Pharmascript

Newsletter of the Maryland Society of Health-System Pharmacists

Volume 36, No. 1. First Quarter 2012

MSHP Vision - To be recognized as the leading organization in Maryland promoting excellence, accountability and leadership through education, research, and the practice of pharmacy to improve patient outcomes.

Inside this Issue:

Telaprevir: Novel Treatment Option for Hepatitis C Virus

Janessa M. Smith, PharmD Candidate, Amy Nathanson, PharmD

Introduction

Telaprevir (Incivek™) is a direct-acting antiviral agent used for the treatment of hepatitis C virus (HCV).[1] It acts by reversibly binding to serine protease and inhibiting viral replication. Telaprevir is indicated for the treatment of chronic hepatitis C genotype 1, in combination with ribavirin and peginterferon alfa for adult patients with compensated liver disease (including cirrhosis). It has been studied in both treatment-naïve patients and patients who have failed peginterferon plus ribavirin (PR) therapy. With serious adverse effects and drug and food interactions, therapeutic management of HCV patients taking telaprevir may become an important new role for pharmacists. This article serves as a general overview of telaprevir and highlights key therapeutic considerations.

Dosing Regimen

The recommended dose of telaprevir is 750 mg given every 8 hours for the first 12 weeks of therapy.[2] After 12 weeks, PR should be continued for an additional 12 or 36 weeks in treatment naïve patients, depending on HCV-RNA levels measured at 4, 12 and 24 weeks. Patients who have been treated with PR previously should continue PR for an additional 36 weeks, despite reduction in HCV-RNA levels.

Efficacy Data

There are three Phase II trials[3-5] and three Phase III trials[6-8] that evaluate the safety and efficacy of telaprevir for HCV. Two notable Phase III trials, ADVANCE and REALIZE, evaluate the role of telaprevir in treatment-naïve and treatment-experienced patients, respectively. Details about both of these trials are presented below.

ADVANCE, New Direction in HCV Care: A Study of Treatment-Naïve Hepatitis C Patients with Telaprevir, is a randomized, double-blind, placebo-controlled trial that evaluated 1088 treatment-naïve patients with HCV genotype 1 infection.[6] These patients were randomized to 1 of 3 treatment groups based on regimen and duration, table 1 outlines the 3 groups. Patients received telaprevir plus PR for either 12 (T12PR) or 8 (T8PR) weeks, followed by PR alone for an additional 12 or 36 depending on HCV-RNA viral load measured and 4 and 12 weeks.

Continued on page 5

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Page 2

MSHP
P.O. Box 2278
Baltimore MD 21203
Phone: (443) 814-9244

E-mail
mshpRx@gmail.com

WEBSITE
http://www.mshp.org

Community, Commitment, and a Resolution to Achieve our Future Practice Vision

2011 W. Arthur Purdum Award Recipient

Daniel M. Ashby, MS, FASHP

Senior Director of Pharmacy
The Johns Hopkins Hospital

Let me begin with a few words of thanks. First, to our MSHP Officers, Brian Pinto, Jill Morgan and Lindsay Helms-Harris, as well as, the members of the Board of Directors let me express my thanks for your service to MSHP and your support of hospital and health-system pharmacy. Selection as the 2011 W. Arthur Purdum Award recipient is a special honor, and this recognition by the Purdum Award selection committee is appreciated.

The theme of my Whitney address was "Permission granted."[1] I'd like to share the concept with you and see how this might apply to initiatives for the Maryland Society of Health-System Pharmacists.

The expression, "permission granted", within the framework of my Whitney Lecture, isn't about asking for and receiving permission. The lecture tells a story about giving ***yourself*** permission and conveys a strong message about motivation, empowerment, responsibility and accountability.

With that thought in mind, we might ask:

- "What do we need to give ourselves permission to change in the years to come?"

"What should we change that would help establish our desired future?"

