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Using the Caprini Risk Score to Increase VTE Awareness in the Community: The Know Your Score Project

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Abstract

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Introduction

Venous thromboembolism (VTE) is a leading preventable cause of death following surgery or hospitalization. One method for preventing death is to perform a thorough risk assessment using the 40-element Caprini risk score (CRS).[1] This score has been validated in more than 5 million patients involving more than 250 publications. The CRS identifies high-risk patients so they can be protected from fatal thrombosis by using anticoagulant prophylaxis for the length of time shown in clinical trials to be efficacious. Studies show that 99% of fatal pulmonary emboli can be prevented with an appropriate course of unfractionated or low molecular weight heparin prophylaxis postoperatively.[2] Proper patient selection using Individual thrombosis risk assessment is key to preventing fatal events. Collecting 40 elements of data at the time of illness, injury or emergency surgery is problematic. One solution consists of involving patients in their medical care by completing a risk assessment prior to any injury or hospitalization. This is best done with family members (including distant relatives). The information can be shared with their personal physician for verification and placement in the permanent medical record.[3]

The Global Thrombosis Forum (GTF) is dedicated to development of innovative approaches to further education and research programs among young students worldwide. We designed a pilot program for the GTF students involving a unique method of prospective data collection.[4] The unique concept of distributing the CRS document to students and having them share the form with their parents and grandparents produced excellent but unanticipated results. Family members huddled together and collected in-depth data about the past history of blood clot events in relatives. The quality of the collected data was superior to anything collected during a patient interview. Family members were thorough, helping with homework so the students would get a good grade. This educational program is also intended to improve community understanding of VTE. The patient friendly CRS and a letter describing thrombosis-related epidemiological facts were distributed by two Global Thrombosis Forum high school students (PS & GS) to their classmates and friends after approval from school authorities. These documents were to be shared with family members, suggesting that they complete the risk assessment process. Responses were received from 1219 individuals including students, friends, family, and GTF residents in

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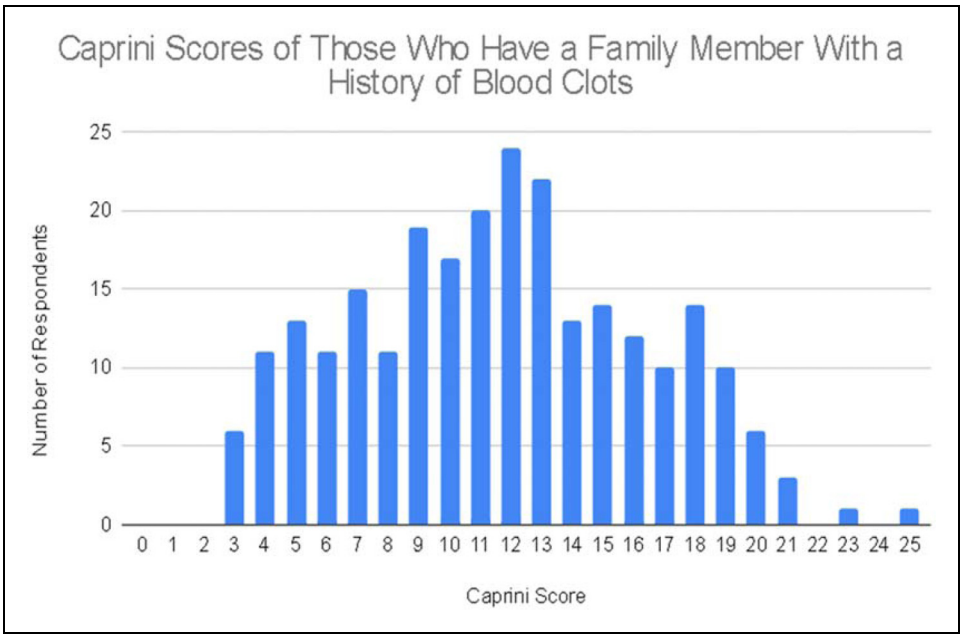

Figure 1. Represents the Caprini score of those who have a family history of blood clots.

