

ASHP Foundation

DISCOVERIES

An ASHP Foundation publication following our journey to foster safe and effective medication use

DVT: Assess Your Patients' Risk, Take Preventive Measures

More than 2 million Americans each year are affected by deep vein thrombosis (DVT), a blood clot that forms in a deep vein, usually in the lower limbs. DVT can lead to pulmonary embolism (PE), which kills 300,000 people annually. In fact, more people die from PE than from breast cancer and AIDS combined. Yet it remains the number-one preventable cause of death in hospitals.

Because of this, all hospitalized patients are considered at risk for DVT. "I go in with the opinion that all of my patients are going to get drug-based VTE [Venous Thromboembolism] prophylaxis unless they have a bleeding contraindication or they are atypically 'healthy' and thus do not need any specific interventions," says Frank Michota, M.D., Head of the Section of Hospital Medicine at the Cleveland Clinic in Ohio. As a hospitalist – a physician whose primary professional focus is the general medical care of hospitalized patients – Michota regularly assesses patients' DVT risk and the preventive measures they might need.

In the past, only surgical or intensive care patients were considered most at risk for developing DVT or PE. More recently, the definition of "high risk" has changed to encompass any hospitalized patient, although that risk increases if a patient has major surgery, serious trauma, certain medical conditions such as cancer, or prolonged inactivity from any illness. "Hospital patients today are much sicker than those admitted in the past," explains Michota. "They are older, more acute on presentation, and they have more comorbidities. So the typical medical/surgical patient on the non-ICU floor is in fact at greater risk than in the past for DVT. The most recent ACCP [American College of Chest Physicians] guidelines on prevention of VTE recommend that all hospitalized patients that have CHF [acute decompensated heart failure] or severe respiratory disease receive drug-based VTE prophylaxis."

To determine a patient's DVT risk, Michota follows one of two models: individual risk assessment or group risk assessment. In an individual risk assessment, a patient's VTE risk factors are tallied; if a patient has 2 or more risk factors, he or she will receive drug-based prophylaxis. "This approach, although scientifically plausible, has not been rigorously vali-



dated yet," states Michota.

A group risk assessment – the type recommended by the ACCP – is based on population data. For example, certain groups of patients, such as those with CHF, have been shown to have a high risk of VTE without intervention.

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Chairitable Thoughts

From the Chair of the ASHP Foundation Board of Directors



Collaboration: Key to Success

As pharmacists, we have a responsibility to help our patients optimize their medication therapy and avoid medical risks. In this issue of

Discoveries, we hear about many ways that we can play a significant role in preventing and treating venous thromboembolism (VTE) in our patients. For us to be most successful, pharmacists must collaborate in these efforts as members of a healthcare team. Regardless of where the patient presents, the ambulatory clinic or the intensive care unit, pharmacists should play a significant role in a collaborative approach to VTE prevention and treatment. Along with our focus on individual patients, we should work with other health professionals to implement health system-wide approaches to VTE prevention.

The ASHP Foundation is demonstrating its commitment to collaboration in this area through two major program offerings. The Hospital Pharmacist-Hospitalist Collaboration: VTE Prevention and Treatment Team Grant and the Antithrombotic Pharmacotherapy Traineeship. Both of these programs support pharmacist involvement on interdisciplinary teams that specialize in VTE prevention and treatment. Similar to these VTE initiatives, collaboration is paramount to all of the ASHP Foundation's work. This commitment to interdisciplinary collaboration and involving patients in their care is evident in our educational offerings, consensus conferences, practice tools and research grant programs.

As you read this issue of *Discoveries*, I hope that you will be impressed with the potential for pharmacist involvement in a team approach to preventing and treating VTE. Maybe you will decide to implement some of these programs in your practice setting or apply these collaborative models to other patient care issues. Regardless of your approach, I encourage you to be a pharmacy leader who thrives on collaboration to advance practice and improve patient care.

