Clinical Case Scenarios:
Recognition and Treatment of Rare Bleeding Disorders in Emergent Situations

Presented as a Live Webinar
Thursday, November 7, 2013
1:00 p.m. – 2:00 p.m. EST

Planned and conducted by ASHP Advantage and supported by an educational grant from Novo Nordisk Inc.
WEBINAR INFORMATION

How do I register?

Go to http://www.ashpadvantagmedia.com/bleedingdisorders/scenarios.php and click on the Register button. After you submit your information, you will be e-mailed computer and audio information.

What is a live webinar?

A live webinar brings the presentation to you – at your work place, in your home, through a staff in-service program. You listen to the speaker presentation in “real time” as you watch the slides on the screen. You will have the opportunity to ask the speaker questions at the end of the program. Please join the conference at least 5 minutes before the scheduled start time for important announcements.

How do I process my Continuing Education (CE) credit?

Continuing pharmacy education for this activity will be processed on ASHP’s new eLearning system and reported directly to CPE Monitor. After completion of the live webinar, you will process your CPE and print your statement of credit online at http://elearning.ashp.org/my-activities. To process your CPE, you will need the enrollment code that will be announced at the end of the webinar.

View full CE processing instructions

What if I would like to arrange for my colleagues to participate in this webinar as a group?

One person serving as the group coordinator should register for the webinar. That group coordinator will receive an e-mail confirmation with instructions for joining the webinar. A few minutes before the webinar begins, the group coordinator should launch the webinar link. Once the webinar has been activated, the coordinator will have the option to open the audio via VoIP (Voice Over IP) on the webinar toolbar or use a touch tone phone with the provided dial-in information. At the conclusion of the activity, the group coordinator will complete a brief online evaluation and report the number of participants at that site. Each participant will process his or her individual continuing education statement online.

What do I need in order to participate in the webinar?

1. Computer with internet access and basic system requirements. When you register, the webinar system will assess your system to ensure compatibility.
2. Telephone to dial the toll-free number and listen to the presentation (if you choose not to use Voice Over IP [VoIP] via your computer).

Webinar System Requirements

Be sure to view the webinar system requirements for Windows, Mac, iOS, and Android prior to the activity.
Clinical Case Scenarios: Recognition and Treatment of Rare Bleeding Disorders in Emergent Situations

ACTIVITY FACULTY

William E. Dager, Pharm.D., BCPS (AQ-Cardiology)
Pharmacist Specialist
UC Davis Medical Center
Sacramento, California

William E. Dager, Pharm.D., BCPS (AQ-Cardiology), is a pharmacist specialist at UC Davis Medical Center in Sacramento, California, where he is responsible for managing challenging cases in anticoagulation, pharmacokinetics, and critical care. He also is clinically active with the cardiology service and serves as the director of the postgraduate year two (PGY-2) residency in cardiology at UC Davis. In addition, Dr. Dager holds three academic positions. He is Clinical Professor of Pharmacy at the University of California, San Francisco (UCSF) School of Pharmacy and Clinical Professor of Medicine at the University of California, Davis (UC Davis) School of Medicine. He also serves as Clinical Professor at Touro School of Pharmacy in Vallejo, California.

Dr. Dager earned his Doctor of Pharmacy degree at UCSF and completed a residency at UC Davis Medical Center in Sacramento. In addition, he completed the University of Pittsburgh Nephrology Pharmaceutical Care Preceptorship. He is a board-certified pharmacotherapy specialist and fellow of the American College of Clinical Pharmacy (ACCP), American Society of Health-System Pharmacists (ASHP), California Society of Hospital Pharmacists, and Society of Critical Care Medicine (SCCM).

Dr. Dager's research interests focus on anticoagulation, critical care medicine, cardiovascular disease, and pharmacokinetics and pharmacodynamics. He has authored numerous articles, book chapters, and scientific reviews, and he coauthored “Anticoagulation Therapy: A Point-of-care Guide” published by ASHP in 2011. He also regularly makes presentations at national and international educational conferences.

Dr. Dager serves as a reviewer and editorial board member for several medical journals, and he currently is chair of the Editorial Advisory Board Panel on Anticoagulation for The Annals of Pharmacotherapy. He has served as a site coordinator for the ASHP Research and Education Foundation Antithrombotic Pharmacotherapy Traineeship.

