nation on medicine books, visit our website www.jaypeebrothers.com, for detailed information on medicine books, visit our website www.jaypeebrothers.com



Signs & Symptoms in Clinical Practice

Editor
Devendra Richhariya

Forewords
Naresh Trehan
Yatin Mehta
Praveen Aggarwal

Co-Editors
Jesus Daniel López Tapia
Khusrav Bajan
Bhawana Sharma

JAYPEE

Contents

1. **Abdominal Pain (Adult)** 1
   Roberta Petrino, Aldo Tua
2. **Abdominal Pain (Acute) in Children** 13
   Meera Luthra, Apurva Arora
3. **Abdominal Pain (Chronic) in Children** 18
   Faiz Ahmad, Thiagrajan Jaiganesh
4. **Anal Fissure** 24
   Ashok Puranik
5. **Anemia** 27
   Khusrav Bajan, Evith Pereira
6. **Ankle Sprain** 36
   Sanjay Shah, Chintan Thanki
7. **Ascites** 45
   Jesus Daniel López Tapia, Mariana Patricia Valdez Rodríguez
8. **Bleeding Disorders** 52
   Ayesha Musabbah Almemari, Hanan Salah Al Hajri, Maryam Hasan Darwish Alshehhi
9. **Bell's Palsy** 72
   Ali Abdolrazaghnejad, Mohsen Banaie
10. **Breast Problems** 77
    Rajeev Agarwal
11. **Bowel Obstruction** 83
    Jesus Daniel López Tapia, Aldo Emigdio Bartolini Salinas
12. **Cervical Sprain (Whiplash Injury)** 93
    Chintan Thanki, Sanjay Shah
13. **Chest Pain** 99
    Rahul Mehrotra, Shubham Chelawat
14. **Clubbing** 111
    Vivek Chauhan, Suman Thakur
15. **Clavicle Fracture** 118
    Sandeep Jain

JAYPEE BROTHERS

16. Concussion **123**
Mustafa Sabak, Behcet Al

17. Coma **128**
Saleh Fares, Omar Ghazanfar

18. Constipation in Adult **137**
Rohan N Shah

19. Convulsions in Adults **141**
Amit Nabar

20. Convulsion in Children **152**
Sanjukta Dutta

21. Cough in Adult **162**
Bhawana Sharma

22. Cough in Children **167**
Maninder S Dhaliwal

23. Crying in Infant and Children **174**
Shweta Tyagi

24. Cyanosis **181**
Suman Thakur, Vivek Chauhan

25. Deafness **188**
Deepak Dalmia, Sanjaya Bahera

26. Dental Problems **193**
Mayank Tripathi

27. Diarrhea in Adult and Travelers **207**
Sanjay Kumar

28. Diarrhea in Children **212**
Veena Raghunathan

29. Dysmenorrhea **220**
Nilu Sunil

30. Dyspepsia **225**
Ravindra Kale

31. Dysphagia **229**
Amit Mittal, Anukalp Prakash

32. Dyspnea **235**
Chitra Mehta, Srinivas Monanga

JAYPEE BROTHERS

33. Earache **242**
Deepak Dalmia, Sanjaya Bahera

34. Ear Discharge **252**
Sanjaya Bahera, Deepak Dalmia

35. Epistaxis **256**
Sandeep B Gore

36. Eye Problems **262**
Carreen Pakrasi, Sudipto Pakrasi

37. Emergency Contraception **277**
Goma Bali Bajaj

38. Facial Swelling **279**
Ashok K Taneja, Akshat Taneja

39. Fatigue **284**
Au Kin Heng Constantine

40. Fever **294**
Akanksha Rastogi, Amit Mittal

41. Fever in Infants and Children **299**
Sandip Kumar

42. Fingers and Nail Problems **307**
Aditya Agarwal, Vimlendu Brajesh, Sukhdeep Singh, Hardeep Singh, Sanjay Mahendru, Pooja Sharma, Madhusoodan Gupta, Saurabh Garg, Deepika Gupta, Rakesh K Khazanchi