Jill Martin, Pharm.D., Chair,
ASHP Foundation Board of Directors

INFUSIONS

BREAKING NEWS AND KEY RESOURCES

More and more, the pharmacist's role involves educating patients about not only the medications they are taking, but other medical conditions and their preventive measures. For tools to teach patients about DVT, visit the Coalition to Prevent DVT Web site. This site has multiple consumer information tools, including a risk assessment and signs and symptoms of DVT. Go to www.preventdvt.org and click on "About DVT" and "Risk Factors."

DVT.net's Prevention Center also has numerous resources, including a DVT fact sheet, a risk assessment test, a patient's guide for talking to a doctor about DVT, in-flight exercises and more! Visit www.dvt.net.

The Food and Drug Administration's web site offers a great article for patients about travel and the risk of DVT. You can download "Avoid Deep Vein Thrombosis: Keep the Blood Flowing" at www.fda.gov/fdac/features/2004/604_vein.html.



SINGLE DOSE

Deep vein thrombosis (DVT) occurs in about 2 million Americans every year, and up to 600,000 people annually are hospitalized for DVT. Complications from DVT kill up to 200,000 a year in the United States. While most victims are 60 years old or older, DVT can strike anyone at risk. Risk factors can include the presence of serious medical conditions, such as cancer, and conditions as common as pregnancy or use of birth control medications.

—Information from www.preventdvt.org

Traveling? What You Need to Know About DVT



If you travel frequently or a great distance, you are at risk for deep vein thrombosis (DVT). If you travel and you have one or more DVT risk factors, you are at high risk for DVT or pulmonary embolism. And in working with patients, you can play a tremendous role in educating them about DVT risk factors and prevention.

Perhaps the best-known example of DVT and sudden death is that of NBC journalist David Bloom. In April 2003, he was traveling as an embedded reporter with the 3rd Infantry Division in Iraq. Having flown several times to and from Kuwait, David was accustomed to the long-haul flights. He was not, however, accustomed to the dehydration he experienced in the desert, and worse still were the leg cramps he developed from spending long periods of time in a fetal position inside a tank. David was also unaware that he had a genetic predisposition to clotting.

One evening, he called his wife Melanie and mentioned that he was planning to sleep on the fender of the tank that evening. “I said, ‘David, get back into the tank where it’s safe,’” recalls Melanie. “And he said, ‘You know, Mel, my legs have been cramping up. I just have to stretch them out.’ That was as simply as he put it. It sounded so innocuous. But from the day he complained of leg pain to his death was only 2 days. It happened so suddenly, yet I believe his life could have been saved with knowledge.”

Now Melanie is committed to sharing that knowledge as the national spokesperson for the Coalition to Prevent DVT. She travels the country, telling her personal story of loss in the hope that lives will be saved. “DVT is preventable and treatable, and awareness goes a long, long way,” says Melanie.

DVT is the number-one cause of preventable deaths among hospitalized patients. But the general, unhospitalized public has to be aware that they are also at risk — when traveling. “Long-haul flights, car or bus rides — anything that causes restricted mobility — is absolutely a big, big risk factor for DVT,” says Melanie.

Even if a person appears to be in good health and physical condition, there are risk factors that can combine to put him or her at more risk than seems likely — especially if that person embarks on a long trip. For example, a woman in her 40s who takes birth control medication, has a drink containing alcohol on a 6-hour flight, and remains seated for the entire trip has just combined five risk factors: age, medication, dehydration, immobility, and a long trip. “In my husband’s case, he’d lived his whole life with that gene, and he’d flown numerous times as a journalist,” says Melanie. “It took a combination.”