Dr. Dager has received multiple teaching and professional awards, including the 2008 ACCP Best Practice Award.
Mark T. Reding, M.D.
Director, Center for Bleeding and Clotting Disorders
University of Minnesota Medical Center, Fairview
Associate Professor
University of Minnesota Medical School
Minneapolis, Minnesota

Mark T. Reding, M.D., is Director of the Center for Bleeding and Clotting Disorders at University of Minnesota Medical Center in Minneapolis. In this role he is responsible for providing and coordinating patient care in the clinic and hospital for all adult patients followed by the Center, which is a hemophilia treatment center supported by the Centers for Disease Control and Prevention. Dr. Reding also serves as Medical Director of the Inpatient Hematology/Oncology Unit at University of Minnesota Medical Center. In addition, he is Associate Professor of Medicine in the Division of Hematology, Oncology, and Transplantation at the University of Minnesota.

Dr. Reding received his Bachelor of Science degree in Microbiology and Biology at South Dakota State University in Brookings. He then earned a Doctor of Medicine degree at University of Minnesota Medical School in Minneapolis. He is board certified in hematology.

Dr. Reding’s clinical interest is the treatment of non-malignant hematologic disorders with particular emphasis on disorders of hemostasis and thrombosis, including hemophilia. His current research efforts focus on the immune response to factor VIII, the cellular mechanisms involved in the synthesis of factor VIII inhibitors, and the immunologic consequences of gene therapy. He has also served as the local principal investigator for multi-center clinical trials. His research has been published in peer-reviewed journals.

Dr. Reding considers teaching to be the most important and rewarding aspect of his career, and he twice was awarded the Outstanding Clinical Mentor Award from his division at the Medical School. In addition to teaching responsibilities at the University, he frequently speaks at educational programs for physicians and other health care professionals.

Dr. Reding is a member of American Society of Hematology, Hemostasis and Thrombosis Research Society (HTRS), and International Society for Thrombosis and Hemostasis. He recently completed a two-year term on the board of directors for HTRS.
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Mark T. Reding, M.D., declares that he has been a consultant, member of advisory board or speakers bureau, and/or recipient of research funding from Baxter; Bayer HealthCare; Biogen Idec; Novo Nordisk Inc.; and Octapharma USA, Inc.

The following faculty and planners report no relationships pertinent to this program:

- William E. Dager, Pharm.D., BCPS (AQ-Cardiology)
- Carla J. Brink, M.S., B.S.Pharm.
- Susan R. Dombrowski, M.S., B.S.Pharm.

ASHP staff have no relevant financial relationships to disclose.

Additional Educational Opportunities on this Topic

Did you miss the October 29 webinar, “Bleeding Disorders: Achieving Optimal Therapeutic Outcomes in the Acute-care Setting”?

Both webinars in this series will be available as on-demand activities in early 2014

Sign up for updates and refer a colleague

www.ashpadvantage.com/bleedingdisorders
Clinical Case Scenarios: Recognition and Treatment of Rare Bleeding Disorders in Emergent Situations

ACTIVITY OVERVIEW
Managing an acute bleed in a patient with a bleeding disorder is a dynamic, ongoing process that requires frequent dosage adjustment and monitoring. Decisions about how to treat such a patient need to be made quickly and require continuous clinical and laboratory assessment of hemostatic parameters, including clotting factor levels. This activity will use clinical case scenarios to demonstrate innovative strategies for managing bleeds using various pharmacologic approaches.

Time for questions and answers from the webinar audience will be provided at the end of the presentation.

LEARNING OBJECTIVES
At the conclusion of this application-based educational activity, participants should be able to

• Outline a plan for assessing a patient with bleeding and concern for a bleeding disorder.
• Outline a plan for managing bleeding in an acutely-ill patient with a bleeding disorder.
• Employ a strategy involving formulary and systems decisions, including the use of concentrated clotting factor products that avoids treatment delays.
• Illustrate selected situations, such as development of inhibitors, requiring a change in therapy.

LIST OF ABBREVIATIONS
For a list of abbreviations used in this activity, please see page 16.

CONTINUING EDUCATION ACCREDITATION

The American Society of Health-System Pharmacists is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. This activity provides 1.0 hour (0.1 CEU) of continuing pharmacy education credit (ACPE activity # 0204-0000-13-473-L01-P).

Attendees must complete a Continuing Pharmacy Education Request online and may immediately print their official statements of continuing pharmacy education (CPE) credit following the activity.

