Hemostatic Defects in Thai Adolescents with Menorrhagia

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Twenty-eight adolescents with menorrhagia by pictorial blood loss assessment chart (PBAC) criteria were investigated for underlying hemostatic defect. CBC, ABO blood group, bleeding time, APTT, PT, TT, FVIII:C, VWF:Ag, RiCoF and platelet aggregation study were evaluated. Six patients (21.4%) were addressed with underlying hemostatic defect. Of these, severe aplastic anemia (n = 1) and thrombotic thrombocytopenic purpura (n = 1) were identified in 2 patients with low platelets after an initial CBC. Four patients with prolonged bleeding time demonstrated inherited hemostatic defect: von Willebrand disease (VWD) type 3 (n = 1), Glanzmann thrombasthenia (n = 1) and Bernard-Soulier syndrome (n = 2). Median PBAC score of patients with hemostatic defect was significantly higher than that of patients with unknown cause of menorrhagia (436.5 vs. 251.3, p = 0.01). After the exclusion of six patients with well-identified bleeding risks, isolated abnormal platelet aggregation response to adrenaline was detected in 11 (50%) adolescents using platelet aggregation study. No significant difference of median PBAC score was noted among patients with and without evidence of this impaired responsiveness to adrenaline. In addition, the authors also found an abnormal platelet aggregation with adrenaline stimulant in 15 (75%) among 20 healthy female controls who had no history of bleeding diathesis. No significant difference in frequency of abnormal platelet aggregation to adrenaline was observed between affected cases and controls. In summary, an impaired responsiveness of platelets to adrenaline in the present study is insufficient to support its risk of bleeding. On the contrary, the simple test such as CBC and bleeding time revealed a worthy contribution to investigate coexisting coagulopathy in adolescents with menorrhagia.

Keywords: *Thai Adolescents, Menorrhagia, Hemostatic disorders, Pictorial blood loss assessment chart (PBAC), Adrenaline receptor defect*

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Menorrhagia constitutes a major menstrual problem affecting a large number of women during early reproductive life[1,2]. Though an ovulation and dysfunctional uterine bleeding (DUB) were assumed to be predominant causes of menorrhagia during menarche, less than 50% of these affected adolescents had been identified specific etiology[3]. To relieve this physical and mental health impact of adolescents with menorrhagia, further investigation to determine an underlying cause of this problem should be performed including local pelvic pathology and inherited hemostatic assessment. Hence, clinical and laboratory evaluation among female adolescents with abnormal vaginal bleeding essentially required the role of a gynecologist and hematologist to address both menorrhagia causes and coexisting bleeding disorders. While supportive treatment with hormonal therapy, iron supplementation, and non-steroidal anti-inflammatory drugs (NSAIDs) are basically helpful to decrease vaginal bleeding. By the way, in which patients with well-identified hemostatic defect, specific treatment, for instance, blood component, factor concentrate and anti-fibrinolytic agent can be added to reduce morbidity of this health burden.

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Material and Method

After an informed consent was completed, 10-15 years of age adolescents with a history of menorrhagia referring to the Department of Pediatrics, Ramathibodi Hospital during July 1st, 2004 to May 31st, 2007 were investigated for causes of abnormal vaginal bleeding. Menstrual blood loss was evaluated for two consecutive menstruation cycles using the pictorial blood loss assessment chart (PBAC) to confirm and assess degree of menorrhagia. Patients with PBAC score greater than 100 which was equivalent to greater than 80 mL amount of blood loss measuring with alkali hematin analysis of sanitary towels were defined as menorrhagia and enrolled to the present study[4-6]. After exclusion of patients with known gynecological abnormalities and patients with a history of taking antiplatelet and anticoagulant medications within 2 weeks prior to the present study, full battery of bleeding investigation including history interviewing focused on bleeding tendency in patients and their family members (easy bruising, frequent epistaxis, gum bleeding, excessive bleeding after dental extraction, post-operative, and post-partum hemorrhage), physical examination, and self-recorded PBAC were assigned for these female adolescents.

