

Prevalence of venous thromboembolism (VTE) and implementation of risk assessment in a pediatric hospital

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Abstract

Background: The development of venous thromboembolism (VTE) in children is considered rare and unusual but the incidence is approaching 0.2% in North America. The true incidence of these complications in the pediatric population is suspected to be grossly underreported. Assessment of risk for VTE is routinely performed in the adult inpatient population, but is often overlooked in pediatrics. This may be due to the assumption that pediatric patients are not at as great of risk for VTE compared to the adult population.

Objectives: The primary objective of this study is to identify the prevalence of VTE in the inpatient pediatric population in a large, urban health system. The secondary objectives of this investigation are to assess risk factors associated with the development of VTE in pediatric patients and to develop a risk assessment for institutional use in the pediatric population at Clarian Health Partners.

Methods: This report will be an exploratory, descriptive, retrospective analysis of pediatric patients with a discharge diagnosis of an initial VTE between the dates of September 2002 through August 2007. In order to ensure maximal inclusion, the patients with a VTE discharge diagnosis will be cross-referenced with a list of patients that have a positive radiographic screen for VTE during the study period. The finalized and confirmed VTE patient list will be matched with pediatric patients that did not develop a VTE during a hospitalization within the study period. Controls will be matched on age, sex, length of hospital stay, and admitting service. Data to be collected includes age; gender; weight; height; body mass index; length of hospital stay; length of immobilization; admission diagnosis; presence of indwelling catheters; surgical procedure performed; presence and description of traumatic injury; malignancy; and presence of systemic infection. Other parameters to be collected include pertinent laboratory data such as aPTT, INR, D-dimer, hypercoagulability studies, and the presence of mechanical or pharmacological VTE prophylaxis.

Analysis: Statistical analysis will include Student's t-tests, Fisher's exact test, and chi-square tests as appropriate. An estimate of relative risk of VTE will be represented by calculated odds ratio. Logistic regression model analysis will be conducted.