A Review of Direct Oral Anticoagulant Management Among Cancer Patients and Subsequent Implementation of a Pharmacist-driven Coagulation and Cancer Clinic

Justin R. Arnall, PharmD, BCOP®; Kristyn Y. DiSogra, PharmD, BCOP®; Nicole Cowgill, PharmD, BCOP, CSP, DPLA®; Laura Skaft, PharmD, BCACP, CPP®; Donald C. Moore, PharmD, BCPS, BCOP, DPLA®; Chris Larkin, PharmD, BCOP, CPP®; Jai Patel, PharmD, BCOP, CPP®

Atrium Health Specialty Pharmacy Service, Charlotte, NC, Atrium Health Chronic Care Management, Concord, NC, Levine Cancer Institute, Concord, NC, Levine Cancer Institute, Charlotte, NC

Background

- Venous thromboembolism (VTE) is the second leading cause of death with increased morbidity and mortality in cancer patients
- Cancer patients are at high risk of VTE due to risk factors related to their individual characteristics, diagnosis, prescribed treatment, and biomarkers/laboratory values
- Cancer patients have risk factors for both bleeding and recurrent thrombosis
- Cancer patients require longer duration of anticoagulation and may qualify for thromboprophylaxis due to the high risk of VTE
- Low molecular weight heparins (LMWH) have been the preferred therapy for treatment of cancer-related VTE
- Since 2018, updated guidelines include consideration of Direct Oral Anticoagulants (DOACs) for VTE treatment and thromboprophylaxis in high-risk cancer patients

Significance

- Recent literature has shown DOACs to be safe and effective for cancer-related VTE and both LMWH and DOACs are preferred agents over warfarin
- There are several complexities with anticoagulation therapy selection in cancer patients:
  - High recurrence rate
  - Risk of bleeding
  - Transition of care from inpatient admission
  - Drug–disease interactions
  - Drug–drug interactions
  - Organ dysfunction
  - Thrombocytopenia
  - Complex selection of anticoagulant and oncology
  - Identification and evaluation of high-risk cancer patients for VTE prophylaxis
- We evaluated 40 cancer patients initiated on DOAC treatment and within 6 months we identified no recurrent thrombotic events and a 2.5% discontinuation rate
- We evaluated thromboprophylaxis in those at highest VTE risk based on tumor type (including pancreatic, stomach, lung, bladder, lymphoma, gynecologic, and genitourinary) and noted that 55% of patients were candidates for thromboprophylaxis with Khorana VTE Risk Score of ≥2, but only 2.5% were initiated on thromboprophylaxis
- Our clinical experience suggests that the broad consideration of DOACs for cancer-related VTE treatment and slow adoption of thromboprophylaxis in practice offers an opportunity for pharmacy services to support this patient population

Objective

- To support the growing complexities of anticoagulation treatment and thromboprophylaxis in cancer patients through the optimization of anticoagulation and oncologic therapy in cancer patients

Methods

Establishing an on-site clinic

- We expanded protocols and practice models from our ambulatory care anticoagulation clinic services and telecommunication models from our specialty pharmacy service to provide location and infrastructure for this subspecialized clinic
- Cancer center pharmacy specialists that work with the multidisciplinary team and Hem/Onco providers identify clinic candidates and submit patient referrals
- Hematology/Oncology clinical pharmacists from the specialty pharmacy service work out of the anticoagulation clinic that was previously established (in the building next to the oncology clinic) and staff the clinic one day per week
- For patients who are stable and have had all cancer related concerns addressed by the CCC, a referral from the CCC is submitted to the general anticoagulation clinic that was previously established (in the building next to the oncology clinic) and staff the clinic one day per week
- For patients who are stable and have had all cancer related concerns addressed by the CCC, a referral from the CCC is submitted to the general anticoagulation clinic that was previously established (in the building next to the oncology clinic) and staff the clinic one day per week

Conclusions

- This unique clinic offers insight into methods of collaboration between common pharmacy groups and practices to support the launch of a novel service (Outpatient anticoagulation / Specialty Pharmacy / Hematology/Oncology)
- This clinic represents the first subspecialized clinic launch completed by our integrated specialty pharmacy service, demonstrating a shift towards a patient-focused approach to anticoagulation in malignancy there is opportunity for pharmacists to lead optimized practices

Contact Info

Nicole.Cowgill@atriumhealth.org

Acknowledgements

- Justin Arnall is a consultant / member of the advisory board for Oncopeptides and AstraZeneca
- Nicole Cowgill is a consultant of the advisory board for Bristol Myers Squibb
- Donald Moore is a consultant / member of the advisory board for Oncopeptides
- Nicole Cowgill is a consultant of the advisory board for Novartis
- Jai Patel is a consultant / member of the advisory board for Bayer and has received grant funding from Bristol Myers Squibb
- Donald Moore is a consultant / member of the advisory board for Novartis

Thank you to the following pharmacy student researchers who helped us evaluate our clinic site and collect data on this clinical care opportunity: Tamia Jones, Susan Ngo, Anna Brown, and Jessica Shue

Resources


Figure 1. Cancer and Coagulation Clinic (CCC) patient referral and clinic workflow