

Assessment of Appropriate Anticoagulation in Multiple Myeloma Patients- A Health System Specialty Pharmacy Retrospective Evaluation

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RATIONALE

- Multiple myeloma (MM) patients have a 9-fold increase in venous thromboembolic events (VTEs)
- In 2019, the National Comprehensive Cancer Network (NCCN) incorporated the utilization of the SAVED Score, a scoring tool that predicts coagulation risk in MM patients receiving immunomodulatory (IMiD) drugs
- Patients with a SAVED score of < 2 should take aspirin and ≥ 2 should take enoxaparin, rivaroxaban, apixaban, fondaparinux or warfarin
- There are limited studies that assess the role of clinical specialty pharmacists in the prevention of VTEs in MM patients on IMiD therapy

OBJECTIVE

To evaluate the clinical and financial impact of using the SAVED score for appropriate anticoagulation of VTE prevention in MM patients receiving IMiDs from a health system specialty pharmacy (HSSP) compared to non-HSSPs

METHODS

Design: Retrospective evaluation of anticoagulation therapy for patients taking IMiDs

Setting: Patients receiving IMiD therapy from HSSP and non-HSSP

Sample: Goal sample size was 100 patients. The study was powered to 80%. The p value was set to less than 0.05%

Instrument(s): Data collected using reports from the pharmacy's case management program (CMP) and electronic health record (EHR)

Data Collection Procedure: Data collected from 01/01/2021-07/31/2022. Patient included if ≥18 years old, diagnosed with MM, on an IMiD for ≥ 1 month and excluded if contraindications to anticoagulant therapy as per NCCN guidelines

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This study demonstrated that there was **no statistically significant difference** on inappropriate anticoagulation prescribing for patients taking IMiDs from a health-system specialty pharmacy compared to a non-health system specialty pharmacy. In addition, there was **no statistically significant difference** in thrombotic or bleeding related events among both groups.