Initial hematologic tests were performed including complete blood count (CBC), modified Ivy's method bleeding time (BT), activated partial thromboplastin time (APTT), prothrombin time (PT), thrombin time (TT), and ABO blood typing.

Factor VIII clotting activity (FVIII: C) was measured by one-stage technique on the ACL 3000 coagulometer. Von Willebrand factor antigen (VWF: Ag) and ristocetin cofactor activity (RiCoF) were analyzed by enzyme-linked immunosorbent assay. Platelet aggregation study with collagen (10 mg/mL), ADP (5 and 10 μmol/mL), ristocetin (1.2 mg/mL) and adrenaline (5 and 10 μmol/mL) was performed in platelet rich plasma (PRP) using PACK-4 (platelet aggregation chromogenic kinetics system)[7]. PRP from the patients and normal donors were tested aggregation responses on stimulation with different agonists. However, bleeding time and platelet aggregation were not done in patients with platelet count below 100 x 10^9/L. The authors defined the criteria of impaired responsiveness to platelet agonist by a reduction of platelet aggregation response less than 55% of normal control study. In case an abnormal platelet aggregation was observed to any specific agonist, repeated test with the same and the higher concentration of that certain stimulant was also re-evaluated.

Females with normal menstrual history aged under 25 years were included as a control population. All these volunteers were documented as healthy female controls with normal amount of vaginal blood loss by questionnaire developed by Janssen CA et al[8]. The authors adapted the questions from this previously mentioned study comprising of how often tampons or pads were changed on the heaviest day of their menstrual cycle and how their quality of life was affected by the degree of menstruation to verify their period condition instead of PBAC recording. However, all laboratory tests were also completed in normal females but with an exception of bleeding time.

SPSS version 11.5 was used for descriptive and inferential statistical analyses with a significant p-value of 0.05. Continuous and categorical data were analyzed using Mann-Whitney U test, Chi-square and Fisher Exact test, respectively.

Results

Twenty-eight patients with menorrhagia were included in the present study with median age of presentation of 12.5 years (range 9-16). Twelve patients (42.9%) had menorrhagia since menarche. Five patients (17.8%) had a family history of abnormal bleeding. Eleven patients (39.3%) experienced other bleeding manifestations consisting of ecchymosis, epistaxis and hematochezia. For this latter patient with lower gastrointestinal hemorrhage, Peutz-Jegher's syndrome was identified after gastroscopy, colonoscopy and other intensive medical evaluation. However, no evidence of coexisting hemostatic defect was detected. Median PBAC score of all patients who were eligible in the present study was 294 (range 119-508). Measurement of hemostatic profiles was also investigated for healthy females. Furthermore, comparative study of hematologic test results between patients and controls was performed using Mann-Whitney U test. Basic characteristics of these two populations are described in Table 1 with only significant differences in age and hemoglobin level observed between the two groups.

Underlying hemostatic disorders were ascertained in six patients (21.4%) with menorrhagia. Detailed characteristics of these patients are illustrated in Table 2. Von Willebrand disease (VWD) type 3 was identified in a 15-year-old female with recurrent epistaxis and persistent menorrhagia which usually lasted for 2 weeks. Iron deficiency anemia with a remarkably low hemoglobin level of 4.9 g/dL was also detected. Additionally, a younger sister of this

patient was diagnosed with VWD type 3. After an inherited coagulopathy was endorsed, this patient was successfully treated for abnormal vaginal bleeding with oral hormonal medication under the care of a gynecologist and pediatric hematologist.

