Characterizing Appropriate Use of Octreotide Continuous Infusions for Gastroesophageal Bleeding

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Continuous Infusions for Gastroesophageal Bleeding

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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.
• 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.
• Use beyond 2-5 days is not recommended, as studies have not demonstrated any benefit beyond this time frame.
• 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 gastroesophageal bleeding 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

• Adult patients ≥ 18 years of age
• Received at least one octreotide infusion for gastrointestinal bleeding
• Received intravenous octreotide
• Received > 2 bolus doses of octreotide

Inclusion Criteria

• Adult patients < 18 years of age
• Excluded octreotide for indication other than gastrointestinal bleeding (i.e., hepatic encephalopathy, carcinoid crisis, etc.)
• Received subcutaneous 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 ≥ 3 criteria) Duration

  Unlikely 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

<table>
<thead>
<tr>
<th>Inappropriate</th>
<th>Appropriate</th>
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<tr>
<td>Total</td>
<td>342 (37.9%)</td>
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Initiation of octreotide

- 20% (N=179) of patients initiated octreotide infusion due to an acute variceal hemorrhage event
- 80% (N=724) of patients received octreotide infusion for indications other than acute variceal hemorrhage

Duration of octreotide

- 5% (N=46) of patients received octreotide infusion for > 5 days
- 95% (N=857) of patients were discontinued within 5 days of initiation

Reasons for Appropriate Initiation

- GI physician ordered EGD confirmed TIPS procedure PMH

Reasons for Inappropriate Initiation

- Vasopressor use Hgb min value >5 days after initiation
- Blood transfusion
- Home medication with increased bleeding risk

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

5. Rengesamy S et al. Comparison of 2 days versus 5 days of octreotide infusion along with endoscopic therapy in preventing early relapse from esophageal varices: a randomized clinical trial. European Journal of Gastroenterology and Hepatology. 2015;Nov;27:386-393.

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