

Reducing pantoprazole infusions in GI bleed patients by optimizing Emergency Department Order Sets

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Background

- Non-variceal upper gastrointestinal bleeding (NVUGIB) is a common ED presentation
- NVUGIB account for significant morbidity, mortality and health care resource usage.
- Despite their widespread use, IV pantoprazole infusions do not improve patient-important outcomes when provided prior to endoscopic therapy

Methods

- We made the following ED Order Set changes including:
 1. De-emphasizing IV pantoprazole infusion pre-endoscopy,
 2. Clinical decision support embedded (for PPI, endoscopy, disposition and transfusions) within the order set, and
 3. Educating physicians and nurses about the changes and the evidence to support these changes
- We used a pre/post-order set design analyzing 391 days pre and 189 days post-order set changes
- We compared ED treatment of NVUGIB patients in the pre and post order set time periods

	Pre-OS Changes (n=2165)	Post-OS Changes (N=901)	P-value
Age	60.9	64.4	0.001
Gender (%M)	57.2%	58.1%	0.69
Systolic BP	129	127	0.39
CTAS (% 2)	1.48%	1.22%	0.74
Initial hgb	118	115	0.05
% Hgb <70	11.7%	10.6%	0.44
OS used	48.7%	47.7%	0.61
% admitted	57.1%	58.6%	0.45
OUTCOMES			
PPI Infusion %	427 (47.1%)	118 (31.5%)	<0.001
Transfusion %	478 (22.1%)	205 (22.8%)	0.70

Results

- For baseline characteristics, patients in the post-order set change group were significantly older (64.4 yrs vs 60.9 yrs p-value=0.0016) and had a lower hgb (115 vs 118, p-value=0.049) but otherwise there were no significant differences.
- For the **primary outcome**, in the pre-order set phase, 47.1% received a pantoprazole infusion ordered by an EP, compared to 31.5% in the post-order phase, for an absolute reduction of 15.6% (p-value= <0.001).
- For the secondary outcome, transfusion rates were similar pre/post (22.08% vs 22.75%). Patients in which the ED GI bleed order set was used were more severe than those patients who didn't have the order set used. Admitted patients were not routinely converted to IV pantoprazole infusions.

Discussion

- This multi-faceted intervention resulted in a significant reduction in pantoprazole infusions
- Order sets and embedded Clinical Decision Support can be effective tools to change clinical practice