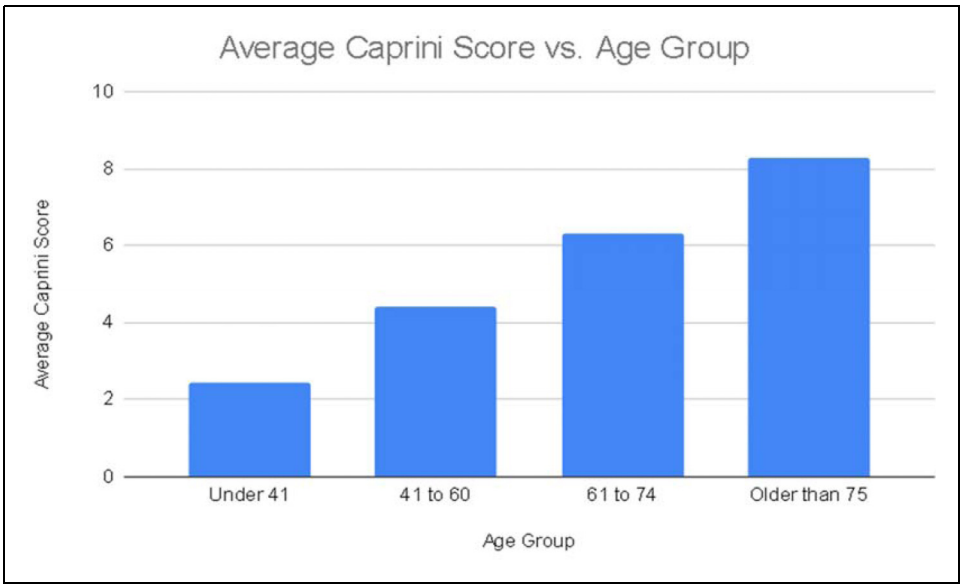

Figure 2. Highlights the average Caprini score vs age group. Patients who were 75 years and older had an average score of 8 which places them at high-risk category.

Florida, Georgia and Missouri. These individuals were eager to help and completed the form voluntarily.

The CRS is unique since it asks for ***family history of thrombosis***, a critical factor, since patients with a family history have a significant chance of developing VTE postoperatively.[5] Family history of blood clots was reported in 22% of respondents (Figure 1). This was the most significant finding from the survey and will require future validation to determine accuracy of these data. Most individuals (59.4%) were 41 years of age or less, and 28% had a BMI > 25. Hospitalization within the past month occurred in 10.4%; 9% had insulin dependent diabetes; swollen legs were present in 10.7% of the respondents. Patients 75 years of age or older had a CRS in the highest risk category of 8 + (Figure 2). These elderly patients would fall into the highest risk category for developing a VTE postoperatively.[6] All data were anonymous and no personal information was collected.

Our exploratory study shows the importance of involving patients and family members in gathering personal health data, especially family history of blood clots. Family

members were eager to help students with this project, enhancing completeness of family history. Family history of thrombosis is often NOT collected at the time of hospital admission and failure to account for this risk factor may lead to inaccurate thrombosis risk assessment, thus endangering safety of the patient. We were surprised to find a very high incidence (22%) of respondents having a blood clot in their family. Having this information available for future use in case of hospitalization or surgery is critical to predicting thrombotic risk. Participants were urged to share the results with their personal physician and have the data placed in their medical record.

Future studies will be required to validate the accuracy of these data. Nevertheless, this unique method of gathering important data regarding thrombosis risk may simplify the data collection process. We know that collecting 40 elements regarding thrombosis risk provides an excellent guide to the selection of thrombosis prophylaxis modalities. Unfortunately, collecting these data is a time-consuming task and, often, some questions are not asked. Widespread implementation of this methodology may provide a mechanism for thorough risk assessment profiles, resulting in more precise use of thrombosis prophylaxis modalities. This in turn may reduce fatal thrombotic events.

Conclusions

The substantial incidence of important comorbidities seen in this relatively young group of individuals, especially family history of thrombosis, illustrates the value of this method of data collection. The success of this program establishing a baseline CRS for individuals prior to injury, hospitalization, or surgery should result in improved use of thrombosis prophylaxis and lower the death rate from fatal pulmonary emboli.

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Declaration of Conflicting Interests

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