

Title: Use of an electronic database to evaluate performance of anticoagulation

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Purpose:

Warfarin has consistently proven to be an effective anticoagulation choice, but comes with monitoring and dosing issues due to its narrow therapeutic window and numerous interactions with both medications and foods. Currently at the Ascension Medical Group (AMG) Via Christi North Amidon Clinic in Wichita, Kansas, patients on warfarin are being managed by physicians using paper tracking. There is no formal protocol in place for warfarin dose adjustments or monitoring schedule. The purpose of this study was to determine the efficacy and safety of the current practices of warfarin dosing and monitoring of AMG Via Christi North Amidon Clinic and compare those results to the study completed in 2017 by Dr. Atwill looking at the Pharmacist/Nurse anticoagulation clinic.

Methods:

This retrospective chart review will be submitted to the Internal Review Board for approval. This study will include data collected from the electronic and paper medical records of patients seen at the Ascension Medical Group Via Christi North Amidon Clinic that are taking warfarin, starting September 1, 2019 through August 31, 2020. Historical paper records from patients managed at the AMG Via Christi North Amidon clinic will be added to the CoagClinic application for analysis of patients meeting inclusion criteria. The primary endpoint is the mean time in therapeutic range (TTR) of patients managed at the AMG Via Christi North Amidon Clinic. Secondary outcomes include the incidence of adverse events defined as major bleed, DVT, PE, stroke, myocardial infarction, and death of any cause and the mean number of warfarin dose adjustments required to return to therapeutic INR following a subtherapeutic or supratherapeutic INR result. It is hypothesized that the AMG Via Christi North Amidon Clinic is not achieving a TTR >65% in the patients being managed on warfarin. Time in therapeutic range (TTR) will be calculated using the Rosendaal method. Each patient's goal INR will be determined by indication and physician clinical judgement. Results of this study were compared to the study completed in 2017 by Dr. Atwill.

Results: Of the 114 warfarin patients managed by the AMG North Amidon Clinic, 70 patients met inclusion criteria. The time in therapeutic range was 67.7%. On average, each patient required 1.2 dose adjustments to return to a therapeutic INR. There were 5 adverse events, including 2 ischemic strokes, 1 gastrointestinal bleed, 1 inferior vena cava thrombus, and 1 atrial appendage thrombus. Ad hoc analysis found that on average, each patient had 2.6 INR results missing from the paper record.

Conclusions: AMG North Amidon clinic is achieving an efficacious time in therapeutic range, but is not reaching optimal time in therapeutic range as recommended by the CHEST guidelines. Recommendations to improve the time in therapeutic range include consultation of the pharmacist nurse anticoagulation clinic as well as electronic monitoring and documentation.