Table 1. Characteristics and hematologic test results of 28 patients with menorrhagia and 20 healthy female controls

	Patients (n = 28) mean ± SD	Controls (n = 20) mean ± SD	p-value
Age; y	13.1 ± 2.4	20.8 ± 1.6	<0.001
Hemoglobin; g/dL	10.8 ± 3.0	13.2 ± 1.2	0.001
Platelets; x10^9 /L	313.7 ± 157.3	259.9 ± 47.2	0.60
FVIII:C; %	93.0 ± 28.5	84.3 ± 22.4	0.86
VWF:Ag; %	109.1 ± 47.5	100.5 ± 27.2	0.90
RiCoF; %	87.1 ± 30.2	80.8 ± 18.6	0.81

Thrombocytopenia was observed in two patients with severe aplastic anemia and thrombotic thrombocytopenic purpura (TTP), respectively. For a 12-year-old girl with severe aplastic anemia, she presented with menorrhagia since menarche. Her menstruation was frequently heavy and continuing longer than 10 days in each period. Initial CBC revealed hemoglobin of 8.9 g/dL, total white blood cell count of 4,100 /mL with lymphocyte predominated, and platelet count of 16 x 10^9/L. Tranexamic acid was used on day 1 to 7 to control each menstrual cycle with satisfactory response as well as oral prednisolone and testosterone enanthate to treat aplastic anemia. TTP was diagnosed in the latter patient with thrombocytopenia. Her first manifestations included high fever and history of extremely profuse menorrhagia before arrival. Her first CBC demonstrated hemoglobin of 7.0 g/dL and platelet count of 29 x 10^9/L. Peripheral blood smear indicated strong evidence of severe degree hemolysis and a significant increase of

Table 2. Characteristics of six patients with well-identified underlying hemostatic defects

	VWD	Aplastic anemia	TTP	Glanzmann thrombasthenia	Bernard-Soulier syndrome	Bernard-Soulier syndrome
Age; years	15	12	14	11	16	14
PBAC score	508	409	501	265	119	423
Bleeding diathesis history						
Family history	Yes	No	No	No	No	No
Ecchymosis	Yes	Yes	Yes	Yes	No	No
Epistaxis	No	Yes	No	No	Yes	Yes
Gingival bleeding	Yes	No	No	Yes	No	No
Post-operative and dental extraction bleeding	No	No	No	No	No	No
Hemoglobin; g/dL	4.9	8.9	7.0	10.9	11.2	11.3
Platelets; x10^9/L	601	16	29	215	256	414
Blood type	A	B	O	O	B	B
APTT; sec	48.4	19.8	28.2	39.0	44.2	23.0
PT/INR; sec/ratio	14.8/1.3	11.0/1.0	11.6/1.0	14.6/1.2	18.9/1.3	11.7/1.0
TT; sec	8.1	11.4	8.8	9.3	12.8	10.8
Bleeding time; min	30	Not tested	Not tested	15	13	12
FVIII:C; %	7	276	120	126	140	140
VWF:Ag; %	0	274	126	141	74	101
RiCoF; %	0	133	43	76	70	119
Platelet aggregation study	Reduce with ristocetin	Not tested	Normal	Reduce with adrenaline ADP, and collagen	Reduce with ristocetin and adrenaline	Reduce with ristocetin and adrenaline

VWD = Von Willebrand disease; TTP = thrombotic thrombocytopenic purpura; PBAC = pictorial blood loss assessment chart; APTT = activated partial thromboplastin time; PT = prothrombin time; TT = thrombin time; INR = international normalized ratio; FVIII:C = factor VIII clotting activity; VWF:Ag = Von Willebrand factor antigen; RiCoF = ristocetin cofactor activity

schistocytes. Bone marrow aspiration was depicted without evidence of leukemia and bone marrow failure. For TTP treatment; after a successful 5-day course of plasma exchange transfusion, intravenous methylprednisolone was administered at a dose of 2 mg/kg/day in three divided doses for one week and then tapering down with oral prednisolone in 12 weeks.