Key elements of our desired future include:

- Pharmacists spending the majority of their time with direct patient care activities, provided consistently to all patients.
- Drug distribution activities delegated to licensed pharmacy technicians with technology adding value in supporting a safe, effective, and efficient medication use system.
- Activities for Pharmacy students and pharmacy residents engaged in activities that support the educational goals for both groups though their active involvement in patient care.

A practice model that is "comprehensive" and "team based" with representation from specialist and generalist pharmacists, pharmacy residents, pharmacy students and pharmacy technicians. With the objective that each person will be practicing at the "top of their license" … or authorized duties and responsibilities. [1]

With that said, what could we do to increase the rate of change to implement our vision? I'd like to suggest three ideas that I believe will support the achievement of our desired future. The three elements are different from the three items that I spoke about during my Whitney address and may be a little more difficult to achieve. The three topics include (1) an effort to strengthen our sense of "community", (2) an effort to increase our volunteerism and commitment to the Maryland Society of Health-System Pharmacists and (3) a resolution to collectively address and implement the recommendations of the ASHP PPMI Summit and the ASHP Residency Stakeholder Conference.

***The community of hospital and health-system pharmacy*[2]**

Let's begin first with a brief discussion about community. Community, as I define it, reflects a cooperative spirit. When we consider how powerful this sense of community can be, we need look no further then our city and the historical events of 1814.

After burning the nation's capital in the summer of 1814, the British moved on to Baltimore, planning an attack by both land and sea. They made one mistake. They didn't count on the heroism and communal spirit of the people who lived in the city. Men and women … young and old … rose up together as a community to repel the invaders. These citizens fortified the city and took up arms against the greatest army in the world. And, to everyone's surprise, they succeeded in driving off the Redcoats. The response of the entire community of Baltimore made the difference.

How might we apply this sense of community that existed in 1814 to the challenges that face us today in pharmacy practice?

My career began in Southeastern Michigan, an area with strong connections to ASHP and a strong community for hospital and health-system pharmacy. During my time in Michigan, I always felt there was a strong sense of community and a culture that supported collaboration. Maybe, we all feel that way about our own experiences and where we began our careers.

Continued on page 3

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Recipient of the 2011 MSHP Practitioner Research Grant Award:

Whitney Redding, PharmD
PGY-2 Infectious Diseases Specialty Resident, The Johns Hopkins Hospital.

The grant was awarded to complete work on her PGY-2 residency project entitled "Clostridium difficile testing and treatment: An antimicrobial stewardship intervention".

Purdum Award Lecture Continued

Several events however made me wonder if Southeastern Michigan and other parts of the country may have achieved something that would help us.

The first event was a visit to Detroit in October to attend a reunion with the 150 graduates of the Master of Science program from Wayne State University. This Master of Science program had a significant impact on Southeastern Michigan and the entire state. With 150 graduates over the 22 years of its existence, the program had participants all areas of the state. I had dinner the night before the event with John Clark and several friends. John, a former employee of Johns Hopkins Hospital had relocated to Southeastern Michigan as the Director of Pharmacy for the University of Michigan. He commented about the culture he found in Southeastern Michigan and how strong the hospital and health-system community was.

If we believe the best way to strengthen your personal and professional network is through the "principle of shared experiences", it was easy to understand the impact a Master of Science program had where colleagues worked together for 3, 4 or 5 years to complete the program. This shared experience had the ability to support a sense of community, and the ability to unite pharmacists in Southeastern Michigan and the entire state. The "pull through" advantage was the impact on volunteerism and commitment to local and state pharmacy associations for the state.

Following my visit to Detroit, I had the opportunity to speak with a number of colleagues at the ASHP Conference for Leaders in Chicago. Some of these individuals had practiced in Michigan and, as they moved around the country, found differences in the strength of community for hospital and health-system pharmacy. A number of areas seemed to have had events that supported the development of a strong sense of community. These included Michigan, Wisconsin and Ohio. I'm sure there are other examples.

