Rare Development of Complete Heart Block After Low Dose Octreotide Infusion For Esophageal Variceal Bleeding in Liver Transplant Candidate

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Introduction

- Cirrhosis and chronic liver disease are morbid conditions.
- Chronic liver failure leads to portal hypertension which has a myriad of health sequelae
- Esophageal varices are esophageal veins that become dilated because of portal hypertension and subsequently can
- Octreotide is used to treat esophageal varices by increasing splanchnic flow leading to decreased pressure through the portal system
- We present a patient who was put on an octreotide infusion for his esophageal varices and subsequently had complete heart block
- This is a rarely described complication, so the mechanisms are minimally understood
- Awareness of this complication is paramount

Case Presentation

- **HOD #1** - A 41 y/o male with a PMH of alcoholic cirrhosis was transferred to the ICU with worsening ascites, spontaneous bacterial peritonitis and decompensated liver failure for transplant evaluation. On arrival he was oriented and hemodynamically stable, but with a MELD score of 40 and severe AKI
- **HOD#5** - He was intubated for worsening mental status and airway protection
- **HOD#13 –** Patient developed brisk BIB and CTA showed a blush at the gastroesophageal junction. Subsequent EGD showed small, non-bleeding esophageal varices with diffusely friable gastric mucosa and clot in the stomach with no evidence of active bleeding. He was started on an octreotide
- **HOD#17 -** He had an episode of large volume hematemesis with increasing pressor requirements despite blood transfusions and underwent a TIPS procedure by IR
- **HOD#21 -** He acutely decompensated and had bradycardia with a HR down to the 20s which progressed to a code. He underwent CPR and got ROSC. He was placed on percutaneous pacing. His electrocardiogram (EKG) showed a complete heart block and had trans-venous pacing wires placed. Over the next 24 hours, he continued to decline with worsening lactic acidosis and increasing pressor and ventilator requirements.
- **HOD#22 -** The family chose to pursue comfort measures. He was extubated, pacing was stopped, and he died.

CTA showing a blush at the GE Junction

Discussion

- Octreotide has many cardiovascular effect.
- As a somatostatin analog, it slows the sinus node, decreases conduction through the atrioventricular (AV) node and ventricular conduction system, and decreases cardiac contractility
- It decreases splanchnic flow, increases systemic vascular resistance , and decreases cardiac output
- It inhibits VIP's positive chronotropic effects
- These effects are more pronounced with prolonged use
- Effects seem to be related to dose and administration route, but there is not a perfect association
- We need to increase awareness of this dangerous side effect
- Transplant patients often have medications that increase cardiac risk
- Medication stewardship should always be employed