43. Gait Abnormalities **316**
Nikhil Tambe, Sandeep B Gore

44. Goiter **323**
Dheeraj Kapoor, Ruchi Kapoor, Ranjana Bhatt

45. Gum Disorders **330**
Avdi Tahiri, Lumturije Njazi Asllani-Hashani

46. Heat Illness **334**
Omar Ghazanfar, Saleh Fares

47. Heel Pain **342**
Vivekanshu Verma

48. Hematemesis **345**
Sanjay Kumar

49. Hematuria **348**
Asit Misra

JAYPEE BROTHERS

50. Hemoptysis **355**
Veerottam Tomar

51. Hemorrhoids **365**
Ashok Puranik

52. Headache **369**
Alireza Baratloo

53. Hiccups **374**
Hatinderjeet Singh Sethi, Nimarpreet Kaur

54. Hyperventilation **379**
Bhawana Sharma

55. Inflight Medical Problems **382**
Rajeev Kapur

56. Immunization for Adults and Travelers **386**
Sara Nooruddin Kazim, Nisreen Hamza Maghraby, Azza Omar Yousif

57. Immunization in Pregnancy and Children **407**
Ashok Mishra

58. Insect Bite (Arthropods: Bites, Stings, and Other Contacts) **423**
Au Kin Heng Constantine

59. Jaundice in Adult **440**
Anukalp Prakash, Amit Mittal

60. Jaw Dislocation **448**
Harshil Mehta

61. Joint Pain **453**
Sourabh Malviya

62. Knee Problems **464**
Attique Vasdev, Govind Sharma

63. Lower Extremity Pain, Edema, and Ulcers **468**
Ayşegül Bayır

64. Low Back Pain **481**
Devendra Richhariya

65. Lymphadenopathy **485**
Ritin Mohindra, Praveen Aggarwal

66. Melena **495**
Shashank Karale, Uday Sanglodkar

JAYPEE BROTHERS

67. Muscle Cramps **499**
Sayuri Enriquez Saenz

68. Muscle Wasting **501**
Praveen Aggarwal, Ritin Mohindra

69. Multiple Trauma **508**
Behcet Al, Mustafa Sabak

70. Oral Problems (Oral Candidiasis, Oral Herpes Simplex) **520**
Aman Sharma

71. Palpitations **530**
Aldo Tua, Roberta Petrino

72. Pedal Edema **540**
Ajay Singh Thapa

73. Penile Problems **545**
Puneet Ahluwalia, Saurabh Patil

74. Procedural Sedation and Analgesia **556**
Ronak Mankodi

75. Rabies Prophylaxis **565**
Pooja Kataria, Seema Sharma

76. Rashes in Newborn and Infants **570**
Nadeem Uddin Qureshi, Irene Oriaifo, Mohammed Moizuddin Qureshi, Rekha Gadiparthi

77. Rib Fractures **579**
Sandeep Jain

78. Scrotum (Acute) **584**
Rakesh Khera, Prafull Mishra

79. Shoulder Dislocation **593**
Praveen Saraogi

80. Skin Problems **596**
Ramanjit Singh, Neha Dubey

81. Smoke Inhalation **618**
Eric Revue

82. Sore Throat (Pharyngitis) **625**
Akanksha Rastogi, Amit Mittal

83. Stridor **631**
Yatin Mehta, Kamal Lashkari, Prashant Kumar

JAYPEE BROTHERS

84. Tetanus Prophylaxis **639**
M Sai Surendar

85. Torticollis (Wryneck) **641**
Harshil Mehta

86. Tremor **647**
Devendra Richhariya

87. Vertigo (Dizziness) **650**
Kishalay Datta, Rigenjyoti Kalita

88. Voice Disorders **657**
Deepak Dalmia

89. Vomiting in Adults **664**
Ravindra Kale

90. Weight Gain (Obesity) **669**
Jasvinder Singh Anand

91. Weight Loss **674**
Sharad Bedi

Index *681*

JAYPEE BROTHERS

CHAPTER

8

Bleeding Disorders

Ayesha Musabbah Almemari, Hanan Salah Al Hajri, Maryam Hasan Darwish Alshehhi

INTRODUCTION

While trauma is the most common cause of bleeding seen in emergency department (ED), there are patients who would present with bleeding or other hematological symptoms or signs from abnormal homeostasis. It is crucial to recognize these patients with careful history and examination as workup and management will be different.

There is no definition of bleeding disorders and in most literatures bleeding and clotting disorders are used interchangeably to describe a spectrum of hematological diseases that affect hemostasis. Through this chapter, we will use bleeding disorders instead of clotting disorders term and we will discuss hemostasis disorders that present with bleeding or bleeding and clotting at the same time.