That sense of community in Michigan was supported and encouraged through the cooperation that existed between the Colleges of Pharmacy, the Board of Pharmacy and the pharmacy associations (both hospital and community). There were a number of "tripartite" committees and activities with representation from the three groups, the three Colleges of Pharmacy, the Board of Pharmacy and the associations.

If we were to give ourselves a score (maybe on a 0-10 scale) on our sense of community and the level of cooperation and connectivity that exists between our respective organizations, Colleges of Pharmacy, associations … what score would we give ourselves? Would we all agree that regardless of the score, that our sense of community could be improved?

Social and professional networks maximize cooperation, trust, support, and institutional effectiveness. There is a strong sense of working together toward a shared future, of undertaking duties that may not have personal payoff, but instead benefit others, or benefit the profession as a whole.

Think about the impact this might have if we strengthen the sense of community for the benefit of pharmacy practice in the state of Maryland.

Think about the value of an MSHP leadership breakfast, attended by the majority of Directors, Associate and Assistant Directors of Pharmacy.

Think about the synergy that might come from increased collaboration between the Colleges of Pharmacy, the Board of Pharmacy and our pharmacy associations.

You are an essential member of pharmacy's vibrant community! The question for each of us to consider is: "How can we increase our commitment to the community of hospital and health-system pharmacy and the broader community of pharmacy practice in Maryland?

Volunteerism and Commitment to MSHP

The second topic is the need to strengthen our volunteerism and commitment to the Maryland Society of Health-System Pharmacists. When we think about volunteerism and our commitment to MSHP along with our efforts to improve our sense of community, this seems to be the "chicken or egg" question. Which comes first?

Does our strong sense of "community" support involvement in MSHP?
or
Does our involvement in MSHP support the development a stronger sense of "community" for pharmacy in Maryland?

The answer to these questions is probably "yes."

Continued on page 4

MSHP.ORG

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Page 4

Have You Received Your NABP e-Profile ID Yet?

The National Boards of Pharmacy and the Accreditation Council for Pharmacy Education are implementing an electronic central repository to streamline the collection and reporting of your continuing pharmacy education. This system will enable the State Board of Pharmacy to efficiently verify the completion of your continuing education and eliminate the need for paper or electronic CE statements.

Participant evaluation forms will now request your e-profile number as well as the month and date of your birth in order to begin filing participant information electronically sometime next year.

If you have not yet registered for your NABP e-profile number go to **www.mycpemonitor.net** to register or contact customer service at NABP by phone at 847-391-4406.

A COLLABORATIVE SERVICE cpe monitor FROM ACPE AND NABP

Purdum Award Lecture Continued

Resolutions for this next year

The third topic I'd like to discuss comes to mind when thinking about today's date, November 12, 2011. The significance to me isn't that it is the day after November 11, 2011. This day, 11-11-11, brings about thoughts of Veterans' Day observations, thousands of weddings, engagements and lotto tickets sold. The significance is different for me.

With today's date of November 12th, we are now one full year past the November 7-9, 2010 ASHP Pharmacy Practice Model Summit.[3] Thinking about this anniversary, we have the opportunity to ask ourselves a few questions.

- Have we implemented the recommendations?
- Have we completed a gap analysis at our hospitals?
- Have we collectively identified changes that are needed that go beyond the control of our respective organizations and implemented strategies to bring about change?

Have we made significant and meaningful progress?

If the answers are "no" … "not yet" … "not really" …, my request is that we all make resolutions for this next year.

- A resolution to take steps to increase our sense of community with pharmacy practitioners in Maryland.
- A resolution to support and engage in the activities of the Maryland Society of Health-System Pharmacists.
- A resolution to renew our efforts to implement the recommendations of the Pharmacy Practice Model Summit and the Residency Capacity Stakeholder Conference.

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Pharmascript

Volume 36, No. 1.
First Quarter 2012

MENTORS NEEDED FOR FUTURE PHARMACISTS

The Maryland Society of Health-System Pharmacists and the University of Maryland Student Society of Health-System Pharmacy have had a long-standing student mentorship program.