Travelers must educate themselves and be proactive in preventing or decreasing their risk for DVT. “There are very simple steps a traveler can take to prevent DVT,” says Melanie. “Get up frequently, or if you can’t get up, pump your legs — move your foot up and down as if it’s on a gas pedal. Stay hydrated

by drinking a lot of water, because when you become dehydrated, your blood becomes sluggish. Find out if you have any risk factors for DVT. And if you experience any leg pain any time after flying, immediately go to your doctor. A blood clot alone will not take your life, but when a piece of it breaks free and travels to your lungs, it can kill you very quickly.”

As the Coalition’s spokesperson, Melanie also works on the National Quality Forum steering committee to improve DVT screening and treatment guidelines in U.S. hospitals. One of the simplest ways to prevent DVT is through the questions that healthcare providers ask their patients.

“Pharmacists can play a key role in education and awareness, especially for people who are high risk, such as those with prior DVT,” says Cynthia L. LaCivita, Pharm.D., Director of Education and Special Programs for the ASHP Foundation and a former member of the Coalition’s board. “When conducting a patient history, we can find out if they have a history of blood clots in their family, if their occupation involves travel, if they smoke, if they take medications that increase their risk for clotting.

“If a patient has been admitted for DVT, we have to emphasize to the patient that they must be proactive in the future,” says LaCivita. “They have to tell their other health care providers that they have had a DVT. They need to ask if a side effect of any medications they take is an increased risk for blood clotting. If they smoke, they must stop. If they travel, there are certain things they must do to reduce their risk.”

It can be difficult, however, for pharmacists to always know whether to explore DVT risk factors with a patient, especially if that is not the reason that brought them to the hospital initially. “Part of the problem is that there are so many things you want to focus on: hypertension, diabetes,” explains LaCivita. “How do you cover everything that you want to make your patients aware of? That is why the Coalition to Prevent DVT is so important — their focus is on public education and awareness.”

The Coalition’s campaign for awareness appears to be working: A 2003 study showed that 73% of Americans had never heard of DVT. The Coalition’s 2007 survey shows that now 40% of Americans have heard or read about DVT. Even without the survey results, Melanie has seen a shift in public awareness just through the personal stories that thousands of people have shared on the Coalition’s Web site and during her everyday activities. Recently, when she booked a flight to California for an upcoming speaking engagement, the agent warned her of the risks of DVT and advised her to move around during the flight.

Although it can be difficult for her to talk about her own loss, Melanie says, “The most important thing is to reduce the number of preventable deaths. Know your risk factors, and even if you have none, travel with this in mind: Keep the blood flowing!”

To find out if you have any DVT risk factors, take the Coalition’s free Risk Assessment. Visit www.preventdvt.org and click on “Risk Factors.” ❀

Lynda Thomson, Pharm.D., CACP, Inpatient Program Coordinator, Antithrombotic Service and Center for Vascular Diseases, Thomas Jefferson University Hospitals, Philadelphia, PA

Thomson has long been connected to the ASHP Foundation – first as a trainee in the Anticoagulation Traineeship, then as a member of the advisory panel to revise the program, and now as a preceptor in the new Antithrombotic Pharmacotherapy Traineeship. As a preceptor, she shares her knowledge and skills with pharmacists who want to learn how to best care for patients with DVT and other conditions that require taking high-risk, hard-to-dose anticoagulants or thrombolytic agents. The Center for Vascular Diseases, for which Thomson is the Inpatient Program Coordinator, sees 2,600 inpatients each year, handles 3,500 office visits from outpatients each year, and makes 2,500 home calls annually. More than 600 patients per year are transitioned from the hospital to home care, thanks to Thomson and the Vascular Center staff.

At the Center for Vascular Disease, your team treats patients who've already developed DVT. Could you briefly describe your role?

The Center has both an inpatient consult service and an outpatient practice. Our inpatients are not your run-of-the-mill patients. We see patients whom the medical teams are not quite sure how to manage, such as those who are at high risk for bleeding – for example, a patient who has just had a craniotomy but also has a blood clot in his or her leg. We help the patients with their treatments, determining the dose for all of the various antithrombotic, thrombolytic and antiplatelet agents.

