12-2022

Characterizing Appropriate Use of Octreotide Continuous Infusions for Gastroesophageal Bleeding

Austin Harris PharmD

Curtis Stump PharmD

Luke Keller PharmD, BCPS, BCCCP

Characterizing Appropriate Use of Octreotide Continuous Infusions for Gastroesophageal Bleeding

Austin Harris, PharmD; Curtis Stump, PharmD; Luke Keller, PharmD, BCPS, BCCCP

Parkview Regional Medical Center
Fort Wayne, Indiana

OBJECTIVE

- To characterize the appropriate use of octreotide infusions for gastroesophageal bleeding at a community hospital system to pursue guideline-driven standardization of care

BACKGROUND

- Octreotide is a somatostatin analogue used in the management of acute variceal hemorrhage by selectively constricting splanchnic blood vessels[1]
- When used for variceal hemorrhage, octreotide is recommended to be given as an initial 50 mcg IV bolus followed by a continuous infusion of 50 mcg/hr for a duration of 2-5 days[2,3]
  - Use beyond 2-5 days is not recommended, as studies have not demonstrated any benefit beyond this time frame[4,5]
- Anecdotal reports describe broader application of octreotide infusions within this community hospital system for the use of gastroesophageal bleeding that may not align with treatment guidelines
- This medication use evaluation was conducted to evaluate prescribing habits to help achieve guideline-driven standardization of octreotide infusion use

METHODS

- Retrospective chart review of all adult patients who received an octreotide infusion at two hospitals within a community health system from July 2019 to July 2022

Inclusion Criteria	Exclusion Criteria
Adult patients ≥ 18 years of age	< 18 years of age
Received at least one octreotide infusion for gastroesophageal bleeding	Received octreotide for indication other than gastroesophageal bleeding (i.e. hepatorenal syndrome, carcinoid crisis, etc)
	Received subcutaneous octreotide
	Received > 2 bolus doses of octreotide

- In accordance with treatment guidelines, appropriateness was assessed based on the following criteria specific for initiation and duration of octreotide use:

Initiation (must meet ≥1 criteria)	Duration
Ordering physician is gastroenterology specialist	Must not exceed 5 consecutive days
Confirmed diagnosis of gastroesophageal variceal hemorrhage through esophagogastroduodenoscopy (EGD)	
Suspected variceal hemorrhage based on past medical history (PMH) of cirrhosis, alcoholism, liver disease, or previous variceal hemorrhage	
Suspected variceal hemorrhage based on performance of a transjugular intrahepatic portosystemic shunt (TIPS) procedure	

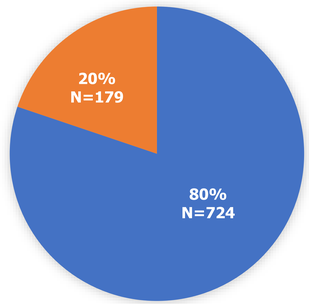
- Data was also collected to evaluate potential reasoning for octreotide to be initiated or continued outside of guideline recommendations, such as decreased hemoglobin values, increased need of vasopressors, and continued need for blood transfusions

RESULTS

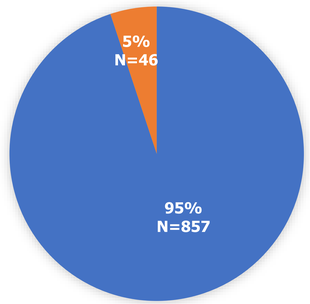
- A total of 986 subjects met usage criteria for octreotide infusion
  - 83 subjects were excluded due to the following criteria leaving **903 subjects for the final analysis**

Exclusion Criteria	>2 boluses received	SubQ dose received	Non-GI bleed	Total
Subjects	28	23	32	**83**

