

Screening of Bleeding Disorders in School-Age Children by Using Thai Pediatric Bleeding Questionnaire (TPBQ)

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Introduction

Mild bleeding disorders are under diagnosis because the symptoms are usually inattentive. Recently, Thai Pediatric Bleeding Questionnaire (TPBQ) has been developed, and was first studied in patients with known bleeding disorders compared to healthy children. A score ≥ 3 was suggestive of bleeding disorders. TPBQ has not been used for screening bleeding disorders in children.

Objective

To demonstrate the usefulness of TPBQ as a screening tool in school-age children.

Materials and Methods

Methods and populations

- Step 1:** Information regarding the bleeding disorder was first provided to parents of Grade 10 children from two high schools. Following this, the children of consenting parents were enrolled in the study.



Educate parents about bleeding disorders



Poster illustrates symptoms

- Step 2:** The TPBQ was introduced to the students in a small group of 5-6 facing each other with one facilitator, a pediatrician from the study team, per group.

Thai Pediatric Bleeding Questionnaire



Students answered the TPBQ with Pediatricians

- The Pictorial Bleeding Assessment Tool was added to the TPBQ for students reporting excessive menstruation.

Pictorial Bleeding Assessment Tool

- Step 3:** Students with the score ≥ 3 were given an appointment, together with parents, to the Hematology Clinic. Then, the TPBQ was reapplied to verify the abnormal scores.

Laboratory testing

- Children who had TPBQ score ≥ 3 had blood tests for complete blood count, bleeding time, PFA-100, coagulogram, von Willebrand factor antigen (vWF:Ag), ristocetin cofactor activity, factor VIII activity, platelet function test, and fibrinogen level.

Results

- A total of 305 students, 59% female and mean (SD) for age was 15.1 (1.4) years were enrolled in the study. The median (range) of TPBQ scores, according to the PBQ and ISTH scoring keys, were 0 [(-2)-7] and 0 [0-6], respectively.
- A total of 8 students, 7 females and 1 male, had scores ≥ 3 . The most common problem was bleeding in the oral cavity, followed by epistaxis, hypermenorrhea and bleeding after dental procedure (Figure 1). At present, 6 students and their parents were seen at the clinic and had blood tested. Two out of 6 students diagnosed with type 1 von Willebrand disease. The overall prevalence of bleeding disorders was 0.6%.

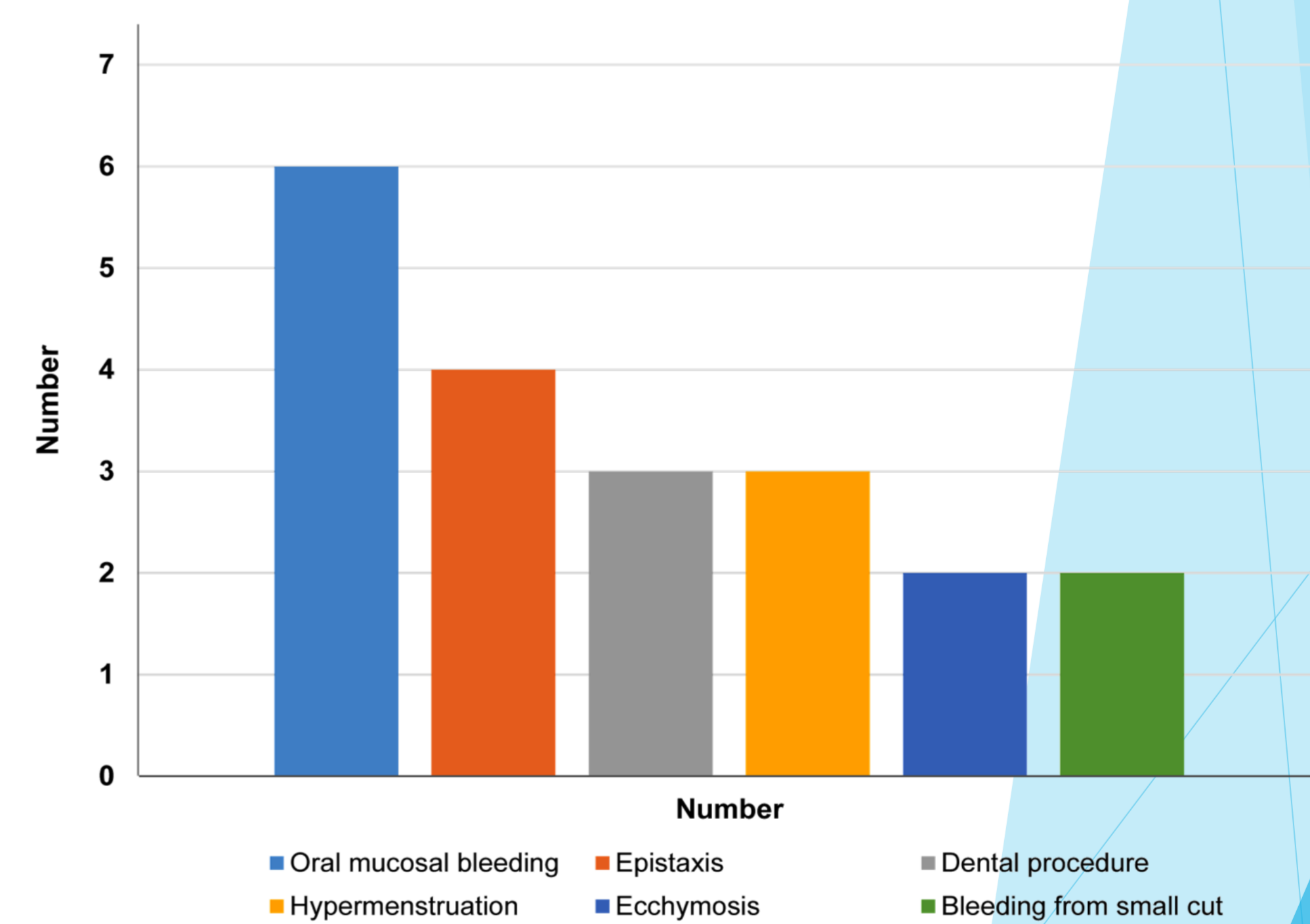


Figure 1. Type of bleeding among 7 patients who had TPBQ ≥ 3

Conclusion

TPBQ can be used as a screening tool in normal children. Although children are able to provide most of the information of bleeding symptoms and may not aware of their bleeding problems during early childhood, the symptoms of bleeding in subjects with inherited bleeding disorders could persist through the older aged group. Further study to apply the TPBQ in larger population is recommended.

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