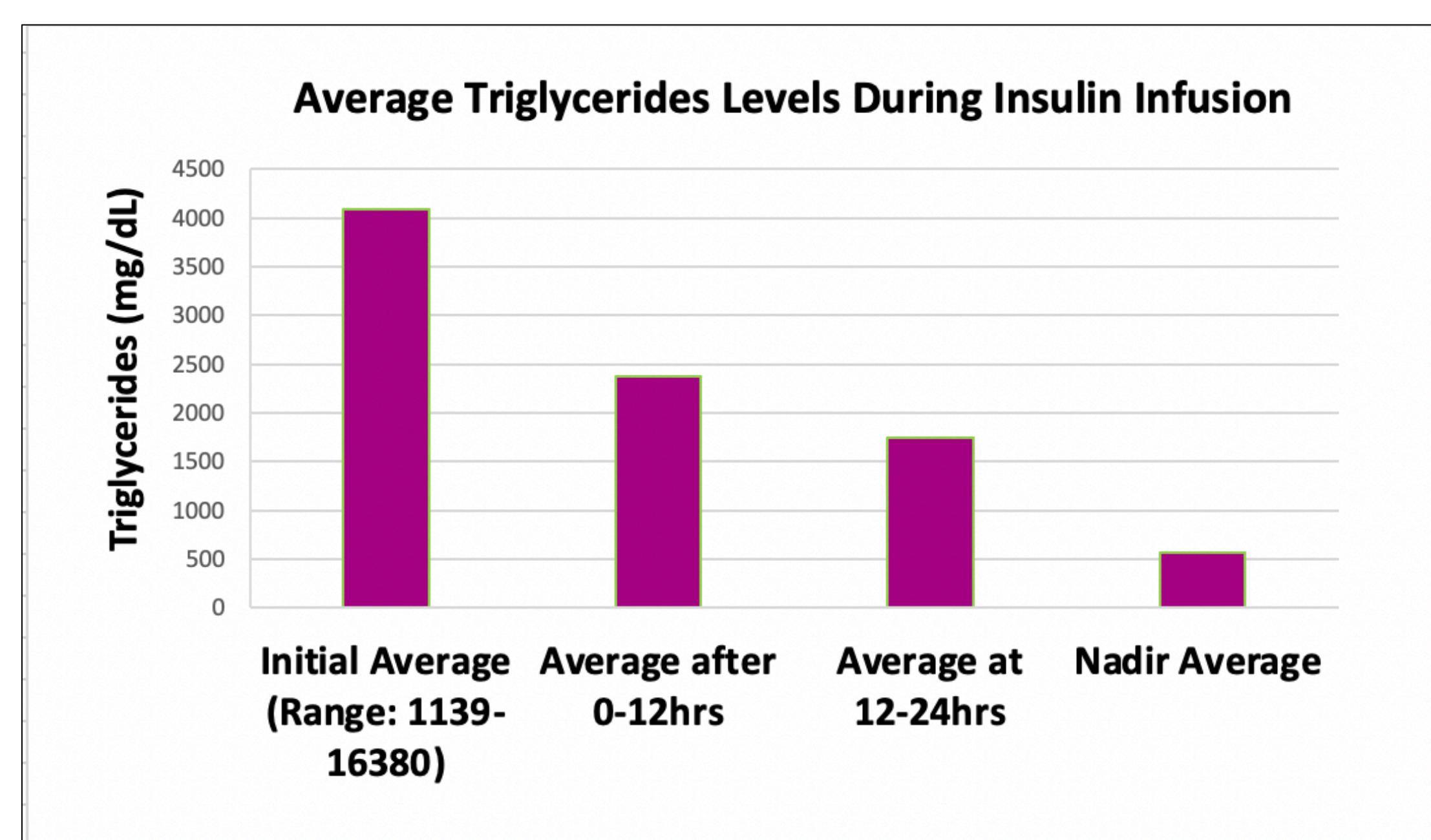
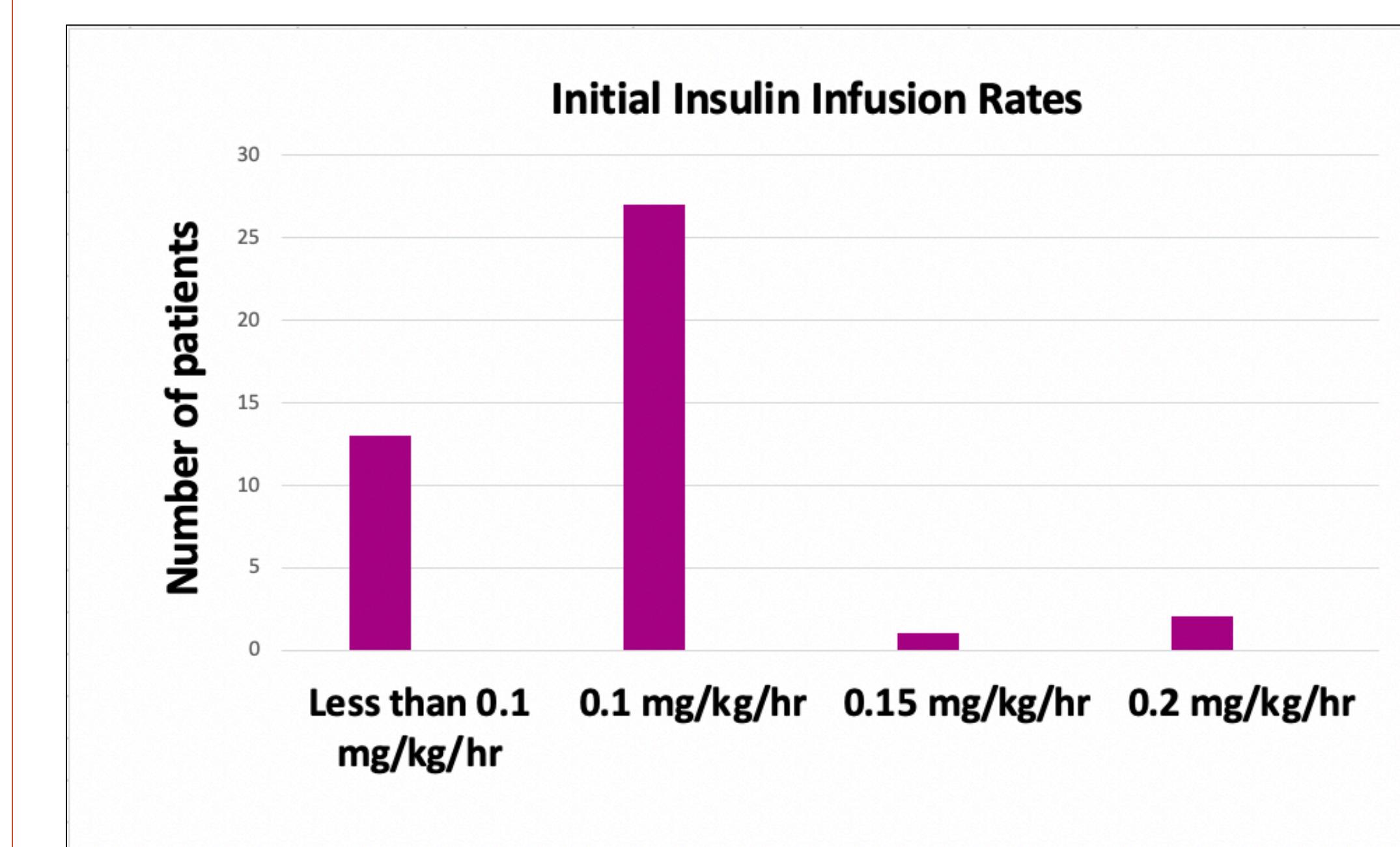
RESULTS