This year we have a record number of students that have requested mentors. The Student Mentorship Committee would like to encourage you to sign up to become a mentor for a student pharmacist. Mentors serve as a valuable resource to student MSHP members. Mentors should be open to answering student questions about post-graduate training, health-system pharmacy, and their own career paths.

For more information, please contact MSHP Student Mentorship Committee Chair Andrea Passarelli at apass003@umaryland.edu

Telaprivir Continued

The telaprevir groups were compared to PR alone for 48 weeks (PR48). The primary endpoint of the study was undetectable viral load at 24 weeks after the last dose of study drug, defined as sustained virologic response (SVR). The results of the study found that 75% (n = 275) of patients in the T12PR group and 69% (n = 250) in the T8PR arm achieved SVR compared to 44% (n = 158) of patients in the PR48 arm.

In addition to improvements in SVR rates, another benefit seen with telaprevir is the potential to reduce the total treatment duration to 24 weeks in treatment naïve patients, a 50% reduction from the current standard of care which requires 48 weeks of PR therapy. Of the patients taking telaprevir in the ADVANCE study, 58% were eligible to receive the shortened duration of therapy of 24 weeks. Among these patients, 89% in T12PR group and 83% in T8PR group achieved SVR. This benefit was more recently confirmed with the ILLUMINATE (Illustrating the Effect of Combination Therapy with Telaprevir) study.[8] In this study, 92% (n = 149) of patients receiving 24 weeks and 88% (n = 140) of patients receiving 48 weeks of therapy achieved SVR. Researchers concluded that treatment for 24 weeks was noninferior to 48 weeks, in patients meeting the criteria for 24 weeks of therapy (undetectable viral load at 4 and 12 weeks).

REALIZE, Retreatment of Patients with Telaprevir-Based Regimens to Optimize Outcomes, is a randomized trial that evaluated 663 HCV patients with no response, a partial response, or relapse to previous therapy with PR for 48 weeks.[7] These patients were randomized to 1 of 3 treatment groups, based on regimen and duration, table 1 outlines the 3 groups of this study. Two of the treatment arms received telaprevir plus PR for 12 weeks followed by PR alone for a total of 48 weeks or PR alone for 48 weeks (PR48). Of the two groups receiving telaprevir, one group was designed with a four week lead-in period (lead-in T12PR48) to evaluate the effect of lowering the initial viral load by pre-treating with PR before the addition of telaprevir, an approach used in the boceprevir clinical trials, another protease inhibitor for HCV.[9] The other telaprevir group (T12PR48), received telaprevir for the first 12 weeks of therapy, without a lead-in period. The primary endpoint of the study was achievement of SVR, defined as undetectable viral load at 24 weeks after the last dose of study medication. The results of the study found that overall SVR rates were significantly higher in the telaprevir groups (64% T12PR48 and 66% lead-in T12PR48), compared to PR48 (17%). Of the patients that previously relapsed after an initial response with PR, there were significantly more patients that achieved SVR in the T12PR48 (83%) and the lead-in T12PR48 (88%) groups, as compared to the PR48 (24%) group. There were similar findings in patients with a previous partial response (59% T12PR48, 54% lead-in T12PR48 and 15% PR alone) or no response (29%, 33% and 5%, respectively). Relapse rates were lower in patients receiving telaprevir, compared to control (median follow-up 46.4 weeks).

Management of Adverse Effects

Telaprevir was associated with a higher rate of medication discontinuation in both the ADVANCE and REALIZE studies, compared to PR therapy alone.[6,7] The two most reported reasons for discontinuation in each of these studies were anemia and rash. Other adverse effects that occurred more frequently in patients taking telaprevir were pruritus, nausea, and diarrhea. In clinical practice, patients have reported rectal burning and itchy skin associated with a crawling sensation.

Mild to moderate rash has been reported in up to 56% of patients, with severe rash developing in 4%.[2] Symptomatic treatment of rash can be managed with oral antihistamines or topical corticosteroids. Patients with rash should not be given oral corticosteroids because of an interaction with telaprevir. Telaprevir should be discontinued if patients develop systemic symptoms or serious rash such as Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) or Stevens-Johnson Syndrome (SJS).