Platelet function defect was identified in three patients (10.7%). Apart from menorrhagia, frequent epistaxis was also observed in two patients and led to iron deficiency anemia. Markedly prolonged bleeding time and abnormal platelet aggregation response to ristocetin and adrenaline were used to diagnose a congenital platelet function disorder called Bernard-Soulier syndrome[9]. For the patient with Glanzmann thrombasthenia, additional bleeding, for example, easy bruising and delayed blood oozing post dental extraction were noted. In this patient, bleeding time was notably prolonged above 15 minutes. Platelet aggregation study determined distinctly decreased response to collagen, ADP and adrenaline, whereas the response to ristocetin reduced minimally[10]. For menorrhagia treatment, combination of oral contraceptive pills and tranexamic acid were able to control vaginal blood loss efficaciously.

Initial characteristics: PBAC score, hemoglobin, platelet count, APTT, PT, PT percent, TT, bleeding time, FVIII: C, VWF:Ag, and RiCoF between six patients with well-identified hemostatic defect and 22 patients without underlying bleeding disorders were compared using Mann-Whitney U test. Among these, significantly higher PBAC score of patients in the former group was demonstrated (436.5 vs. 251.3, p = 0.01) in Table 3.

After the exclusion of six patients with well-established underlying bleeding risks, abnormal platelet aggregation response was detected in 15 (68.0%) of total 22 females. Of these, isolated abnormal platelet aggregation to collagen, ADP, ristocetin and adrenaline agonist was observed in 1 (4.5%), 1 (4.5%), 2 (9.0%), and 11 (50.0%) females, subsequently. Hence, the authors retested platelet aggregation study in most of these patients with all agonists. Likewise, the second test confirmed a similar reduction of platelet aggregation.

Nonetheless, no significant difference of median PBAC score and other hematological parameters between patients with and without adrenaline receptor defect was observed (Table 3). This is to say, there is no clinical correlation between abnormal vaginal blood loss and impaired responsiveness of platelets to adrenaline.

Table 3. PBAC score and hematological parameters between patients with and without well-established coexisting hemostatic defects, and between patients with and without impaired responsiveness to adrenaline

	Patients with hemostatic defects mean ± SD (n = 6)	Patients without hemostatic defects mean ± SD (n = 22)	p-value	Patients with impaired platelets responsiveness to adrenaline mean ± SD (n = 11)	Patients without impaired platelets responsiveness to adrenaline mean ± SD (n = 11)	p-value
PBAC score	436.5 ± 150.9	251.3 ± 139.6	0.01*	240.1 ± 134.4	262.5 ± 150.3	0.91
Hemoglobin; g/dL	10.9 ± 3.4	10.8 ± 3.0	1.00	10.3 ± 3.6	11.4 ± 2.2	0.82
Platelets; $x10^9$/L	322.3 ± 118.7	311.4 ± 168.6	1.00	354.8 ± 207.1	268.0 ± 112.4	0.76
APTT; sec	32.0 ± 5.0	33.8 ± 6.3	0.64	35.5 ± 7.4	32.1 ± 4.8	0.74
PT; sec	13.5 ± 1.1	13.8 ± 1.8	0.80	14.2 ± 2.1	13.4 ± 1.3	0.78
PT percent; %	77.0 ± 9.4	79.2 ± 14.1	0.85	77.3 ± 18.4	81.0 ± 8.4	0.88
TT; sec	8.6 ± 0.8	9.1 ± 1.2	0.49	9.3 ± 1.5	8.9 ± 0.9	0.85
Bleeding time; min	2.5 ± 0.6	5.0 ± 6.5	0.21	7.1 ± 8.8	2.9 ± 0.7	0.73
FVIII:C; %	92.0 ± 30.2	93.2 ± 28.8	0.98	96.2 ± 26.4	90.3 ± 32.0	0.87
VWF:Ag; %	108.7 ± 30.0	109.3 ± 51.9	0.98	114.4 ± 68.4	104.1 ± 30.3	0.91
RiCoF; %	107.5 ± 26.1	81.6 ± 29.4	0.05	81.8 ± 37.4	81.4 ± 20.2	0.99

* significant difference at p-value < 0.05

PBAC = pictorial blood loss assessment chart; APTT = activated partial thromboplastin time; PT = prothrombin time; TT = thrombin time; FVIII:C = factor VIII clotting activity; VWF:Ag = Von Willebrand factor antigen; RiCoF = ristocetin cofactor activity

