

## Evaluation of VTE Prophylaxis with Immunomodulatory Drug Use in Patients with Multiple Myeloma at a Community Teaching Hospital

Immunomodulatory drugs (IMiDs) including lenalidomide and pomalidomide are used for primary treatment of multiple myeloma often in combination with dexamethasone and a proteasome inhibitor. These regimens are known to increase risk of venous thromboembolism (VTE), which is reflected through NCCN guidelines in the IMPEDE VTE and SAVED risk scores for patients with multiple myeloma taking an IMiD. Patients with low-risk scores are recommended to receive aspirin 81-325 mg daily while high-risk should receive a low molecular weight heparin, rivaroxaban 10 mg daily, apixaban 2.5 mg twice daily, fondaparinux 2.5 mg daily, or warfarin with an INR goal of 2.0-3.0.

The institution's investigational review board approved this retrospective, cross-sectional chart review. A database query was conducted to identify patients with multiple myeloma that have been treated with an IMiD. Patients were at least 18 years old and were treated through Mercy Oncology in the St. Louis area within the last 2 years to cover the time period since the publication of the aforementioned NCCN guidelines. Basic patient demographics such as age, BMI, race, and past medical history were collected as well as cancer-related information such as IMiD use, number of prior cancer treatments, and concurrent therapies. VTE-related information was collected to calculate each patient's IMPEDE VTE and SAVED scores and to assess safety of VTE prophylaxis as well as occurrence of VTE. The primary outcome was to determine practice patterns of VTE prophylaxis among patients treated with IMiDs for multiple myeloma at Mercy St. Louis community hospital and determine consistency with NCCN guidelines based on IMPEDE VTE and SAVED scores. The secondary outcome was to determine the rate of VTE that occurred in these patients.

There were 45 patients with multiple myeloma identified for inclusion in this study with 7 being excluded because they did not receive an IMiD for treatment at any time, thus 38 patients were included in the analysis. Based on IMPEDE VTE scores, 21 percent of patients received appropriate VTE prophylaxis while being treated with an IMiD. Of these, only 17 percent of patients in the high-risk stratification received appropriate prophylaxis. The mean IMPEDE VTE score was 7.2 with a standard deviation of 2.75, and the median score was 7. Using the SAVED scores, 71 percent of patients overall and 33 percent of high-risk patients received appropriate prophylaxis. The mean SAVED score was 1.3 with a standard deviation of 1.09, and the median score was 1. Overall, 11 percent of these patients with multiple myeloma who received an IMiD experienced a VTE, and none of them experienced a major bleed with prophylaxis. Of the patients who experienced a VTE, 50 percent received appropriate treatment per IMPEDE VTE scores compared to 75 percent per SAVED scores.

The low rates of appropriate VTE prophylaxis in this study suggest that practice patterns at Mercy St. Louis hospital have not fully adapted to the newest recommendations from the NCCN guidelines for patients with multiple myeloma who are receiving an IMiD. There also exists a large discrepancy in the rates of appropriate regimens when comparing assessment by the IMPEDE VTE or the SAVED risk scoring tools. Future studies to compare these risk scoring tools would be useful to determine which is more suitable for predicting patients at high risk of VTE who require anticoagulation while limiting adverse events.