

Factors Associated with Anticoagulant Treatment Initiation Among Venous Thromboembolism Patients with Cancer

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Introduction

- Cancer patients with venous thromboembolism (VTE) are at a higher risk of a recurrent VTE and mortality compared to cancer patients without VTE.^{1,2}
- Guidelines recommend anticoagulant treatment (new direct oral anticoagulants, low molecular weight heparin [LMWH], and warfarin) for cancer patients with VTE.³
- Understanding the factors associated with anticoagulation treatment initiation in a real-world setting is needed to further inform treatment guidelines in this population.

Objective

- The goal of this study was to evaluate factors associated with anticoagulant treatment initiation among cancer patients with VTE.

Methods

Study Design / Data Source

- This was an observational retrospective cohort analysis using the SEER Medicare linked database.

Patient Population

- VTE cancer patients age ≥65 were identified from the SEER-Medicare database from January 1, 2014 – December 31, 2019.
- Patients were required to be enrolled for ≥6-months prior to their first VTE (index) and without evidence of precipitating factors (i.e. atrial fibrillation) prior to index.
- Patients were also required to be enrolled for ≥ 30-days after index.
- Cancer status was identified as active cancer (2 or more cancer diagnoses, or 1 cancer diagnosis plus at least 1 cancer related treatment) from SEER or Medicare database in the 6-months prior through 30-days post VTE.
- Full inclusion and exclusion criteria are shown in Figure 1.

Cohorts

Patients were assigned to the following cohorts based on receiving anticoagulant (dabigatran [includes LMWH bridging], apixaban, rivaroxaban, edoxaban, warfarin [includes LMWH bridging], unfractionated heparin [UFH] or fondaparinux) treatment within 30-days after index VTE:

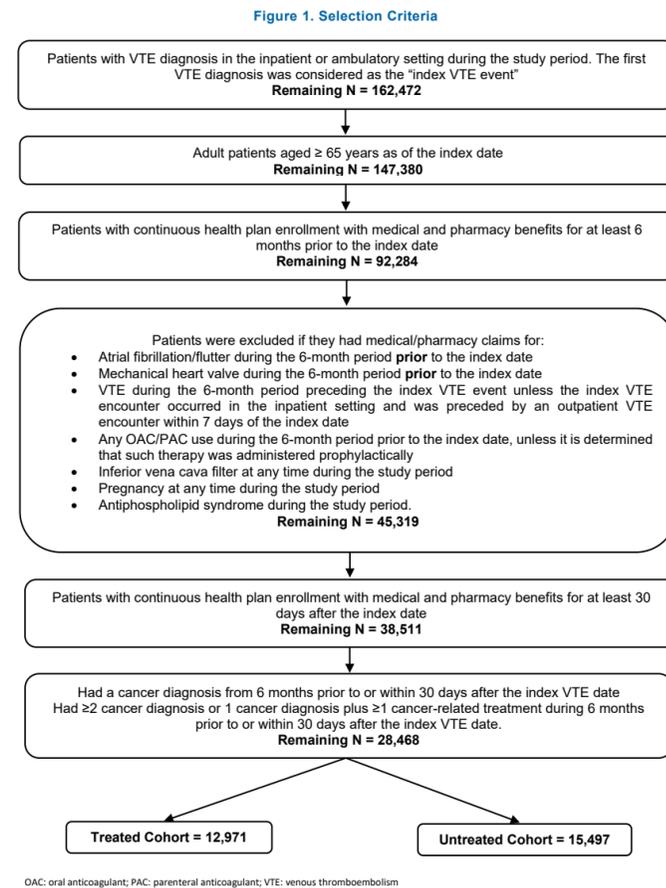
- Treated
- Untreated

Statistical Analysis

- All study variables were analyzed descriptively.
- Logistic regression was used to determine factors associated with initiating treatment with an anticoagulant within 30-days of index VTE.
 - Demographic and clinical characteristics were included as possible factors associated with anticoagulant treatment.

Results

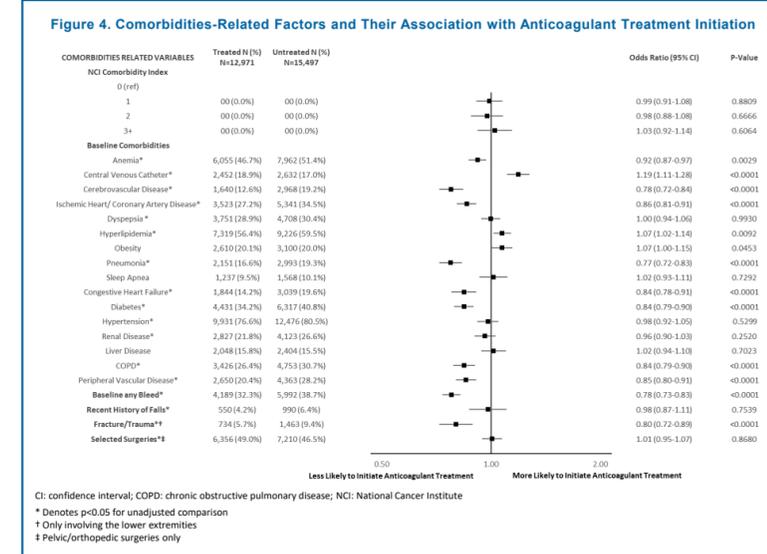
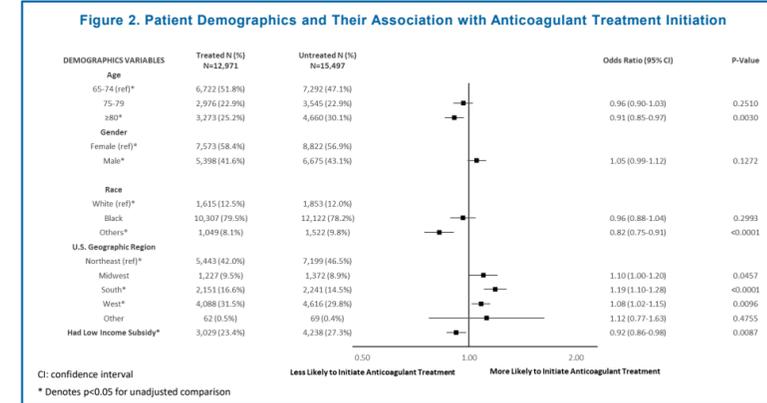
- A total of 28,468 VTE-Cancer patients met all study criteria. Of these, approx. 46% (n=12,971) were classified as treated and 54% (n=15,497) as untreated (figure 1).
- Patients had a mean age of 75 (treated) and 76 (untreated) and were generally female (>50% for both).
- Figures 2-5 report patient demographics, VTE-related, comorbidities-related and cancer-related factors for the Treated and Untreated Cohorts. In addition, odds ratios are reported to suggest potential associations with anticoagulant treatment initiation.