ETIOLOGY

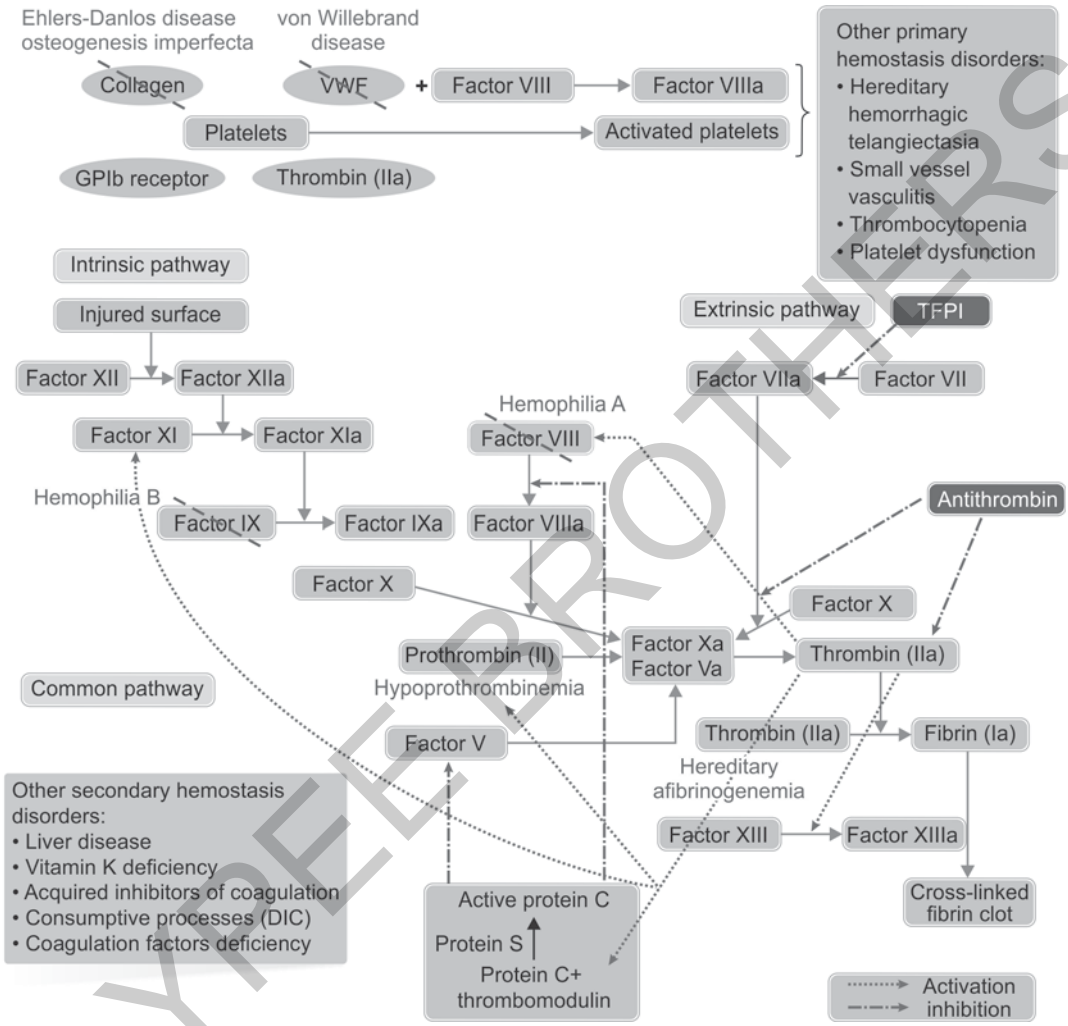
Etiology of bleeding disorders can be either congenital or acquired (**Table 1**). Hemophilia A and B are among the most common congenital etiologies according to the world federation of hemophilia 2010 survey. 106 countries participated in the survey about hereditary bleeding disorders, with total number of patients with diagnosed hereditary bleeding disorder being 257,182 cases and hemophilia A and B being the most prevalent disease as there are about

Table 1: Classification of bleeding disorders based on etiology.