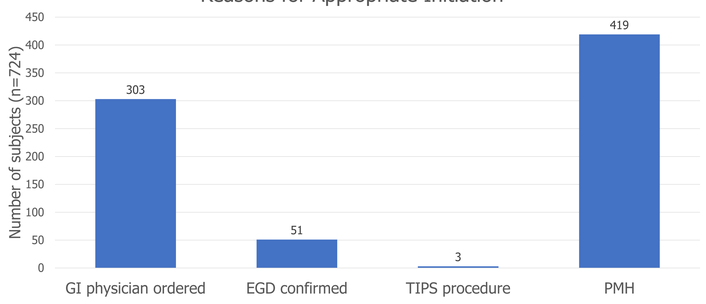
Initiation of octreotide



Duration of octreotide



Reasons for Appropriate Initiation



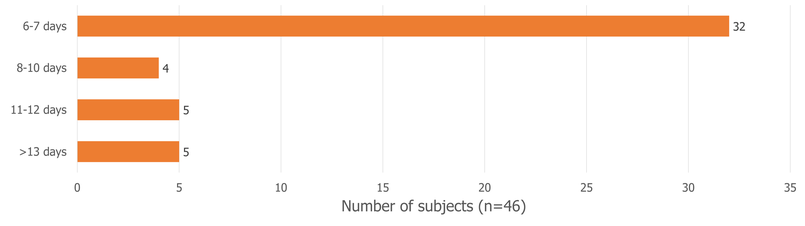
Note: subjects could meet multiple criteria

Potential Reasons for Inappropriate Initiation

Reason	Required vasopressors	Hgb minimum value within 24 hours of initiation	Received blood transfusion	Home medication with increased bleeding risk
Subjects (n=179)	42	102	92	24

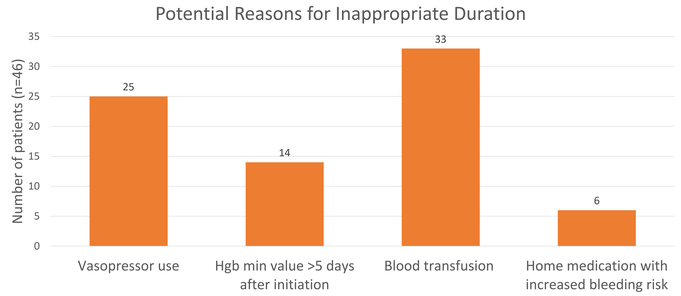
Note: subjects could fit into multiple categories

Length of Inappropriate Continuation



RESULTS

Potential Reasons for Inappropriate Duration



Note: subjects could fit into multiple categories

DISCUSSION & CONCLUSIONS

- In the 20% of subjects where octreotide initiation was deemed inappropriate, providers likely chose to utilize octreotide due to evidence of generalized uncontrolled gastroesophageal bleeding which is not supported by clinical guidelines or primary literature, as it should only be initiated for suspected or confirmed variceal bleeding
  - Inappropriate use of octreotide can lead to potential avoidable adverse effects such as sinus bradycardia and biliary tract disease
  - Based on the WAC pricing for octreotide for this health system, inappropriate initiation of octreotide led to an unnecessary additional cost of ~$28,000
- For subjects continued on octreotide for >5 days, it seems providers were employing any available option for subjects with ongoing bleeding or in a shock state requiring vasopressors
  - Despite intentions to treat patients with any medication that may be beneficial to control GI bleeding, primary literature demonstrates no added benefit with use of >5 days
  - Inappropriate continuation of therapy in this evaluation led to an additional cost for the health system of ~$7,900
- Our health system and others must continue to be diligent in our use of this medication potentially through specific embedded ordering parameters for guideline-driven standardization of care to ensure outcomes with this costly therapy

REFERENCES

1. Lexi-Drugs/Octreotide, Lexicomp app. UpToDate Inc. Accessed September 15, 2022.
2. Octreotide acetate [package insert]. East Hanover, NJ: Novartis; 2002.
3. Garcia-Tsao, Guadalupe et al. ACG & AASLD Joint Clinical Guideline: Prevention and Management of Gastroesophageal Varices and Variceal Hemorrhage in Cirrhosis. *American Journal of Gastroenterology*. 2007;102:2086-2102.
4. Corley, DA et al. Octreotide for acute esophageal variceal bleeding: a meta-analysis. *Gastroenterology*. 2001 Mar;120(4):946-54.
5. Rengesamy S et al. Comparison of 2 days versus 5 days of octreotide infusion along with endoscopic therapy in preventing early rebleed from esophageal varices: a randomized clinical study. *European Journal of Gastroenterology and Hepatology*. 2015 Apr;27(4):386-92.

Disclosure

The authors of this presentation have the following 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:
Austin Harris, PharmD: Nothing to disclose | Curtis Stump, PharmD: Nothing to disclose | Luke Keller, PharmD, BCPS, BCCCP: Nothing to disclose

Acknowledgements

A special thank you to Sarah Ferrell, PharmD for her invaluable contributions to make this project possible.