Complete instructions for processing CE can be found on the last page of this handout.
Case 1

TR is a 55-yr-old Russian-speaking male who has arrived in the ED with a GI bleed. He is noted to have multiple bruises. He indicates being in the hospital about one month ago with heart pain, and “a piece of metal was placed in his heart.” The patient takes several pills a day, but does not know what they are.

Laboratory results
- Hgb 6.5 g/dL
- INR 3.0

Medications
- Unknown

The physician is asking what is available to stop the bleeding. What additional laboratory tests and medications would you consider?

Risk Factors for Bleeding

Clotting System
- Platelet problem
- Factor deficiency
- Congenital vs. acquired defects

Anatomic Factors
- Surgery
- Trauma
- Tumor
- AVMs
- Gastric ulcer

Systemic Disease
- Liver failure
- DIC
- Vitamin K deficiency
- Renal failure
- Hypertension

What laboratory tests would you order?
- Full CBC with differential (and ideally look at the blood smear)
- Does he have pancytopenia or are the low Hgb and platelets just due to bleeding?
- Any suggestion of a primary blood disorder (?MDS, ?leukemia)
- Coagulation tests – repeat INR, along with aPTT and fibrinogen
  - Is INR really 3.0?
  - Does he have evidence of DIC? (long aPTT, low fibrinogen)
- Liver function tests
  - Could liver disease explain the long INR and low platelets?
  - Could he have gastric or esophageal varices as a source of upper GI bleed?
- Type and crossmatch
  - This man is actively bleeding and will need transfusion!

Thromboelastography

What medications would you order?

- Vitamin K
  - The INR could be long because he has been taking warfarin
  - He could have a component of vitamin K deficiency
  - Even if he doesn’t need it, it won’t hurt!

- Frozen plasma
  - Regardless of cause of long INR, he needs replacement of clotting factors
  - Even if it turns out to be just warfarin, vitamin K takes 18 – 24 hours to work… he needs this fixed now!
  - However, vitamin K is still a good idea, because frozen plasma will start to “wear off” in a few hours, sooner if bleeding is brisk and ongoing

- RBCs
  - He's actively bleeding, and the Hgb is going to drop

Pharmacist Considerations

- Establish who the decision makers are
- What medications is he on
  - Recent cardiac stent? – antiplatelet agents
  - Any way to measure this?
- How much vitamin K and how should it be given?
- Do you track calcium with blood product use?

Pharmacist Considerations - Labs

- Do the labs fit the clinical presentation
  - Get baseline values
  - Caution with single values
    - Repeat to confirm or establish a trend
  - Is INR, aPTT, and low hematocrit from hemodilution?
  - Will the result influence a decision
    - Develop a plan in advance to avoid any delays
    - Acute bleeding or clotting can influence the situation

Case 1

TR is a 55-yr-old Russian-speaking male in ED with GI bleed, multiple bruises, and recent drug eluting cardiac stent (1 month ago).

Labs: Hgb 6.5 g/dL, Pt 120K mm³, INR 3.0

Medications: unknown

He was given 2 jumbo units FFP and 10 mg IV vitamin K and continues to bleed

INR post FFP is 1.8, but then 4 hours later is 2.5

What are the considerations in management at this time?
What are the considerations in management at this time?

- INR responded as expected post FFP
  - Did not completely correct to normal, as he would need a larger volume to fully replace all clotting factors (plus, INR of frozen plasma is 1.2 but rarely corrects to below 1.5)
  - Increasing INR 4 hours later reflects ongoing consumption of clotting factors due to active bleeding
  - Increasing INR 4 hours later may also reflect the inability of his liver to fully compensate and produce more clotting factors due to underlying disease (alcoholic vs. viral hepatitis vs. other)

What are the considerations in management at this time?

- He needs urgent endoscopy
  - Probably has anatomic cause for bleeding
    - Ulcer, varices, AVMs, tumor
  - Correction of coagulopathy and replacement of blood products alone will usually not control bleeding if there is also an anatomic cause

Pharmacist Considerations - Pharmacologic Intervention

- What pharmacotherapies could be considered?
- How much may be needed?
  - Don’t delay for full dose – partial may be OK to start
  - Is it multifactorial requiring combined interventions
    - Any restrictions
  - Will the result influence a decision
    - Develop a plan in advance to avoid any delays
- Know when to repeat to reassess management plan

Case 1

TR is a 55-yr-old Russian-speaking male in ED with GI bleed, multiple bruises, and recent drug eluting cardiac stent (1 month ago).
Labs: Hgb 6.5 g/dL, Plt 120K mm³, INR 3.0
Medications: unknown

INR 4 hr post FFP and 10 mg IV vitamin K is 2.5
Hgb post transfusion of 4 units of blood is 7.5 g/dL

How would you manage the patient at this time?