Table 4. Median percentage of platelet aggregation response to adrenaline between 22 patients and 20 healthy controls

	Control PRP (n = 22)	Impaired platelet aggregation to adrenaline (median ± SD)			Normal platelet aggregation to adrenaline (median ± SD)		
		Patients (n = 11)	Controls (n = 15)	p-value	Patients (n = 11)	Controls (n = 5)	p-value
Adrenaline 5 μmol/mL (%)	80.0 ± 14.7	8.7 ± 1.7	12.7 ± 5.5	0.15	72.0 ± 12.0	87.8 ± 19.6	0.46
Adrenaline 10 μmol/mL (%)	98.0 ± 14.0	12.3 ± 4.3	19.4 ± 9.3	0.25	Not tested	Not tested	Not tested

PRP = platelet rich plasma

Frequencies of each isolated abnormal platelet aggregation to specific agonist were compared between 22 patients with menorrhagia and 20 healthy female controls using Chi-square and Fisher Exact test. However, there was no significant difference in number of abnormal aggregation response to any of stimulants. Furthermore, median percent of platelet aggregation response to adrenaline between these two groups were also compared in Table 4 without significant difference.

Discussion

Previously published studies demonstrated a greater prevalence of von Willebrand disease in women with menorrhagia compared to the general population and recommended VWF assay as an initial investigation of this problem[11-13]. In this recent study, only one patient was diagnosed VWD which is notably lower than prevalence in a report from multicenter study[14]. Perhaps lower prevalence of VWD herein is likely to reflect a small number of cases in our study. In contrast, platelet function defect was found in a significant number within this investigation of hemostatic defect.

PBAC score was adopted in the present study as the diagnostic tool of menorrhagia. Besides, significantly higher PBAC score has determined the risk of underlying hemostatic defects. CBC and bleeding time are very helpful to be the first initial investigation for menorrhagia. In the present study, the authors observed their apparent contribution as quantitative and qualitative screening test of platelets. In order to minimize costly and time-consuming over-investigation, detailed family history and patient personal record should be obtained in females with menorrhagia. On the other hand, approaching to diagnosis of VWD itself is still problematic due to a variation of VWF: Ag in different times, tests and circumstances. Apart from the pertinent history of bleeding tendency, single VWF assay sometimes cannot establish a confirmed diagnosis for patients with VWD[15]. Additionally, lower VWF: Ag during menstruation was observed in several studies and this is more likely to exemplify the diagnosis of mild form VWD[16-19]. To lessen VWF: Ag variation, a specific day of menstrual cycle when patients having a blood test should be documented in case mild VWD is being encountered.

Among 3 patients with Glanzmann thrombasthenia and Bernard-Soulier syndrome, various mucocutaneous bleeding symptoms were clearly identified in accompany with prolonged bleeding time and abnormal platelet aggregation. That is why, platelet function defects can be addressed undoubtfully for these patients. On the contrary, patients with isolated abnormal platelet aggregation to adrenaline did not reveal other systemic bleeding or even prolonged bleeding time. Also, there was no difference in a frequency of this impaired responsiveness to adrenaline between patients and control. For this reason, adrenaline receptor defect cannot be constituted as a major etiology of menorrhagia in Thai adolescents due to its low diagnostic yield to indicate coagulation defects.

Kambayashi J et al described a prevalence of 16% abnormal platelet aggregation to adrenaline in a healthy Japanese population which is obviously smaller than in the present study[20]. In correspondence to this, further evaluation to find a relationship between isolated abnormal platelet aggregation to adrenaline and menorrhagia should be carried out[21].