Congenital	***Acquired***
Hemophilia A (Factor VIII deficiency)	Disseminated intravascular coagulopathy
Hemophilia B (Factor IX deficiency)	Liver disease
von Willebrand disease	Vitamin K deficiency
Fibrinogen disorders	Massive transfusion of stored blood
	Acquired inhibitors of coagulation
	Heparin or oral anticoagulant therapy
	Renal disease
	Hypersplenism

JAYPEE BROTHERS

Flowchart 1: Classification of bleeding disorder based on pathophysiology.



(DIC: disseminated intravascular coagulation; TFPI: tissue factor pathway inhibitor)

diagnostic approach is of paramount importance. Bleeding can be minor or life-threatening depending on the site and the underlying hemostasis defect.

History of Bleeding Patient

Patient is Underlying Diagnosed Bleeding Disorder

Those patients will likely know they have an illness and most will know or carry with them documents that will indicate their diagnosis. If they do not, physicians shall try and inquire

JAYPEE BROTHERS

Table 3: Simplified bleeding disorder classification based on underlying hemostasis pathophysiology.

Platelet disorder	Low platelet number	Congenital thrombocytopenia	Wiskott-Aldrich syndrome
		Impaired bone marrow production	Impaired bone marrow production aplastic anemia, megaloblastic anemia, and bone marrow infiltration
		Increased platelet destruction/consumption	Immune-related conditions like autoimmune thrombocytopenia (ITP), systemic lupus erythematosis, drugs, and nonimmune conditions such as disseminated intravascular coagulation (DIC), thrombotic thrombocytopenic purpura (TTP)
		Splenic sequestration	Hypersplenism
	Platelet dysfunction	Inherited	Glanzmann's thrombasthenia, Bernard-Soulier syndrome and von Willebrand disease
		Acquired	Aspirin ingestion, uremia and in myeloproliferative disorders
Disorders of the coagulation cascade	Inherited bleeding disorders	Hemophilia A (Factor VIII deficiency) Hemophilia B (Factor IX deficiency) von Willebrand disease Congenital fibrinogen deficiency	
	Acquired bleeding disorders	Liver disease Renal disease Vitamin K deficiency DIC Anticoagulant therapy Massive transfusion Hyperfibrinolysis	

about guiding historical factors such as previous ED presentations, previous medications received or previous hospital admissions and procedures performed.

Patient with New Presentation of Noninjury-related Bleeding

Taking specific yet detailed history is important to exclude possibilities of underlying undiagnosed bleeding disorders. History of present illness shall focus on current presenting symptoms, onset, amount, location of bleeding, provoking factors, and any associated symptoms.

JAYPEE BROTHERS

Past medical history shall inquire about previous history of prolonged or recurrent bleeding from wounds, lasting more than 15 minutes or recurring spontaneously during the 7 days after the wound, or after surgical procedures such as tonsillectomy. As well information about bruises, after minimal or no apparent trauma, spontaneous nosebleeds that lasted more than 10 minutes or required medical attention to stop and dental extractions followed by heavy, prolonged, or recurrent bleeding. In women, patient's gynecological history is important. Checking about history of heavy menses and presence of clots greater than an inch in size and/or changing a pad or tampon more than hourly, or resulting in anemia or low iron, history of postpartum hemorrhage or recurrent abortions. Additional important historical factors in patients with de novo bleeding episode are outlined in **Table 4**. Same historical factors shall be used for those known for bleeding disorders, however, when patient provide clear and concise presenting symptoms and history of bleeding disorders as much details may not be needed taking in account the goal of emergency physician when assessing any patient is to be effective and efficient.

Physical Examination of Bleeding Patient

Physical examination of a patient presenting with bleeding symptoms focuses on bleeding site assessment, control of bleeding, if actively bleeding then focus shall move to mucocutaneous manifestation of bleeding disorders such as bruises, assess if various age, size, presence of petechiae. As well assess presence of hemarthrosis; worth mentioning that bleeding disorders due to platelet pathology will manifest usually as petechiae, bruises, and mucous membrane bleeding while those due to coagulation cascade dysfunction may present with deep tissue bleeding such as hemarthrosis and deep muscle and soft tissue bleeding. Given that many systemic illnesses cause hemostasis dysfunction, hence examining for signs of chronic illness such as chronic liver disease, signs of anemia such as pale mucous membranes, and signs of end-stage renal disease.