How would you manage the patient at this time?

- Hgb increased from 6.5 to 7.5 g/dL after transfusion of 4 units of blood
  - Expect 1.0 g/dL increase in Hgb for each unit of blood
  - Less than full response reflects the magnitude of the bleeding event, and possibly ongoing bleeding; hemolysis is also possible, but much less likely in this case scenario
- He needs continued close monitoring of Hgb and platelet count, as well as coagulation parameters
- What did endoscopy reveal?
  - What is his risk of re-bleeding? What time frame?
  - Any role for antifibrinolytic therapy?

Case 2

HH is a 43-year-old obese male (ideal body weight 70 kg, total body weight 150 kg). He is being considered for gastric bypass surgery and says he tends to bleed a lot when he gets a cut and has some sort of blood disease.

The surgeon wants advice for managing bleeding during a gastric bypass.

How would you proceed?
Need More History

- When and where was he evaluated previously?
- Was a specific diagnosis made?
- Previous hemostatic challenges?
  - Complications?
  - Any treatments given before or after?
- Any family history of bleeding tendency?
  - If so, who bleeds — males only vs. males and females?
- Any consanguinity? (increases likelihood of rare bleeding disorders)

Laboratory Workup

- Directed by personal and family bleeding history
- CBC and peripheral smear
  - Looking for low platelets, morphology
- INR, aPTT
  - Screen for factor deficiencies
- von Willebrand panel
- Problems not detected by these labs
  - Factor XIII deficiency, platelet function disorders, excess fibrinolysis

Pharmacist Considerations

- Dose of concentrated clotting factors depends on indication for use
- These agents can be titrated to effect
- INR does not reflect factor IX

Case 2

HH is a 43-year-old obese male (ideal body weight 70 kg, total body weight 150 kg). He is being considered for gastric bypass surgery and says he tends to bleed a lot when he gets a cut and has some sort of blood disease.

The surgeon wants advice for managing bleeding during a gastric bypass.

Additional history
- Doesn’t know of any family history of bleeding problems
- Had tonsils removed as a kid — does not know if he bled
- Does recall bleeding after appendectomy (age 10), had to stay in hospital several days, needed blood transfusions

Case 2

Laboratory results
- CBC — normal
- Blood smear — normal platelet morphology
- INR — 1.6 (normal 0.89 – 1.14)
- aPTT — normal
- von Willebrand panel — normal

Now what would you do?

a. Clear for surgery
b. Order platelet function testing
c. Order fibrinogen activity test
d. Repeat INR with mixing study
e. Order factor VIII level
Laboratory results

Repeat INR is nearly identical at 1.58. Mixing of patient plasma with normal plasma (1:1) corrects the INR into the normal range.

Correction of the INR on mixing study is consistent with a factor deficiency. Because only the INR is long (aPTT is normal), the only thing this can be is factor VII deficiency.

Factor VII – 10%

Now what do you tell the surgeon?

Case 2

Now what do you tell the surgeon?

- This patient has mild factor VII deficiency
  - History is very typical
  - Factor VII is way too low for this to be vitamin K deficiency
  - Should screen for HIV and HCV
    - He had blood transfusion with appendectomy years ago, may have received plasma

Now what do you tell the surgeon?

- Will need factor replacement for surgery
  - Recombinant factor VIIa
    - Low dose 10-30 mcg/kg
  - Dosing is different than for treatment of inhibitors in hemophilia
  - Hemostatic level is probably about 25 – 30%
  - Will need treatment and close monitoring for several days


Now what do you tell the surgeon?

- Other options?
  - This elective surgery – rFVIIa is treatment of choice
  - Frozen plasma – would require large volume
  - PCCs – not recommended due to inability to accurately monitor and increased risk of thrombosis in this setting

Case 3

CJ is a 58-yr-old female who had a HeartMate II left ventricular assist device (LVAD) placed 1 year ago. She is on warfarin with an INR of 2.8, and also on aspirin 81 mg daily. She is admitted after passing several dark tarry stools over the last 2 days. Hgb was found to be 7.5 g/dL (had been 11.4 g/dL six weeks ago).

Now what do you tell the surgeon?