OAC: oral anticoagulant; PAC: parenteral anticoagulant; VTE: venous thromboembolism

Limitations

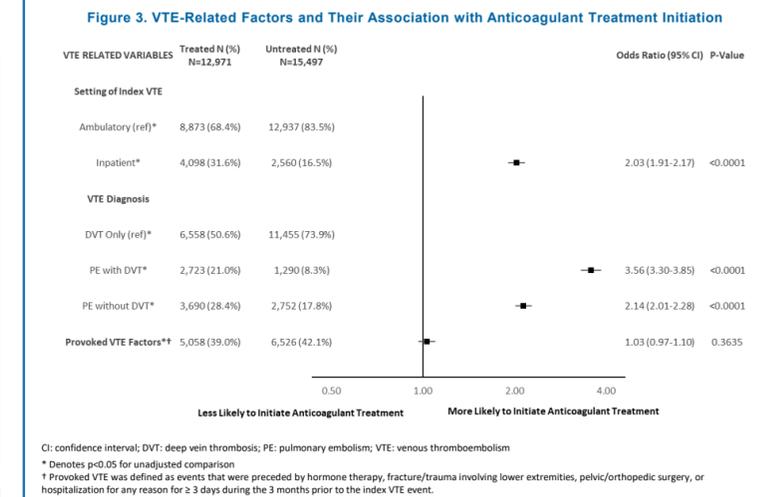
- As with all claims data, laboratory results such as international normalized ratios were unavailable, diagnoses were identified using International Classification of Diseases, 9th/10th Revision, Clinical Modification (ICD-9/10-CM) codes, and drug prescriptions were identified through prescription claims. Missing values, coding errors, and lack of clinical accuracy may have introduced bias into the study.
- The study design is observational and does not reflect any causal associations.
- The treated and untreated cohorts are based on the assumption that patients take their filled treatment and do not account for any inpatient treatment use.



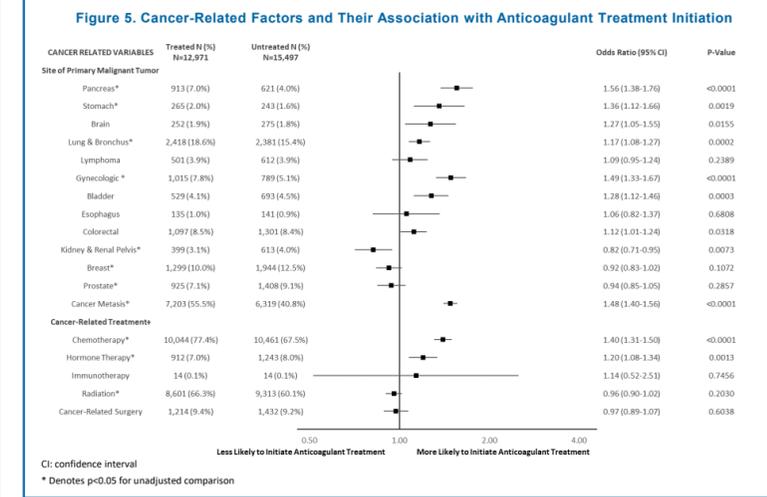
CI: confidence interval; COPD: chronic obstructive pulmonary disease; NCI: National Cancer Institute
* Denotes p<0.05 for unadjusted comparison
** Only involving the lower extremities
*** Pelvic/orthopedic surgeries only

Conclusions

- The decision to initiate anticoagulant treatment among cancer patients with VTE is associated with a range of cancer-related factors, VTE-related factors and overall comorbidity burden.
- Among VTE patients with active cancer, more than 50% of patients did not receive any outpatient anticoagulant treatment during 30 days of index VTE event.



CI: confidence interval; DVT: deep vein thrombosis; PE: pulmonary embolism; VTE: venous thromboembolism
* Denotes p<0.05 for unadjusted comparison
** Provoked VTE was defined as events that were preceded by hormone therapy, fracture/trauma involving lower extremities, pelvic/orthopedic surgery, or hospitalization for any reason for ≥ 3 days during the 3 months prior to the index VTE event.



CI: confidence interval
* Denotes p<0.05 for unadjusted comparison

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Disclosures

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