Red Flags

The nature of the ED is that physicians see large number of patients and need to tease out those at high risk for clinical progression or deterioration in the short term hence to plan proactively management strategy to prevent further clinical worsening. Identifying red flags in various clinical presentations assist the physicians to recognize high-risk patients immediately without much thinking. There is no red flags list for bleeding disorders identified in the literature. We have looked at recognized emergency medicine textbooks as well as the hematology literature in an attempt to develop a list. There are many bleeding scores around, however, the goals of these scores are to identify the severity of bleeding disorder in primary and hematology setting and has not been validated in the ED. Most of the bleeding scores utility is in its negative predictive value though the inter-rater reliability among users vary. There some other bleeding scores that predict risk of bleeding in atrial fibrillation patients before starting them on anticoagulation. Looking at all above we developed the red flag list in **Table 5**.

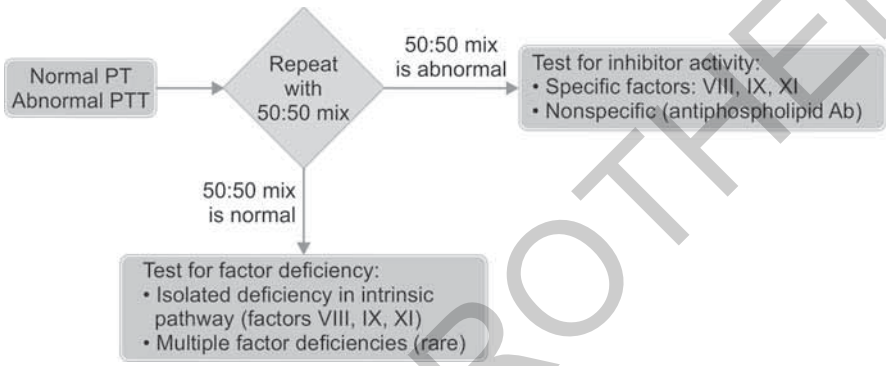
JAYPEE BROTHERS

Flowcharts 2A to C: Illustration to laboratory investigation of bleeding disorders.

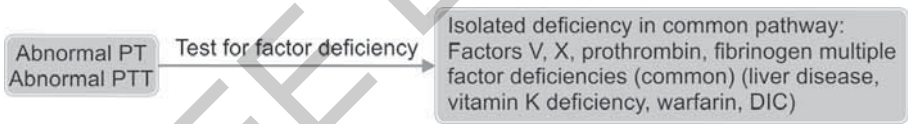
Flowchart 2A



Flowchart 2B



Flowchart 2C



Box 1: Bleeding disorders screening and specialized workup.

- CBC and blood film
- PT and PTT, if abnormal, investigate for factor deficiencies
- If hemophilia or other factor deficiencies strongly suspected, do factor VIII, IX, XI assays
- Thrombin clotting time and clottable fibrinogen if abnormal, evaluate reptilase time and measure fibrinogen antigen
- von Willebrand disease screen, factor VIII, von Willebrand factor antigen and ristocetin cofactor levels multimers, if screen is abnormal
- Platelet aggregation with the full panel of agonists

(CBC: complete blood count; PT: prothrombin time; PTT: partial thromboplastin time)

therefore, a patients history strongly suggestive of a bleeding disorder, may warrant testing such deficiencies by referring to the hematology department for detailed investigations as in **Box 1**.

JAYPEE BROTHERS

Thrombin time (TT) is of new interest to emergency physicians, as it helps them to assess bleeding tendency on patients using the new anticoagulants. The TT is the time required to convert fibrinogen to a fibrin clot, bypassing the intrinsic, extrinsic, and common pathways. Dabigatran (Pradaxa) was licensed for the treatment of nonvalvular atrial fibrillation. Routine monitoring of dabigatran is not required, testing for drug clearance may be needed in select circumstances like emergencies. The TT is very sensitive to the presence of any thrombin inhibitors in the plasma. This includes oral thrombin inhibitors such as dabigatran, as well as parenteral thrombin inhibitors such as heparin [both unfractionated and low molecular weight heparin (LMWH)], argatroban, lepirudin, and bivalirudin. TT has minimal value in the context of overdose assessment where aPTT and PT-INR (international normalized ratio) may be of more use. Another cause for a prolonged TT that may be encountered is a low fibrinogen level; which can occur with massive hemorrhage, DIC, or post-thrombolytic therapy. In this context; measurement of a fibrinogen level would be particularly useful. Uncommon causes of TT prolongation include dysfibrinogenemia, some par proteins, and high levels of fibrinogen degradation products (FDPs).