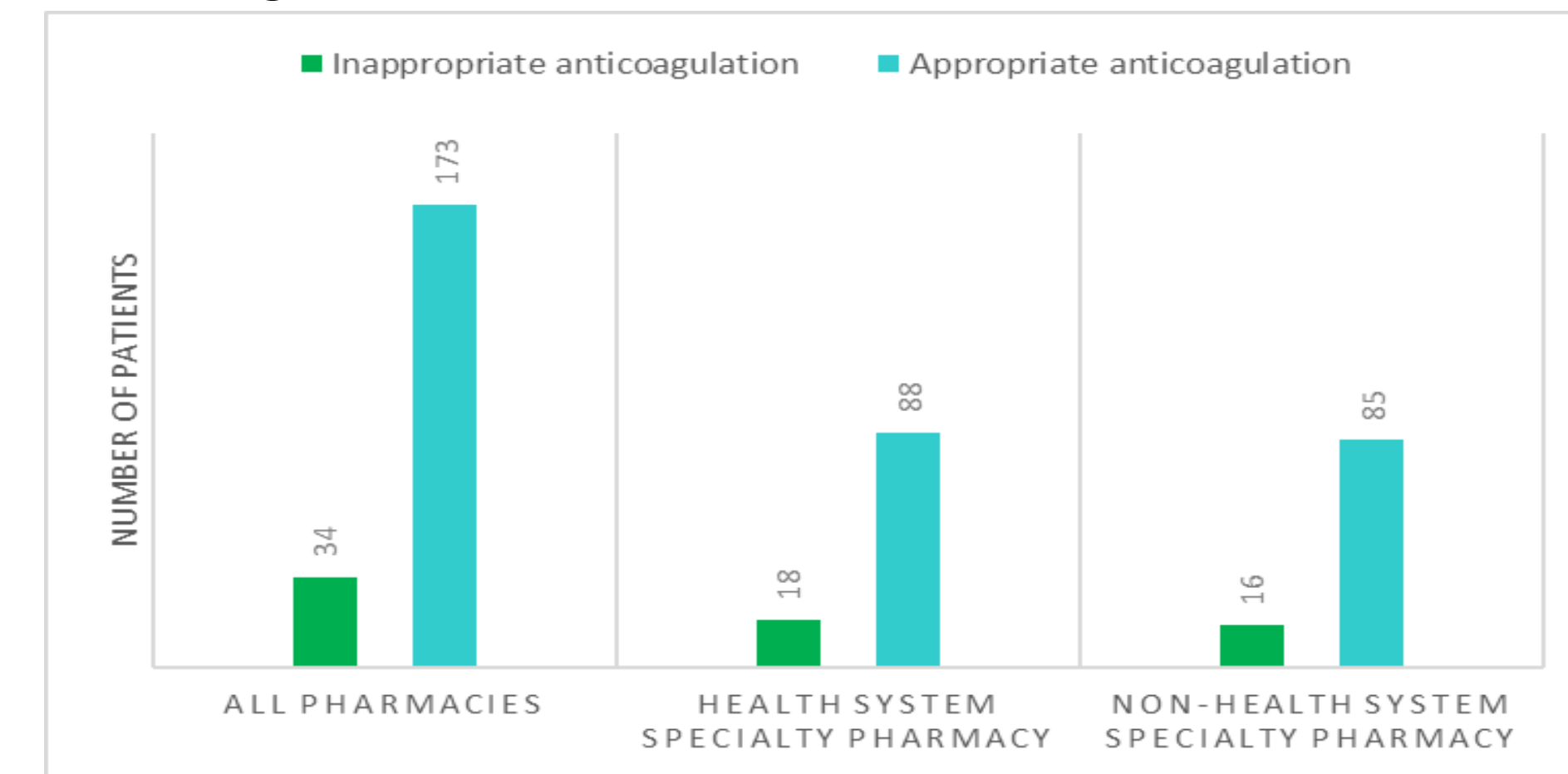
RESULTS

- Study was adequately powered with a total sample size 207 of which 106 patients received IMiD therapy from HSSP and 101 patients received IMiD therapy from a non-HSSP
- There were 18 (17%) patients in the HSSP who were not on appropriate anticoagulation therapy compared to 16 (15.8%) patients in the non-HSSP group (p-value=0.973)
- In the HSSP group, there were 5 (4.7%) patients that had ER visits related to bleeding/thrombotic events compared to 2 (3.7%) patients in the non-HSSP group (p-value=1.00)

