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Tsuchitani:

- P: In ED patients with acute non-variceal, upper GI bleed.
- I: Does the use of octreotide/somatostatin
- C: Compared to usual care PPI's
- O: Hasten resolution of bleeding, more favorable outcomes

Background

Somatostatin inhibits gastric secretion of acid, pepsin and intrinsic factor and stimulates gastric mucous production.
 Administration of somatostatin also decreases splanchnic blood flow.
 Octreotide is a long-acting synthetic analog of somatostatin
 Platelet aggregation occurs optimally at neutral pH
 In acidic environment, pepsinogen → pepsin, which digests formed blood clots
 Peptic ulcer bleeding: 80% patients spontaneously stop bleeding, 20% re-bleed; overall mortality 6-7%

Study	Patient Group	Study Type	Key Outcomes	Key Results	Limitations
Magnusson I, Ihre T, Johansson C et al. Randomized double blind trial of somatostatin in the treatment of massive upper gastrointestinal hemorrhage. Gut, 1985; 26: 221-226.	95 patients with acute non-variceal GI bleeds with "massive" bleeding (clinical signs of shock or preshock) 46 patients- 72h somatostatin gtt 49 patients- placebo	Randomized Double-blind	Need for surgical treatment: >6 units PRBC needed to keep stable vitals Evidence of active bleeding one day after treatment	Patients that needed surgery (p<0.04): 14 placebo 5 somatostatin Rebleeding: 5 placebo 6 somatostatin	Only included patients with signs of shock

<p>Avgerinos A, Sgouros S, Viazis N et al. Somatostatin inhibits gastric acid secretion more effectively than pantoprazole in patients with peptic ulcer bleeding: A prospective, randomized, placebo-controlled trial. Scandinavian Journal of Gastroenterology, 2005; 40: 515-522</p>	<p>Adult patients admitted within 24 hours of bleeding Endoscopic stage IIc and III PUB Not on PPI or H2 blockers in the week prior No hypovolemia NI platelets, coags</p> <p>14 somatostatin 14 PPI 15 placebo</p>	<p>Randomized Double-blind</p>	<p>Gastric pH compared to pt baseline gastric pH during drug infusion</p>	<p>Somatostatin ($p < 0.0001$) and PPI ($p < 0.0001$) patients were successful in maintaining $pH > 4.0$</p> <p>During first half of treatment, time spent above $pH 4.0$ and 5.4 was higher with SST than PPI ($p < 0.005$) and ($P < 0.02$)</p>	<p>186 patients screened; 143 excluded</p>
<p>Archimandritis A, Tsirantonaki M, et al. Ranitidine versus ranitidine plus octreotide in the treatment of acute non-variceal upper gastrointestinal bleeding: a prospective randomized study. Current Medical Research Opinion. 2000; 16(3): 178-83.</p>	<p>84 patients with acute non-variceal upper GI bleed</p> <p>44 ranitidine 40 ranitidine + octreotide</p>	<p>Prospective Randomized Open</p>	<p>Need for surgical intervention</p> <p>Hospital stay length</p> <p>Blood units transfused</p>	<p>Hospital stay length ($p = 0.25$) and amount of blood units ($p = 0.16$) did not differ between groups</p> <p>Need for emergency surgery did not differ ($p = 1.0$)</p>	<p>Small numbers Not blinded</p>
<p>Lin H, Perng C, Wang K et al. Octreotide for arrest of peptic ulcer hemorrhage- a prospective randomized</p>	<p>Patients with active peptic ulcer bleeding or nonbleeding visible vessel at ulcer bases</p>	<p>Randomized Open</p>	<p>Hemostasis</p> <p>Blood units transfused</p>	<p>35/42 (83.3%) octreotide v 23/42 (54.8%) ranitidine achieved hemostasis ($p < 0.01$)</p>	<p>Not blinded</p>

<p>controlled trial. Hepatogastroenterology. 1995 Nov-Dec; 42(6): 856-860.</p>	<p>42 octreotide 42 ranitidine</p>			<p>Octreotide group had less volume of blood (p<0.05), less number of pts needing endoscopic hemostasis/surgery (p<0.05) and less days in hospital (p<0.001)</p>	
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Clinical Bottom Line: Somatostatin and octreotide appear to be useful in improving outcome in acute non-variceal upper GI bleeding. However, studies included are limited having used varying doses of these drugs over various treatment periods. As both drugs have demonstrated favorable outcomes in acute variceal bleeding, consideration as an adjunct in the acute GI bleed presenting to an ED may be worth consideration as there have been no reported harms. Supportive evidence appears to be most pronounced on the rate of re-bleeding on subsequent endoscopy.