Outpatient treatment of acute VTE can be very difficult for hospitals to manage. One reason why Jefferson has been so successful is because we started with a multidisciplinary approach.

For the patients we send home, we provide “bridge therapy.” This entails converting them from low molecular weight heparin or pentasaccharide to warfarin, educating the patient, making sure the patient's insurance will cover the medication, and teaching them how to care for themselves – for example, if they have to inject their medications, we will teach the patient how to do subcutaneous injections. Most patients do not immediately return to the care of their primary care physicians because warfarin and other anticoagulants are very narrow therapeutic index medications with high risk for bleeding or provocation of thrombosis. I will transfer their care once they are stable, but a lot of the patients end up staying with us

outpatients, coming to the office so we can check their INRs and other necessary laboratory testing and adjust dosing if necessary. We also communicate closely with their primary care physician about the care they received and their care plan when returning home.

My team is also involved in research and teaching.

Most people have heard of blood thinners but may not be aware that these are very high-risk medications. How does that affect your ability to care for them?

Most patients have heard of blood thinners, but they often have a misconception about what they are. Some patients understand the seriousness of their condition, and others do not. With the availability of low weight molecular heparins, more people are able to go home sooner, and because of that, they think they are not really that sick and may not be as compliant their follow-up care. If we get the impression that someone is not going to be responsive to followup requirements, we have a contract we ask them to sign to try to impress on them how important follow up is.

We provide every patient with a very comprehensive booklet that covers drug and food interactions, signs and symptoms of bleeding and clotting and the mechanism of the medications they are going to use. We also give them the phone number to our 24-hour answering service so they can always reach us.

What is unique about Jefferson's approach to transitioning patients from the hospital to home?

Outpatient treatment of acute VTE can be very difficult for hospitals to manage. One reason why Jefferson has been so successful is because we started with a multidisciplinary approach. We had a physician who led the entire effort and served as the point person. You have to have someone really interested in directing the effort and a team of people who will take responsibility.

You mentioned Jefferson's teaching component, and part of that is the Foundation's Antithrombotic Traineeship. What is the importance of offering a training opportunity such as this to pharmacists? I actually went through the traineeship myself, and I thought it was very important when I was switching from the treatment of infectious diseases to antithrombotics drug therapy management for me to feel comfortable treating patients.

We just had two trainees here a few weeks ago. One was setting up an inpatient INR monitoring and dosing program, and the other was setting up an antithrombotic service and outpatient warfarin clinic. For them, it was not only important to learn how to utilize antithrombotic agents, but to get ideas on how to set up a service and to know from our experience what does and does not work. ✨

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Manasse Named ASHP's 2007

Whitney Awardee

Henri R. Manasse, Jr., Ph.D., Sc.D., Executive Vice President and Chief Executive Officer of the American Society of Health-System Pharmacists (ASHP) and a highly respected educator and leader in pharmacy and health care, has been named the recipient of ASHP's 2007 Harvey A. K. Whitney Lecture Award. Dr. Manasse has held a variety of academic and administrative positions, including Vice President for Health Sciences at the University of Iowa and a member of the Board of Directors of the National Patient Safety Foundation. He was recently appointed to the Drug Safety and Risk Management Advisory Committee of the U.S. Food and Drug Administration.

Dr. Manasse will receive health-system pharmacy's highest award on June 26th during ASHP's Summer Meeting in San Francisco. He will deliver his lecture at the 2007 Harvey A. K. Whitney Lecture Award Dinner, and his lecture will be included in the ASHP Foundation's Whitney Award Lectures Compilation CD, due out this fall.

Research Grants

2007 Hospital Pharmacist-Hospitalist Collaboration Grant

2007 Junior Investigator Research Grant

"Effect of Lubiprostone on Nutritional Status and Pulmonary Function in Adults with Cystic Fibrosis"

Junior Investigator: Catherine E. O'Brien, Pharm.D.