Anemia is another common adverse effect seen with telaprevir. Hemoglobin levels less than or equal to 10g/dL have been reported in 36% of patients taking telaprevir plus PR, compared to 17% of patients taking PR alone. Severe anemia, defined as hemoglobin levels less than 8.5 g/dL, have been reported in 14% of patients taking telaprevir plus PR, compared to 5% of patients taking PR alone. Ribavirin dose modifications are the current recommendation for management of anemia.[2] For patients without cardiac disease, ribavirin should be decreased to 600 mg per day if hemoglobin levels drop to below 10 g/dL or discontinued for levels below 8.5 g/dL. For patients with cardiac disease, ribavirin should be decreased to 600 mg per day with a ≥ 2 g/dL drop in hemoglobin or discontinued if hemoglobin remains below 12 g/dL despite dose reduction for four weeks.[5]

Continued on page 6

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Page 6

Important Upcoming Dates to Remember:

Saturday March 24
MSHP Spring Seminar Anne Arundel Medical Center, Annapolis MD

Wednesday April 16
IAC Educational Program

Saturday April 21
Maryland Association of Consultant Pharmacists Spring Program. Visit: https://www.ascp.com/chapters/maryland-chapter

Thursday May 3
Eastern States Residency Conference, Hershey PA

Thursday May 10
CE Program: Greater Baltimore Residency Poster Showcase

June 9-12
Maryland Pharmacists Association 130th Annual Convention. Visit: http://www.marylandpharmacist.org

Saturday November 10
MSHP Fall Seminar

Telaprivir Continued

Monitoring of hemoglobin levels at baseline and every 4 weeks throughout therapy is recommended for all patients taking telaprevir plus PR.

Therapeutic considerations

Telaprevir cannot be given as monotherapy. When given alone, rapid development of resistance to telaprevir is likely and achievement of SVR decreases.[1,4] If either peginterferon or ribavirin must be discontinued because of side effects, telaprevir must also be discontinued.[4]

Telaprevir must be given every 8 hours. Currently, the frequency of administration is recommended every 7-9 hours because of the relatively short half-life (0.82-3.2hours), as determined from pre-clinical animal studies.[11,12] However, Vertex Pharmaceuticals is investigating a twice-daily dosing regimen in a Phase 3b study with results expected as early as the second half of 2012.[13]

Telaprevir must be given with a standard fat meal. The absorption of telaprevir is significantly altered by fat intake. The manufacturer recommends taking telaprevir with a standard fat meal (defined as 20 g of fat).[2] Examples of foods to be eaten with this medication include a bagel with cream cheese, a half-cup of nuts, 3 tablespoons of peanut butter, 2 ounces of cheese or 1 cup of ice cream. If taken with a low fat meal (3.6 g of fat), the absorption of the medication is decreased by 202%. A high fat meal (56g of fat) can increase absorption by 139%.

Monitor for drug interactions. Telaprevir is a substrate and inhibitor of cytochrome P450 3A4 enzyme and P-glycoprotein transport.[2] As a result, there are numerous proven and theoretical drug interactions. Telaprevir should not be administered with any medications that are highly dependent on CYP 3A4 for clearance with a narrow therapeutic index since co-administration could lead to unsafe elevations of serum concentrations. Additionally, medications that are strong inducers of CYP 3A4 may compromise the efficacy of telaprevir and should also be avoided. Table 2 provides a list of medications that are specifically contraindicated when administered with telaprevir. A detailed list of these interactions is beyond the scope of this paper, but more information can be found in the package insert.

