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Bleeding Disorder Referrals to Hematology Clinic: A Single Institution Experience

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IRB Number: STUDY00001363

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

As a trainee on this project, I was involved in data collection including patient de-identification and chart review, interpretation of results, and formulation of the abstract. My role began with chart review along with data input into the REDCap system. Following data analysis done by Dr. Yeh, I compiled the collected results into charts. I wrote the abstract with edits from Drs. Olaiya and Carpenter, and Ms. Bilynsky.

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

Background:

Our center receives hundreds of referrals yearly for bleeding disorder evaluation both due to bleeding symptoms and secondary to routine preoperative laboratory testing. The evaluation for a bleeding disorder can be challenging due to the wide variability of symptoms as well as the need for accurately interpreting lab results. Bhasin et al showed that 4% of patients referred to hematology based on a preoperative coagulation evaluation had a clinically relevant bleeding disorder. Currently there is little published about the referral patterns to pediatric hematology and the outcomes of these referrals.

Objectives/Goal:

To characterize our hematology referrals for bleeding disorder work up.

To describe the diagnostic outcomes from these referrals.

To estimate the proportion of bleeding disorders diagnosed from these referrals.

To identify referral factors that are associated with being diagnosed with a bleeding disorder.

Methods/Design:

Single center, retrospective chart review. Patients referred and/or scheduled to be seen for a bleeding disorder evaluation at Children's Mercy Hospital from 07/1/2018 until 06/30/19. Data was entered directly into REDCap, a secure, web-based, user-limited, electronic data capture tool with audit trails. Akaike Information Criterion (AIC) was applied to logistic regression to identify factors associated with diagnosis of a bleeding disorder.

Results:

A total of 373 patients (average age of 8 years; 56% female; 69% Caucasian) were included. The majority of patients had a bleeding disorder ruled out (255/373). Forty total patients were diagnosed with a bleeding disorder (11%). Of our referred patient sample, 6% (21/373) were diagnosed with von Willebrand disease, 4% (14/373) were diagnosed with a platelet function disorder, and 1% (4/373) were diagnosed with a factor deficiency. The most common reason for referral was bleeding symptoms (211/373). The average amount of days between referral and appointment was 31.5 days with a median of 2 visits, ranging from 1 to 5 visits, for a clinical diagnosis. Forty percent of referrals were for preoperative clearance, 36% for family history, and 57% for symptoms. Most of the referrals (164/373) were from Otolaryngology (ENT). While ENT had the majority of the referrals, the diagnostic accuracy was best from the primary care specialties. Of those diagnosed, 43% (17/40) were referred from primary care including adolescent medicine and gynecology who accounted for 30% (110/373) of the referrals. Logistic regression showed that the odds of a bleeding disorder diagnosis decrease by 8% for every year increase in age and was 3 times higher among patients having abnormal coagulation labs at the time of referral as compared to their counterpart when other variables were controlled.

Conclusions:

This study illustrates that the proportion of bleeding disorders diagnosed was 10.7%. While there are referral factors that predict the likelihood of a bleeding disorder, larger scale studies are needed to improve referral processes. This study also provides information about the time between a referral and a hematology clinic appointment.