

Children's Mercy Kansas City

SHARE @ Children's Mercy

Research Days

May 6th, 11:30 AM - 1:30 PM

Primary Venous Thromboprophylaxis in Pediatric Oncology Patients

Kyra McCarty

Follow this and additional works at: <https://scholarlyexchange.childrensmercy.org/researchdays>



Part of the [Hematology Commons](#), [Oncology Commons](#), [Pediatrics Commons](#), [Preventive Medicine Commons](#), and the [Quality Improvement Commons](#)

Primary Venous Thromboprophylaxis in Pediatric Oncology Patients

Submitting/Presenting Author (must be a trainee): Kyra McCarty, DO

Primary Email Address: kmccarty@cmh.edu

Medical Student

Resident/Psychology Intern (≤ 1 month of dedicated research time)

Resident/Ph.D/post graduate (> 1 month of dedicated research time)

Fellow

Primary Mentor (one name only): Lauren Amos, MD

Other authors/contributors involved in project:

IRB Number: STUDY00001874

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

Dr. McCarty is the principal investigator on this project.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:

The Virchow's Triad principles of venous stasis, endothelial damage, and hypercoagulability are all features of malignancy and contribute to the increased risk venous thromboembolism (VTE) seen in oncology patients. Additionally, certain chemotherapy treatments, presence of a central venous catheter and immobility are also intrinsically associated with malignancy diagnoses and exacerbate this risk. However, much debate exists over the use of thromboprophylaxis in the pediatric population, primarily due to lack of evidence regarding safety and efficacy, primarily the risk of major bleeding. Multiple retrospective studies have attempted to identify the primary risk factors for VTE in this pediatric oncology patient population, but little data exists regarding the use of VTE prophylaxis in pediatric oncology patients. Risk factors for VTE in pediatric oncology patients include; age greater than 12 years, obesity (BMI >30), intra-thoracic malignancy, presence of central venous catheter, receipt of asparaginase chemotherapy, receipt of steroids, personal or family history of thrombosis or thrombophilia.

Objectives/Goal:

This research aims to understand the use of primary pharmacologic prophylaxis in pediatric oncology patients who are at high-risk for VTE. The primary objective in this study was to evaluate the use of primary pharmacologic thromboprophylaxis in pediatric oncology patients with known risk factor for thromboembolism. As a secondary objective, we evaluate the incidence of venous thromboembolism (VTE) in pediatric oncology patients with known risk factors for thromboembolism.

Methods/Design:

This is a secondary use of clinical care data study (retrospective chart review) including all pediatric oncology patients at Children's Mercy Hospital diagnosed between Jan 1, 2014 and Dec 31, 2018. A pre-screening report was generated from the EMR to identify potentially eligible patients. Pre-screening report inclusion criteria include ICD 9/10 codes for oncologic diagnosis, and one or more of the high-risk criteria outlined in the background. The EMR of each patient included on the pre-screening report was manually reviewed to confirm the below eligibility criteria prior to enrollment in the study. Data collected included date of birth, gender, weight, BMI, cancer diagnosis, central venous catheter type and dates of placement, chemotherapy administered, occurrence of VTE, personal and family history of thrombosis and/or thrombophilia. Analysis includes primarily descriptive statistics.

Results:

Retrospective chart review has demonstrated that VTE prophylaxis is prescribed in very few pediatric patients who meet high-risk criteria for thromboembolism. Initial data demonstrates that 0.004% percent (1/225) of our study population were prescribed VTE Prophylaxis prior to occurrence of thromboembolism. Venous thromboembolism occurred in 0.09% percent (22/225) of our study population thus far. Data collection is ongoing.

Conclusions:

Primary pharmacologic VTE prophylaxis is used infrequently in pediatric oncology patients, despite known risk factors for thrombosis, due to perceived risk of major bleeding events.