Regarding the treatment of menorrhagia and underlying bleeding disorder, after hemostatic defect has been determined in each patient, several tailored approaches should be commenced simultaneously. A consultation between gynecologist, hematologist,

laboratory technician, pediatrician and registered nurse has to be progressed to facilitate quality of care for these affected adolescents. Multiple therapeutic modalities including hormonal medication, factor concentrate, tranexamic acid and blood component should be well-prepared for a prompt treatment of bleeding[22]. Furthermore, coagulation defect document has to be achievable in the medical record to urge an awareness of excessive bleeding risk during and after surgical intervention in these patients.

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References

1. Falcone T, Desjardins C, Bourque J, Granger L, Hemmings R, Quiros E. Dysfunctional uterine bleeding in adolescents. J Reprod Med 1994; 39: 761-4.
2. Mikhail S, Varadarajan R, Kouides P. The prevalence of disorders of haemostasis in adolescents with menorrhagia referred to a haemophilia treatment centre. Haemophilia 2007; 13: 627-32.
3. Oehler MK, Rees MC. Menorrhagia: an update. Acta Obstet Gynecol Scand 2003; 82: 405-22.
4. Higham JM, O'Brien PM, Shaw RW. Assessment of menstrual blood loss using a pictorial chart. Br J Obstet Gynaecol 1990; 97: 734-9.
5. Lee CA, Abdul-Kadir R. von Willebrand disease and women's health. Semin Hematol 2005; 42: 42-8.
6. Kouides PA. Evaluation of abnormal bleeding in women. Curr Hematol Rep 2002; 1: 11-8.
7. Ingerslev J, Sorensen B, Castaman G, Lloyd JV, Varon JD, Savion N. New approaches in the measurement of coagulation. Haemophilia 2008; 14 (Suppl 3): 104-12.
8. Janssen CA, Scholten PC, Heintz AP. A simple visual assessment technique to discriminate between menorrhagia and normal menstrual blood loss. Obstet Gynecol 1995; 85: 977-82.
9. Simon D, Kunicki T, Nugent D. Platelet function defects. Haemophilia 2008; 14: 1240-9.
10. Hayward CP. Diagnostic approach to platelet function disorders. Transfus Apher Sci 2008; 38: 65-76.
11. Kadir RA, Economides DL, Sabin CA, Owens D, Lee CA. Frequency of inherited bleeding disorders in women with menorrhagia. Lancet 1998; 351: 485-9.
12. Dilley A, Drews C, Miller C, Lally C, Austin H, Ramaswamy D, et al. von Willebrand disease and other inherited bleeding disorders in women with diagnosed menorrhagia. Obstet Gynecol 2001; 97: 630-6.
13. Woo YL, White B, Corbally R, Byrne M, O'Connell N, O'Shea E, et al. von Willebrand's disease: an important cause of dysfunctional uterine bleeding. Blood Coagul Fibrinolysis 2002; 13: 89-93.
14. Shankar M, Lee CA, Sabin CA, Economides DL, Kadir RA. von Willebrand disease in women with menorrhagia: a systematic review. BJOG 2004; 111: 734-40.
15. Federici AB, Mannucci PM. Advances in the genetics and treatment of von Willebrand disease. Curr Opin Pediatr 2002; 14: 23-33.
16. Kouides PA, Phatak P, Sham RL. Adjusting the reference range of von Willebrand factor levels and factor VIIIc level in relation to the menstrual cycle [abstract]. Blood 1997; 90 (Suppl 1): 32a.
17. Werner EJ, Werner A, Gies L. Variability of von Willebrand factor levels: a chronological study [abstract]. Blood 1995; 87 (Suppl 1): 754a.
18. Kadir RA, Economides DL, Sabin CA, Owens D, Lee CA. Variations in coagulation factors in women: effects of age, ethnicity, menstrual cycle and combined oral contraceptive. Thromb Haemost 1999; 82: 1456-61.
19. Lippi G, Franchini M, Salvagno GL, Montagnana M, Poli G, Guidi GC. Correlation between von Willebrand factor antigen, von Willebrand factor ristocetin cofactor activity and factor VIII activity in plasma. J Thromb Thrombolysis 2008; 26: 150-3.
20. Kambayashi J, Shinoki N, Nakamura T, Ariyoshi H, Kawasaki T, Sakon M, et al. Prevalence of impaired responsiveness to epinephrine in platelets among Japanese. Thromb Res 1996; 81: 85-90.
21. Stormorken H, Gogstad G, Solum NO. A new bleeding disorder: lack of platelet aggregatory response to adrenaline and lack of secondary aggregation to ADP and platelet activating factor (PAF). Thromb Res 1983; 29: 391-402.
22. Kouides PA. Menorrhagia from a haematologist's point of view. Part I: initial evaluation. Haemophilia 2002; 8: 330-8.

