SWSC 2020 On-Demand Meeting Abstracts

28. MISSED OPPORTUNITIES: VENOUS THROMBOEMBOLISM PROPHYLAXIS AMONG GENERAL SURGERY PATIENTS

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Background: Venous thromboembolism (VTE) is a common healthcare complication that can have devastating outcomes. The CDC estimates 100,000 fatalities occur annually due to VTE. Healthcare associated VTE is the leading cause of preventable hospital death in the United States and it is estimated that 50% of all VTEs are healthcare associated. Further, up to 70% of healthcare associated VTEs may be preventable yet less than half of all patients receive prophylaxis. The CHEST guidelines recommend non-orthopedic surgical patients without contraindication at moderate risk for VTE receive VTE prophylaxis or intraoperative pneumatic compression and those at high risk receive both. The most recent NSQIP data from our institution identified VTE complications as an opportunity for improvement. The goal of this study was to obtain a better understanding of the deficiencies between prophylaxis administration and current guidelines.

Methods: A retrospective analysis through manual chart review was conducted of patients undergoing general surgery procedures who spent at least one midnight in the hospital from Jan-Aug 2019. Data collected included surgery performed, surgical service, date of surgery, Caprini score, contraindications to prophylaxis, pre-operative prophylaxis (Pre-PPX) administration, and post-operative prophylaxis (Post-PPX) administration. Descriptive statistics were reported as percentages and chi-square test was used to compare patients on surgical vs non-surgical services.

Results: A total of 2243 general surgery cases were analyzed. Among reviewed cases, 1593 (71.0%) received Pre-PPX and 1849 (82.4%) received Post-PPX (Figure). Contraindications to administering Pre-PPX were therapeutic anticoagulation (51.4%), Caprini score ≤2 (10.9%), intracranial hemorrhage (6.6%), active or high hemorrhage risk (23.7%), or severe thrombocytopenia or supratherapeutic INR (7.4%). Of 650 cases that did not receive Pre-PPX, Pre-PPX was indicated and not contraindicated 46.2% of the time. Reviewing patients not receiving indicated Pre-PPX, 14.3% had an epidural, 8.0% were undergoing surgery for which the Caprini score is not validated, and 3.0% had prophylaxis ordered but not administered. Overall, 13.4% of cases should have received Pre-PPX but did not. Among the 394 cases that did not receive Post-PPX, Post-PPX was indicated and not contraindicated 29.2% of the time. Contraindications included therapeutic anticoagulation (57.9%), discharging from PACU (2.9%), intracranial hemorrhage (7.6%), active or high hemorrhage risk (30.9%), or extremely low risk patient (0.7%). Overall Post-PPX was indicated but not given in 5.1% of cases. When comparing general surgery patients on surgical and non-surgical services, patients on non-surgical services were significantly more likely to have Pre-PPX inappropriately held (57.0% vs 43.3%, $p<0.01$) and Post-PPX not ordered when indicated (53.9% vs 20.6%, $p<0.01$).

Conclusion: With more than one in ten cases not receiving appropriate Pre-PPX and one in twenty not receiving appropriate Post-PPX, there is a significant opportunity to develop better practices. Understanding missed opportunities for Pre- and Post-PPX can help target interventions to increase

administration among these populations. Additionally, surgeons must recognize that non-surgical services are more likely to inappropriately hold Pre- and Post-PPX than surgical services. Engaging our non-surgical colleagues can drive down missed opportunities for prophylaxis administration and in turn decrease VTE rates.