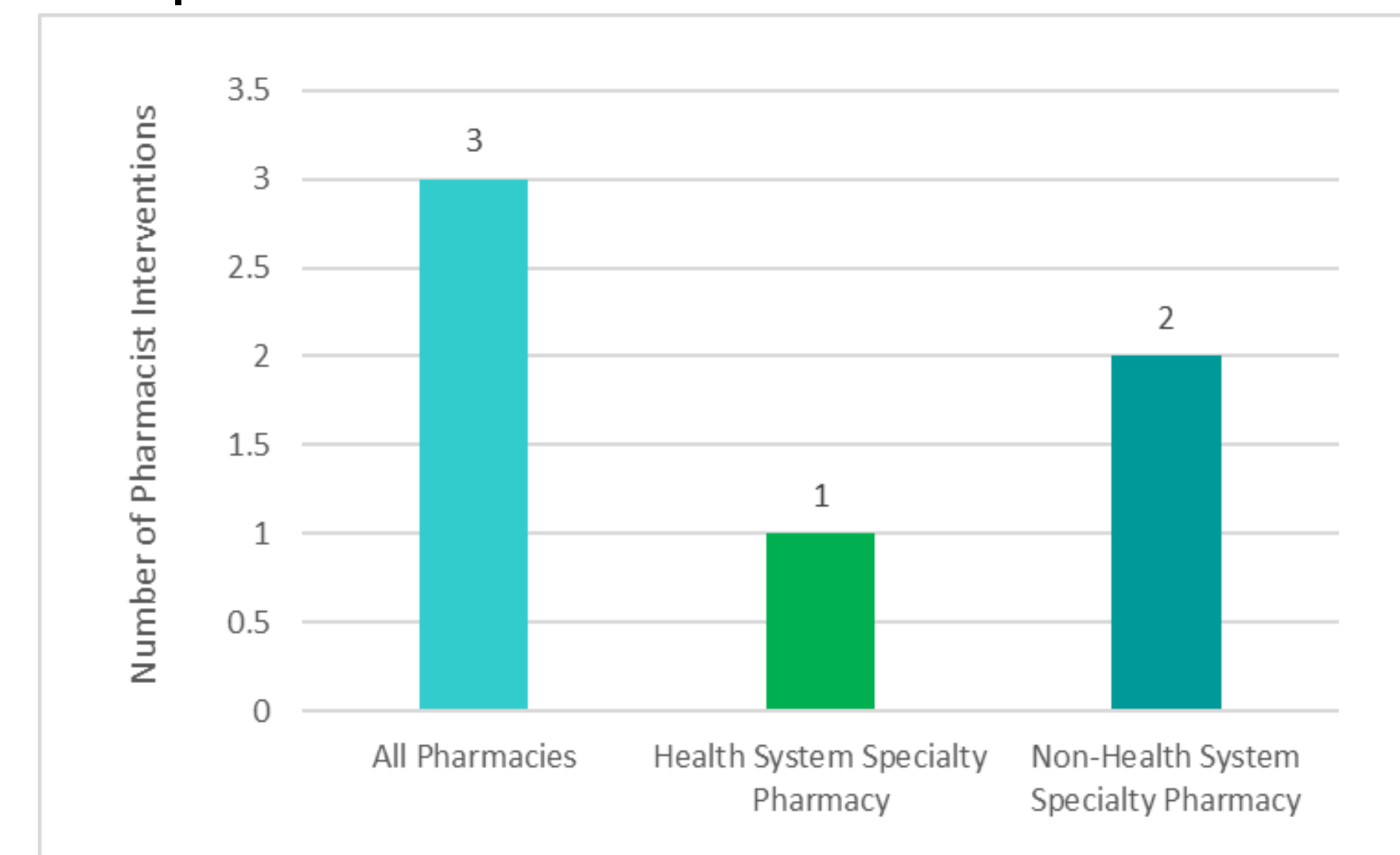
Table 1. Baseline Characteristics of Studied Population

Total sample size, n	207
Age, n	
18-35	2
36 – 65	77
66-95	129
Gender, n (%)	
Female	102 (49.3)
Male	105 (50.7)
Race, n (%)	
Black	30 (14.5)
Asian	1 (0.5)
White Hispanic	124 (59.9)
White	41 (19.8)
Other	5 (2.4)

Graph 1. Comparison of inappropriate and appropriate anticoagulation based on SAVED score calculation



Graph 2. Evaluation of the number of pharmacist interventions regarding prophylactic anticoagulation for IMiD therapies dispensed at HSSP versus IMiD medications therapies at non-HSSPs



CONCLUSIONS

Interpretation of Results

- An appropriate anticoagulant is defined as a suitable agent according to the SAVED score, and an inappropriate anticoagulant is defined as an unsuitable agent according to the SAVED score
- Study results showed that 17% of patients receiving their IMiD prescriptions at the HSSP had inappropriate anticoagulation therapy compared to 15.8% of patients receiving their IMiD prescriptions from non-HSSP
- The difference in percent of patients receiving appropriate anticoagulation at HSSP versus non-HSSP was not statistically significant
- There was no statistical significance in the 4.7% of patients filling their IMiD prescriptions at HSSP who had ER visits during the study period with a total associated cost of \$10,555, compared to the 3.7% of patients filling their IMiDs at non-HSSP with a total associated cost of \$4,785

Limitations

- Patients were not differentiated as newly diagnosed or previously diagnosed with MM
- Highest risk for VTE is in the first 6 months following a diagnosis of MM, therefore risk of VTE could have varied significantly between the two groups
- SAVED score variables such as surgery within 90 days and VTE history were dependent on being manually documented in office visit notes

Recommendations for Practice / Research

- Calculations of SAVED scores will need to be completed during clinical review of new IMiD prescriptions by clinical pharmacists to make appropriate recommendations prior to dispensing of an IMiD as well as periodically during therapy
- A prospective study will need to be completed to assess for clinical outcomes, specifically the number of ER visits related to anticoagulation

Nothing to disclose; references available upon request