Summary

Three Phase II and three Phase III trials have demonstrated that the addition of telaprevir to PR can improve SVR in both treatment naïve and patients that have previously failed therapy with PR, as well as decrease the total duration of therapy in treatment naïve patients. With serious adverse effects, a complex dosing regimen and an extensive list of drug interactions, there are a variety of opportunities for pharmacist involvement. The potential role of the pharmacist includes assessing compliance, monitoring for adverse effects and educating the patient to ensure successful HCV treatment. Additionally, careful review of medication dosing schedules with the patient prior to initiation of treatment, can ensure that the patient is informed and empowered during their treatment.

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Continued on page 7

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Page 7

2012 Summer Meeting & Exhibition
Baltimore, MD | June 9–13, 2012

ASHP is exceeding expectations once again! Last year we introduced the new and improved ASHP Summer Meeting in Denver and the feedback was incredible. Participants appreciated the increased education and networking, and took advantage of additional opportunities like the Management Case Studies and Pre-meeting Workshops

Based on the overwhelming positive response to our changes, and the increased attendance, ASHP will once again raise the bar and offer MORE to our attendees at the upcoming ASHP Summer Meeting, taking place this year in Baltimore, Maryland.

Visit http://connect.ashp.org/SM12/Home/ to explore the meeting programming and register!

Telaprivir Continued

Table 1: Phase III Studies

Study	Treatment Arms	Treatment Regimen	Percent Achieving SVR
ADVANCE			
	T12PR (n = 363)	Telaprevir + PR for 12 week, PR for an additional 12 or 36 weeks*	271 (75%)
	T8PR (n = 364)	Telaprevir + PR for 8 weeks followed by placebo + PR for 4 weeks, PR for an additional 12 or 36 weeks*	250 (69%)
	PR (n = 361)	PR + placebo for 12 weeks, followed by PR for additional 36 weeks	158 (44%)
REALIZE			
	T12PR48 (n = 266)	Telaprevir + PR for 12 weeks, placebo + PR for 4 weeks, PR for 32 weeks	171 (64%)
	Lead-in T12PR48 (n = 264)	Placebo + PR for 4 weeks, telaprevir + PR for 12 weeks, PR for 32 weeks	175 (66%)
	PR48 (n = 132)	PR + placebo for 16 weeks, PR for 48 weeks	22 (17%)
ILLUMINATE			
	T12PR24†	PR + telaprevir for 12 weeks, PR for an additional 12 weeks	149 (92%)
	T12PR48†	PR + telaprevir for 12 weeks, PR for an additional 36 weeks	140 (88%)

PR, peginterferon plus ribavirin. SVR, sustained virologic response. *, If HCV-RNA levels were undetectable at 4 and 12 weeks, eligible for an additional 12 weeks of PR therapy, for total treatment period of 24 weeks. †, Patients were required to have an undetectable viral load at 4 and 12 weeks.

Table 2: Drugs contraindicated with telaprevir

Interacting Drug/Drug Class	Clinical Interaction
Alfuzosin	Increased likelihood of hypotension and cardiac arrhythmias
Rifampin	Decreases telaprevir levels
Ergot derivatives	Increased likelihood of ergot toxicity
Cisapride	Increased likelihood of cardiac arrhythmias
St John's Wort	Decreases telaprevir levels
Atorvastatin, lovastatin, simvastatin	Increased likelihood of myopathy and rhabdomyolysis
Pimozide	Increased likelihood of cardiac arrhythmias
Sildenafil, taladafil*	Increased likelihood of visual abnormalities, hypotension, prolonged erection, syncope
Oral midazolam†, triazolam	Increased likelihood of prolonged sedation, respiratory depression

*, When dosed for pulmonary hypertension. Use lowest possible dose for erectile dysfunction and monitor closely. †, parenteral midazolam not contraindicated but dose reductions/monitoring are necessary.

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Page 8

Visit the MSHP Homepage at http://www.mshp.org. Click the picture above on the homepage to be directed to the online registration form.

MSHP Spring Seminar Educational Tracks:

1. Clinical track
2. Preceptor development track
3. Technician track

Registration and Breakfast at 7:30 am.

Lunch and Business meeting at 11:30 am.

Committee and PLG meetings at 1:00 pm.