Senior Investigator: Cindy D. Stowe, Pharm.D.

University of Arkansas for Medical Sciences College of Pharmacy
Little Rock, AR

"Anti-Osteoporosis Medication Trends and Determination in the U.S. Ambulatory Population from 1996 to 2004: Results from the Medical Expenditure Panel Survey (MEPS)"

Junior Investigator: Joel F. Farley, Ph.D.

Senior Investigator: Susan J. Blalock, M.P.H., Ph.D.

University of North Carolina at Chapel Hill
Chapel Hill, NC

DVT: Assess Your Patients' Risk continued from page 1

Taking preventive measures, such as administering anticoagulant medications or fitting a patient with compression stockings, is very important because DVT is as preventable as it is common. Yet statistics for this condition remain alarmingly high. "Almost every registry done in the last 10 years has shown that we do not prophylaxis more than 50% of the people who are eligible," explains Michota. "We may 'know' how to do something, but it does not mean that we actually do it."

There is great opportunity in the area of DVT prevention and treatment for pharmacists to collaborate with hospitalists to guarantee optimal patient outcomes. (In fact, the ASHP Foundation has partnered with the Society of Hospital Medicine to create a research grant program sponsored by sanofi-aventis encouraging pharmacist-hospitalist teams to study VTE prevention and treatment.) Areas in which practitioners can collaborate include "quality rounds to make sure

that people are being assessed appropriately, working together to outline a system of care that prioritizes VTE prevention, and a quality review process to make sure people get what they should," suggests Michota.

The Joint Commission and the National Quality Forum are working to identify and establish a set of performance measures that outline prevention standards for VTE and surgical patients. Currently in the pilot-test stage, these measures are a National Patient Safety Goal for 2008. However, urges Michota, "do not wait for someone else to tell you what needs to be done. Get on board now and start developing programs that improve quality. The quality measures will force systems of care to be developed rapidly, but there is no need to wait to start this process – organize and be proactive. Systems of care are not created overnight." *

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INTERACTIONS

THE ASHP FOUNDATION CALENDAR OF EVENTS

Currently Available

- Applications for 2007 Pharmacy Residency Excellence Awards
- Applications for 2007 Pharmacy Resident Health Services Research Grant
- Applications for 2007 Federal Services Junior Investigator Research Grant

June 25-27

- ASHP 2007 Summer Meeting and related ASHP Foundation activities, San Francisco, California
 - **June 25:** ASHP Foundation 2007 Annual Donor Recognition Breakfast
 - **June 26:** Providing Pharmacy and Pharmacist Services to Alaskans Living in Remote Areas: Overcoming the Challenges with Telepharmacy

July 1

- Applications available for Research Skills Boot Camp
- Applications available for ASHP Foundation Junior Investigator Research Grant
- Deadline for 2007 Pharmacy Residency Excellence Awards applications

August 1

- Applications available for 2007 Oncology Traineeship

September 23

- Walter Jones Golf Classic, the ASHP Foundation's charitable golf tournament to benefit the ASHP Student Leadership Awards

October 1

- Deadline for Research Skills Boot Camp applications

November 1

- Deadline for 2007 Pharmacy Resident Health Services Research Grant applications
- Deadline for 2007 Oncology Traineeship applications

December 1

- Deadline for 2007 Federal Services Junior Investigator Research Grant

***Please note that all applications, nomination forms and instructions are available to download from the ASHP Foundation's Web site at www.ashpfoundation.org.**

INSIDE THIS ISSUE

- Frank Michota speaks about DVT and antithrombotics.
 - Melanie Bloom speaks about travelers' risk for DVT.
 - The head of an antithrombotic clinic gives us her perspective on DVT treatment.
- Discovers is published three times a year by the American Society of Health-System Pharmacists Research and Education Foundation.*

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