APPROACH TO PATIENT WITH POSSIBLE BLEEDING DISORDER IN ED

Considering the described pathophysiology, the clinical presentation and investigation discussed above, we recommend to follow 5-step approach in evaluating patients presenting to ED with nontraumatic bleeding who may potentially have underlying acquired or congenital bleeding disorder. The 5-step approach will help to define the type of bleeding and in providing the basis for planning management, including the initial decisions regarding administration of blood products.

Step 1

Is there a problem with the patient's platelets?

- Look for petechial hemorrhage, easy bruising, mucous membrane bleeding, epistaxis, and menometrorrhagia
- Do screening laboratory tests (platelet counts, PT, and APTT)
- Platelet aggregation will be done by the hematologist.

Step 2

Does the patient have a single factor deficiency?

- Like hemophilia A (FVIII) or B (FIX), very common or rare deficiencies like FVII, FX, FV, and FXI
- Look for purpura, hemarthrosis, muscle hematoma, and large vessels bleeding
- Screening test PT and aPTT
- Factor assays.

JAYPEE BROTHERS

Step 3

Does the patient have deficiency of several vitamin k-dependent coagulation factors?

- Indicated by history of poor nutrition, vitamin K malabsorption, warfarin ingestion, symptoms, and signs of liver disease
- Warfarin and liver disease produce multiple factor deficiencies involving the extrinsic and common pathway
- Screening PT and aPTT
- Factors assays.

Step 4

Is there a circulating anticoagulant?

- Like heparin, FVIII or IX antibody, and lupus anticoagulant
- Check aPTT, 1:1 mixing, aPTT, TT, and reptilase time.

Step 5

Does the patient have consumptive coagulations?

- Like thrombotic thrombocytopenic purpura (TTP), hemolytic uremic syndrome (HUS), vasculitis, sepsis, obstetrical complication, trauma, and liver disease
- Check platelet count, PT, aPTT, TT, fibrinogen, D-dimer, and blood smear.

TREATMENT

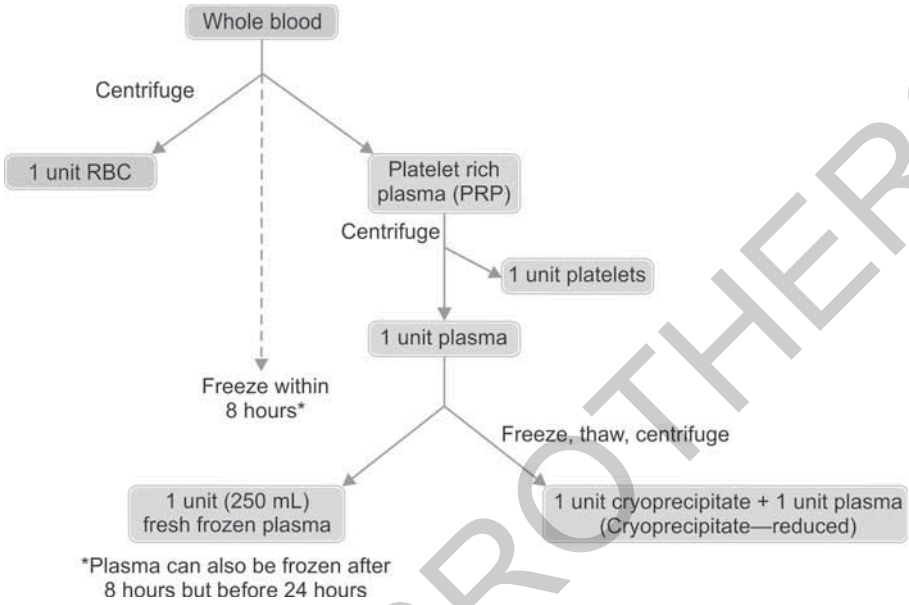
Standards for emergency care of patients with known bleeding disorders have been established at national level in many countries specifically for hemophilia. Great example in UK where there are established hemophilia centers and hemophilia comprehensive care centers where registered patients have an open access during working hours. However, provision of care after hours remains ED dependent. Therefore, emergency physicians need essential knowledge of bleeding disorders and to develop an approach to assess and manage patients with established and undiagnosed bleeding disorders. It has been reported that patient always feel the care they receive at ED is poor and not up to their expectations. In a recent published report, hemophilia ED visits to ED in USA between 2006 and 2013 were about 0.016% of total ED visits. A subanalysis of 2,012 patients (4,500 patients) showed that the most common presenting complaints were cardiovascular complaints followed by injuries, hemorrhages, and sepsis. About 25% of the patients needed admission to hospital and mortality rate was quite small 0.008% and most died secondary to sepsis. Pediatric population tend to utilize ED more frequent than adults and injuries were the most frequent presenting complaint followed by joint and soft tissue disorders, fevers, and central line complications.

