Assessment of a Pharmacist-Driven Stress Ulcer Prophylaxis Protocol in a Community Hospital Setting

Authors: Floyd, L and Cihak, L

Practice Site: Bon Secours St. Mary’s Hospital

Purpose/Background
The American Society of Health System Pharmacists (ASHP) Guidelines on Stress Ulcer Prophylaxis (SUP) (1999) recommend SUP for certain patients in the intensive care unit (ICU). No particular class of acid suppressive therapy (AST) is recommended by ASHP or the Eastern Association for the Surgery of Trauma SUP guidelines (2008). At Bon Secours St. Mary’s Hospital, a pharmacist-driven SUP protocol was initiated in April 2017 with the goal of eliminating or reducing inappropriate proton pump inhibitor (PPI) or histamine type 2 receptor blocker (H2RA) use.

Objective
The objective of this study was to determine the impact of a pharmacist-driven SUP protocol on the appropriateness of PPI use in a community hospital-based setting.

Methods
This was a retrospective, single-center, observational study at a 391-bed acute care hospital in Richmond, Virginia. Charts were reviewed pre- and post-protocol implementation (July 2016 and July 2017), and patients were included if they were ≥18 years old and had an order for a PPI (non-ICU patients) or an order for a PPI or H2RA (ICU patients). The primary endpoint was mean percentage of patient-days of inappropriate PPI use before and after protocol implementation. Secondary endpoints included ICU and hospital length of stay, and total number of PPI orders with a breakdown by indication selected. Secondary endpoints assessed only in the ICU population included: mean percentage of patient-days of inappropriate SUP, percent of ICU patients switched from a PPI to an H2RA for SUP, percent patient-days of AST administered, duration of AST used (total duration of AST, appropriate preferred H2RA agent, appropriate PPI agent, inappropriate H2RA or PPI agent), percentage of inappropriate AST continuation upon transfer from ICU to general ward, and total number of orders discontinued due to inappropriate SUP.

Results
One hundred patients were included in each of the non-ICU groups (pre- and post-), and 50 patients were included in each of the ICU groups. Groups were similar in terms of baseline characteristics. There was an 8% decrease in the mean percentage of patient days of inappropriate PPI use in non-ICU patients (12±3.3% and 4±1.9%; p=0.04), whereas only a 5% decrease was seen in the ICU cohort (34±8.7% and 29±10.1%; p=0.7). The percentage of patient-days AST was administered decreased by 10% in the ICU population following protocol implementation (92% vs 82%; p=0.02). In addition, decreased rates of inappropriate continuation of AST use following general ward transfer was observed following protocol implementation in this population (33% vs 14%; p=0.02).

Conclusion
Following implementation of the SUP protocol, there was a significantly lower percentage of patient-days of inappropriate PPI use in non-ICU patients. Additionally, there were significantly lower percentage of patient days of AST administered and AST continuation upon transfer in the ICU population. Overall, these results show that a pharmacist-driven SUP protocol may help to ensure more appropriate utilization of SUP. Future directions could include assessing cost savings with this protocol and implementing the protocol at other Bon Secours Enterprise hospitals.