- She has obvious reasons to bleed (warfarin and aspirin), but . . .
- Need to think broadly
  - What is her platelet count?
  - What other coagulation tests needed (aPTT, fibrinogen)?
  - Is she taking other medications that may contribute (SSRI, herbal or vitamin supplements)?
  - Could she have an anatomic reason to bleed (gastric ulcer, esophageal erosions, AVMs, tumor)?
What would your initial management steps be?

- Get additional laboratory tests
- Transfuse RBCs
- Hold warfarin and aspirin
- Should we consider vitamin K, frozen plasma?
  - Depends on her degree of hemodynamic instability and risk of thrombosis with device
- Call GI (needs endoscopy)

Case 3

Additional history
She has no previous personal or family history of bleeding tendency. The LVAD placement was not complicated by any bleeding, and she had been tolerating warfarin and aspirin therapy well until this admission.

She is not taking an SSRI, any OTC supplements, or other medications known to inhibit platelet function.

Labs: Platelet count, aPTT, and fibrinogen are all normal

What is the most likely diagnosis?

a. Acquired hemophilia
b. Acquired von Willebrand disease
c. Impaired hepatic synthesis of clotting factors
d. Congenital platelet disorder

Case 3

Additional lab results
- Von Willebrand antigen = 55%
- Factor VIII activity = 60%
- Ristocetin cofactor activity = 37%
- vWF multimer analysis shows reduced amount of high molecular weight multimers

Diagnosis of acquired von Willebrand disease is confirmed.

She was treated with vWF/FVIII concentrate (Humate-P) and aminocaproic acid. Endoscopy revealed several small gastric AVMs.

Conclusion

- Bleeding can be multifactorial
- Interventions can be multifactorial
- Team approach and good communication
  - Avoid confusion and delays
- Constant need for re-evaluation
- What questions should be asked in advance to make good decisions
  - Assays
  - Patient presentation
**Thromboelastography**

- **Normal**
- **Coagulopathy/anticoagulants**
  - Long R time
  - Reduced platelet function
  - Low MA
- **Primary fibrinolysis**
  - High Lx10
- **Hypercoagulable**
  - Short R time, high MA
- **DIC**
  - Stage 1 - hypercoagulable state with secondary fibrinolysis
  - Stage 2 - hypercoagulable state

**Decrease in clotting factors**
- Treat with FFP or cryoprecipitate. Hold anticoagulation
  - \( r = 11-14\) min: FFP 8ml/kg
  - \( r > 14\) min, FFP 16 ml/kg

**Treat with anti-fibrinolytics**
- (e.g. \( \epsilon \)-aminocaproic acid)

**Treat with anti-coagulants**

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REFERENCES AND SELECTED READINGS

SELF-ASSESSMENT QUESTIONS

1. TR is a 55-yr-old Russian-speaking man who has arrived in the emergency department with gastrointestinal bleeding, and he is noted to have multiple bruises. He indicates being in the hospital about one month ago with heart pain, and “a piece of metal was placed in my heart.” The patient takes several medications daily but does not know what they are. Initial laboratory test results are hemoglobin 6.5 g/dL and INR 3.0. To help identify potential causes of TR’s bleeding, it would be useful to order all of the following additional laboratory tests EXCEPT

   a. Full complete blood count with differential.
   b. Activated partial thromboplastin time (aPPT), fibrinogen, and repeat INR.
   c. Renal function tests.
   d. Liver function tests.

2. As described by Dr. Reding, which of the following medications or blood products should be ordered initially to help manage TR’s bleeding?

   a. Vitamin K, red blood cells, and 3-factor prothrombin complex concentrate.
   b. Vitamin K, fresh frozen plasma, and red blood cells.
   c. Fresh frozen plasma, red blood cells, and recombinant factor VIIa (rFVIIa).
   d. Fresh frozen plasma and 4-factor prothrombin complex concentrate.

3. If a patient has a factor VII deficiency and requires surgery, the dose of recombinant factor VIIa for factor replacement before surgery should be

   a. Same as for treatment of inhibitors in patients with hemophilia.
   c. Titrated to reach hemostatic level of 80-90%.
   d. Low dose 10-30 mcg/kg.

4. If a patient is being treated in ABC Hospital for bleeding in an emergent situation and may have a bleeding disorder, while awaiting laboratory results the pharmacist should

   a. Identify potential treatment options and available products to avoid treatment delay once the laboratory results are communicated.
   b. Wait for the laboratory results before identifying potential treatment options.
   c. Initiate treatment immediately with a product containing factor VIII because hemophilia A is a common factor deficiency.
   d. Identify potential treatment options and disregard an option if only a partial dose were available initially.