ความผิดปกติของการแข็งตัวของเลือดในผู้ป่วยวัยรุ่นไทยที่มีปัญหาประจำเดือนมามาก

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วัตถุประสงค์: *ศึกษาความผิดปกติของการแข็งตัวของเลือดที่เป็นสาเหตุทำให้มีประจำเดือนมามากในวัยรุ่นไทย*

วัสดุและวิธีการ: *รวบรวมผู้ป่วยวัยรุ่นที่มาพบแพทย์ด้วยปัญหาประจำเดือนมามาก ที่มารับการตรวจที่โรงพยาบาลรามาธิบดี โดยคัดเลือกเฉพาะผู้ป่วยที่มีค่าการประเมินด้วย Pictorial blood loss assessment chart (PBAC scores) มากกว่าหรือเท่ากับ 100 คะแนนเพื่อยืนยันภาวะประจำเดือนมามาก วัดค่าการแข็งตัวของเลือดผู้ป่วย ได้แก่ complete blood count, หมู่เลือด ABO, coagulogram, bleeding time, Factor VIII:C, VWF:Ag, RisCoF และ platelet aggregation test โดยมีผู้ป่วยที่มีประจำเดือนมามากทั้งสิ้น 28 คน เปรียบเทียบกับค่าการแข็งตัวของเลือดในกลุ่มปกติ ซึ่งไม่มีประจำเดือนมามาก 20 คน ใช้สถิติวิเคราะห์หาความแตกต่างระหว่างค่าการแข็งตัวของเลือดทั้ง 2 กลุ่ม ตรวจวินิจฉัย ให้การรักษา และติดตามการรักษาเพิ่มเติมในผู้ป่วยที่พบว่า มีสาเหตุที่ชัดแจ้งซึ่งทำให้มีประจำเดือนมามาก*

ผลการศึกษา: *พบผู้ป่วยที่มีภาวะเลือดออกง่ายซึ่งเป็นสาเหตุของประจำเดือนมามากทั้งสิ้น 6 ราย ได้แก่ โรคไขกระดูกฝ่อ, thrombotic thrombocytopenic purpura, โรค von Willebrand ชนิดที่ 3, Glanzmann thrombasthenia อย่างละ 1 ราย และ Bernard-Soulier syndrome จำนวน 2 ราย พบว่าคะแนน PBAC ในกลุ่มที่มีภาวะเลือดออกง่ายซึ่งมีประจำเดือนมามากสูงกว่ากลุ่มที่ไม่พบสาเหตุอย่างมีนัยสำคัญ เมื่อทดสอบทางสถิติพบว่าลักษณะพื้นฐานของกลุ่มผู้ป่วยซึ่งมีความผิดปกติของการเกาะกลุ่มกันของเกล็ดเลือด เมื่อกระตุ้นด้วยสารอดรีนาลินเพียงอย่างเดียวและกลุ่มควบคุมไม่มีความแตกต่างกันอย่างมีนัยสำคัญ*

สรุป: *ความผิดปกติของการแข็งตัวของเลือดอาจเป็นสาเหตุสำคัญของประจำเดือนมามากผิดปกติดังนั้น จึงควรซักประวัติ ตรวจร่างกายผู้ป่วย และวัดค่าการแข็งตัวของเลือดทางห้องปฏิบัติการ เพื่อหาสาเหตุที่แท้จริงก่อนเริ่มต้นการรักษา*