Prevention

This not only the responsibility of the treating physicians, emergency physicians share the responsibility of educating their patients with bleeding risk or tendency when they encounter them for any complaints. Discharge medication reconciliation is a quality metric to track.

JAYPEE BROTHERS

Flowchart 3: Blood products components derivation and average volume per unit for adult patient.



Platelet

One platelet unit is derived from a pool of 6 whole blood units and is expected to raise the platelet count by 30,000–60,000/μL in average adult patient. If patient platelet count does not increase as expected post-transfusion, the emergency physicians shall consider presence of immune or nonimmune destruction etiology such as TTP or end-stage liver disease, increase consumption such as DIC or bone marrow suppression such as in sepsis. A useful index to use to determine if lack of response to treatment is due to immune or nonimmune etiology is to calculate the corrected count increment (CCI) (**Box 3**). Indications for transfusing platelet in ED for patients with known or suspected congenital or acquired bleeding disorders are listed in **Box 4**. Platelet transfusion does not require to be ABO compatible.

Fresh Frozen Plasma

Each plasma unit is about 200–300 mL in volume and contains normal levels of plasma clotting factors with FVIII at level of 70%. Indications for plasma transfusion in ED are listed in **Box 5**. FFP shall be ABO compatible.

Cryoprecipitate

It is simply a concentrate of clotting factors that is prepared from FFP to produce a source of concentrated clotting factors including FVIII, VWF, and fibrinogen. Cryo indications are

JAYPEE BROTHERS

Box 3: Calculation and interpretation of corrected count increment (CCI).

CCI = [post count (per μL) − pre count (per μL)] × BSA (m^2)/number of administered platelets (×1,011)
- A CCI > 7,500 at 1 hour and > 4,500 at 24 hours post-transfusion indicate adequate platelet responses
- A CCI < 5,000 at 1 hour indicates possible immune refractoriness
- A CCI < 4,500 at 24 hours indicates probable nonimmune refractoriness

Box 4: Indications for transfusing platelet in emergency department (ED).

- Patient with major hemorrhage and hemodynamically unstable where massive transfusion protocol is indicated
- Patient with active bleeding and platelet count is less than 50,000/μL
- Patient with thrombocytopenia due to reduce production such as in bone marrow dysfunction or inadequate precursors such as vitamin B_{12} and folic acid deficiency who need urgent procedure in ED such as (LP, or central line placement) and their platelet count is less than 50,000/μL
- Patient with thrombocytopenia due to known or suspected autoimmune thrombocytopenia and life-threatening bleeding such as ICH, or major bleeding
- Patient with thrombocytopenia due to reduce production who have platelet count < 10,000/μL in attempt to prevent spontaneous ICH

(ICH: intracranial hemorrhage; LP: lumbar puncture)

Box 5: Indications for fresh frozen plasma (FFP) transfusion in emergency department (ED).

- Replacement of a single coagulation factor deficiency, where a specific or combined factor concentrate is unavailable or contraindicated
- Reversal of warfarin
- TTP
- C1 esterase inhibitor deficiency
- Massive blood transfusion
- DIC
- Acquired fibrinogen deficiency when volume resuscitation is needed as well

(DIC: disseminated intravascular coagulation; TTP: thrombotic thrombocytopenic purpura)

similar to FFP as components of clotting factors are almost the same except that Cryo is higher in fibrinogen. Transfusing 10 units of Cryo is expected to raises the plasma fibrinogen level by up to 1 g/L (60–100 mg/dL) in average adult patient. Then the main difference between Cryo and FFP in ED is that FFP has more volume than Cryo so when volume resuscitation is required, FFP is better. As well Cryo has to be ABO compatible.