Answers

1. c
2. b
3. d
4. a
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**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>aPCC</td>
<td>activated prothrombin complex concentrate</td>
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<td>aPTT</td>
<td>activated partial thromboplastin time</td>
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<tr>
<td>AVM</td>
<td>arteriovenous malformation</td>
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<td>CBC</td>
<td>complete blood count</td>
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<td>DIC</td>
<td>disseminated intravascular coagulation</td>
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<tr>
<td>ED</td>
<td>emergency department</td>
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<tr>
<td>FFP</td>
<td>fresh frozen plasma</td>
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<td>FVIII</td>
<td>factor VIII</td>
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<td>GI</td>
<td>gastrointestinal</td>
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<td>HCV</td>
<td>hepatitis C virus</td>
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<td>Hgb</td>
<td>hemoglobin</td>
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<td>HIV</td>
<td>human immunodeficiency virus</td>
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<td>ICU</td>
<td>intensive care unit</td>
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<tr>
<td>INR</td>
<td>International Normalized Ratio</td>
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<tr>
<td>IV</td>
<td>intravenous</td>
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<tr>
<td>LVAD</td>
<td>left ventricular assist device</td>
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<tr>
<td>MDS</td>
<td>myelodysplastic syndrome</td>
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<tr>
<td>NSAID</td>
<td>nonsteroidal anti-inflammatory drug</td>
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<td>OTC</td>
<td>over the counter</td>
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<tr>
<td>PCC</td>
<td>prothrombin complex concentrate</td>
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<td>PCC3</td>
<td>3-factor prothrombin complex concentrate</td>
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<tr>
<td>PCC4</td>
<td>4-factor prothrombin complex concentrate</td>
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<tr>
<td>Plt</td>
<td>platelet</td>
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<tr>
<td>RBC</td>
<td>red blood cell</td>
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<td>rFVIIa</td>
<td>recombinant factor VIIa</td>
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<tr>
<td>SSRI</td>
<td>selective serotonin reuptake inhibitor</td>
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<td>vWF</td>
<td>von Willebrand factor</td>
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Instructions for Processing CE Credit with Enrollment Code

Pharmacists and Technicians:

All ACPE accredited activities which are processed on the eLearning site will be reported directly to CPE Monitor. To claim pharmacy credit, you must have your NABP e-profile ID, birth month, and birth day. If you do not have an NABP e-Profile ID, go to www.MyCPEMonitor.net for information and application. Please follow the instructions below to process your CPE credit for this activity.

1. The ASHP eLearning site allows participants to obtain statements of continuing education conveniently and immediately using any computer with an internet connection. Type the following link into your web browser to access the e-Learning site: http://elearning.ashp.org/my-activities

2. If you already have an account registered with ASHP, log in using your username and password. If you have not logged in to any of the ASHP sites before and/or are not a member of ASHP, you will need to set up an account. Click on the Register link and follow the registration instructions.

3. Once logged in to the site, enter the enrollment code for this activity in the field provided and click Redeem.
   Note: The Enrollment Code was announced at the end of the live activity. Please record the Enrollment Code in the grid below for your records.

4. The title of this activity should now appear in a pop-up box on your screen. Click on the Go button or the activity title.

5. Complete all required elements. A green ✔️ should appear as each required element is completed. You can now claim your credit.

6. Available credit(s) will appear beneath the completed required activities. Look for your profession in the list of available credits and click the appropriate Claim button. You might have to click to see more credit options if you don’t see your profession listed.

   CPE Credit for Pharmacists and Technicians: To claim continuing pharmacy education (CPE) credit, you will need to enter your NABP e-Profile ID, birth month, and birth day. Once you have entered this information the first time, it will auto fill in the future. Please note: All CPE credit processed on the eLearning site will be reported directly to CPE Monitor.

7. Review the information for the credit you are claiming. If all information appears to be correct, check the box at the bottom and click Claim. You will see a message if there are any problems claiming your credit.

8. After successfully claiming credit, you may print your statement of credit by clicking on Print. If you require a reprint of a statement of credit, you can return here at any time to print a duplicate. Please note that for CPE credit, printed statements may not be necessary because your credit will be reported directly to CPE Monitor.

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<th>Activity Title</th>
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<td>1.0</td>
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NEED HELP? Contact eLearning@ashp.org.