A Message from the MSHP President…
MSHP Spring Seminar

You are cordially invited to attend the MSHP Pharmacist and Pharmacy Technician Educational Spring Seminar on March 24th. As many of you heard at the Fall Seminar, we are mixing things up a bit this year! The seminar will be held at **Anne Arundel Medical Center Health Sciences Pavilion**, located at 2000 Medical Parkway, Annapolis, MD (a map and directions can be found at: http://www.aahs.org/gethere/hsp_driving.php). There is free parking in GARAGE E, which is identified on the map as well. You will need to enter the Health Science Pavilion on the first floor of the parking garage and then take the elevators to the 7th floor. Registration and breakfast will start at 7:30 am with our first speaker starting promptly at 8 am.

We will have three different educational tracks this year - a clinical track, a preceptor development track, and a technician track. Additionally, there will be a CE presentation about PPMI and another about Medication Safety. We have also listened to the feedback of our members who requested a more substantial business meeting and time with committee chairs, so if you are looking to get involved, this will be a great oppotunity to jump right in! It might be hard to believe but with all this planned we are still about to charge less and get you out earlier! The cost for this program is listed below.

RPH	**Early Registration**	**On Site registration**
Member	$80	$100
Non-member	$100	$120

Tech/Resident	**Early Registration**	**On Site registration**
Member	$60	$80
Non-member	$80	$100

Student **Early Registration** $40 **/ On Site Registration** $60

For the full programming, please see the attached document or visit the website at http://www.mshp.org. You can also register on the website.

During the business meeting, we will be voting on some changes to the MSHP Bylaws and the MSHP Policies and Procedures. Please keep your eyes pealed as the proposed changes will go out to the membership in the next few weeks.

Please e-mail any questions to mshprx@gmail.com.

Lindsay Harris, PharmD, BCPS
MSHP President

Pharmascript

Volume 36, No. 1.
First Quarter 2012

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MARYLAND SOCIETY OF HEALTH SYSTEM PHARMACISTS 8TH ANNUAL SPRING SEMINAR–MARCH 24, 2012

The Agenda

7:30-8:30am REGISTRATION AND BREAKFAST*

8:00-9:00am **How to Kick Start Your Practice Model Changes: What Can You Learn About PPMI from a National Perspective?**
Karl F. Gumpper, RPh, BCPS, FASHP; Director, Section of Pharmacy Informatics & Technology American Society of Health-System Pharmacists

9:00-9:30am BREAK WITH INDUSTRY SPONSORS*

CLINICAL TRACK

9:30-10:30am **Rheumatoid Arthritis: New Drugs and New Challenges**
Leigh Anne Hylton Gravatt, PharmD, BCPS; Assistant Professor of Pharmacotherapy and Outcomes Sciences, Virginia Commonwealth University School of Pharmacy

10:30-11:30am **Management of Alcohol Withdrawal in Hospitalized Patients**
Siu Yan Amy Yeung, PharmD, BCPS, Critical Care Clinical Specialist, University of Maryland Medical Center Department of Pharmacy Services

TECHNICIAN TRACK

9:30-10:30am **Management of Diabetes and Associated Complications**
Jessica R. Crow, PharmD, BCPS, CNSC; Clinical Pharmacy Specialist, Cardiac Surgical Intensive Care and Nutrition Support Service, The Johns Hopkins Hospital Department of Pharmacy

10:30-11:30am **Novel Anticoagulants for Atrial Fibrillation and Venous Thromboembolism: A Panacea or Snake Oil?**
Christopher Ensor, PharmD, BCPS-CV; Clinical Pharmacy Specialist, Cardiothoracic Transplantation and Mechanical Circulatory Support, The Johns Hopkins Hospital Department of Pharmacy

PRECEPTOR DEVELOPMENT TRACK

9:30-11:30am **Experiential Education: Challenges and Impact**
Hoai-An Truong, PharmD, AE-C, MPH; Acting Director, Experiential Learning, Assistant Professor, Pharmaceutical Health Services Research Department, University of Maryland School of Pharmacy