Specific Coagulation Factor Therapy

Those are all blood-derived components. Most are new and has been in use over past 1 or 2 decades. **Table 6** lists their compositions and indications of use.

JAYPEE BROTHERS

Table 8: Disseminated intravascular coagulation (DIC) score.

Platelet	• >100,000/μL (0 points) • 50,000–100,000/μL (1 point) • <50,000/μL (2 points)
Increase in fibrin markers (e.g. D-Dimer)	• No change (0 points) • Moderate rise (2 points) • Strong rise (3 points)
Prothrombin time prolongation	• 3 seconds or less (0 points) • >3 seconds but <6 seconds (1 point) • Greater than 6 seconds (2 points)
Fibrinogen level	• Greater than 1 g/L (0 points) • Less than 1 g/L (1 point)
Score interpretation: • *0–4 points*: DIC is not overt, repeat score in 1–2 days • *5–8 point*: DIC probable, repeat score daily	

- *Treatment in ED*:
  - Consider factor replacement procedures such as lumbar puncture (LP), incision, and drainage
  - Replace, if actively bleeding
  - In major bleeding, always assume factor level is 0%
  - *Mild-to-moderate bleeding*: (Soft tissue, muscle, hemarthrosis, epistaxis) replace factor up to 50% (50 U/kg will likely result in 50%)
  - *Severe life-threatening bleeds*: [CNS, gastrointestinal (GI), neck/throat, major trauma] replace factor up to 100%
  - *Calculating FVIII dose:* Units of FVIII required = Patients weight (kg) × 0.5 × (% activity desired – (%) intrinsic activity.

PREPARING YOUR ED FOR THE BLEEDING DISORDERS PATIENT

Emergency department needs to cater for most commonly congenital bleeding disorders such as hemophilia A and B before they even approach the ED. Having ED protocol that addresses standards for triage, appropriate time to be seen by physicians (door to doctor time), diagnostic workup and factor replacement indications for various bleeding site, doses and duration of treatment will certainly improve both physicians and patient's experience. On the other hand, having pre-prepared discharge instruction sheet that can be developed with the assistance of the hematologist to guide patients on symptoms they need to watch for and when to return to ED and important phone number to call is part of the patient management process and once established, it will serve many patients for years.

JAYPEE BROTHERS

SUMMARY

Bleeding disorders are common specially the acquired one. Having understanding of etiology, clinical presentation, and management is essential for safe emergency medicine practice. The 5-step approach described above will help the emergency physician to assess patients presenting with nontraumatic bleeding in order to detect possible acquired or inherited bleeding disorders. Preparing our EDs to patient with bleeding disorders will facilitate their management and enhance safety of therapy provided in ED.

JAYPEE BROTHERS

for detailed information on medicine books, visit our website www.jaypeebrothers.com, for detailed information on medicine books, visit our website www.ja

Signs & Symptoms in Clinical Practice

Salient Features

- It is compact, handy and bedside clinical companion book for all dedicated healthcare professionals who are committed to evaluate the patient accurately on the basis of signs and the symptoms
- Consists of 91 chapters, enriched with knowledge of about more than 100 contributors
- Covers almost all the possible signs and the symptoms, commonly seen in the day-to-day clinical practice
- Useful in evaluating the patients in early stages of the complaints and also helpful in initial treatment and management
- This book is helpful for undergraduates, postgraduates, residents, and emergency physicians.

Devendra Richhariya MBBS MD FICM is an Associate Director, Emergency and Trauma Care, Medanta—The Medicity, Gurugram, Haryana, India. He is practicing in emergency medicine for last 20 years. He is a Teacher and Faculty for emergency medicine, and Faculty Speaker for various national and international platforms. He is an Editor-in-Chief of Textbook of Emergency and Trauma Care by Jaypee Brothers Medical Publishers, New Delhi, India. His special interests are in acute care medicine, acute stroke, trauma, toxicology, geriatric emergency care, disaster medicine, emergency administration and research work related to emergency medicine.

Available at all medical bookstores or buy online at www.jaypeebrothers.com



JAYPEE BROTHERS Medical Publishers (P) Ltd.
www.jaypeebrothers.com

Join us on facebook.com/JaypeeMedicalPublishers

Shelving Recommendation
MEDICINE