- 43 patient encounters were included
- 4 patients had multiple admissions



- The average duration of the insulin infusion was 70.5 hours with a range of 7- 480 hours.
- In 16 patients (37%), insulin infusions were started using Glucommander® orders and titration.

Parameter	Baseline Characteristics	
	N=43	Number (%)
Sex		
Male	30 (70)	
Age, Average (years)	40.7	
Weight, Average (kg)	96.3	
Ethnicity		
White	24 (56)	
Hispanic/Latino	8 (19)	
Black	6 (14)	
Asian	2 (5)	
Other	3 (7)	
Past Medical History		
HTG	22 (51)	
Pancreatitis	24 (56)	
Type 2 Diabetes	21 (49)	
Hyperlipidemia	21 (49)	
Alcohol Use	18 (42)	
Initial Blood Glucose, Average (mg/dL)	207	
Medications Prior to Admission		
Insulin therapy	13 (30)	
Oral Antidiabetic Medication	9 (21)	
HTG Medication	13 (30)	



Safety Outcome	Number of patients (%)
Hypoglycemia with BG 50-69	9 (21)
Hypoglycemia with BG <50	7 (16)
Hypokalemia with K <3.3	15 (35)

DISCUSSION AND CONCLUSIONS

- A reduction in TG levels was seen in patients treated with intravenous insulin for severe hypertriglyceridemia.
- The reduction of TG levels in the first 24 hours highlights the effective response patients had to insulin therapy despite the severely high initial TG average amongst the patients.
- Patients experienced adverse effects such as hypoglycemia and hypokalemia during use of the insulin infusion.
- Pharmacist intervention was required for patients who were initiated on Glucommander® for the insulin infusion.
- Limitations:
 - Small sample size
 - Insulin infusions and supportive therapy were initiated based on provider preference
- Future Directions:
 - Implement an order set to facilitate use of insulin infusion therapy for HTG
 - Collect follow-up data after order set implementation

DISCLOSURE

The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.

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