Mark Freebery, PharmD; Assistant Professor, University of Maryland Eastern Shore School of Pharmacy

Nicole Culhane, PharmD, FCCP, BCPS; Director of Experiential Education, Notre Dame of Maryland University School of Pharmacy

11:30am-1:00pm LUNCH AND BUSINESS MEETING*

1:00-1:30pm COMMITTEE MEETINGS AND PLG MEETING*

1:30-2:30pm **Medication Safety in Critical Care Settings**
Elizabeth Wade, PharmD, BCPS; Medication Safety Officer for Medicine/Surgery, The Johns Hopkins Hospital Department of Pharmacy

2:30pm CLOSING REMARKS*

* INDICATES NON-EDUCATIONAL PROGRAMMING

Pharmascript

Volume 36, No. 1.
First Quarter 2012

Page 10

Visit the MSHP Homepage at http://www.mshp.org. Click the picture above on the homepage to be directed to the online registration form.

MSHP Spring Seminar Educational Tracks:

1. Clinical track
2. Preceptor development track
3. Technician track

Registration and Breakfast at 7:30 am.

Lunch and Business meeting at 11:30 am.

Committee and PLG meetings at 1:00 pm.

MARYLAND SOCIETY OF HEALTH SYSTEM PHARMACISTS 8TH ANNUAL SPRING SEMINAR–MARCH 24, 2012

Objectives

Karl F. Gumpper, RPh, BCPS, FASHP
Director, Section of Pharmacy Informatics & Technology American Society of Health System Pharmacists

How to Kick Start Your Practice Model Changes; What Can You Learn About PPMI from a National Perspective?

0025-9999-12-018-L04-P [KNOWLEDGE] 1.0 CREDIT HOUR [0.1 CEU]

1. Discuss trends from the PPMI Hospital Self-Assessment Tool and compare to current Maryland data
2. Determine national trends in pharmacy practice model changes by evaluating the PPMI National Dashboard
3. Evaluate opportunities for Maryland pharmacists to participate in pharmacy practice model change activities

Leigh Anne Hylton Gravatt, PharmD, BCPS
Assistant Professor of Pharmacotherapy and Outcome Sciences, Virginia Commonweath University School of Pharmacy

Rheumatoid Arthritis: New Drugs and New Challenges

0025-9999-12-015-L01-P [APPLICATION] 1.0 CREDIT HOUR [0.1 CEU]

1. Describe rheumatoid arthritis (RA), including the epidemiology, the role of genetics and the pathophysiology associated with the disease
2. Compare and contrast how RA differs from Osteoarthritis (OA)
3. Discuss the new Classification System of RA and apply this criteria to diagnose an RA patient
4. Review the available pharmacologic treatments for RA including mechanism of action, place in therapy and side effects of each therapy
5. Compare and contrast the available pharmacologic treatments for RA in regards to the benefits and limitations of each therapy
6. Create a treatment plan for a RA patient considering available agents, potential contraindications and anticipated adverse effects

Siu Yan Amy Yeung, PharmD, BCPS
Critical Care Clinical Specialist Department of Pharmacy Services, University of Maryland Medical Center

Management of Alcohol Withdrawal in Hospitalized Patients

0025-9999-12-020-L01-P [KNOWLEDGE] 1.0 CREDIT HOUR [0.1 CEU]

1. Describe the pathophysiology of alcohol withdrawal
2. List the risk factors for development of delirium tremens
3. Provide a therapeutic plan for a patient who has alcohol withdrawal syndrome

Jessica R. Crow, PharmD, BCPS, CNSC
Clinical Pharmacy Specialist, Cardiac Surgical Intensive Care and Nutrition Support Service, The Johns Hopkins Hospital Department of Pharmacy

Management of Diabetes and Associated Complications

0025-9999-12-017-L01-T [KNOWLEDGE] 1.0 CREDIT HOUR [0.1 CEU]

1. Define diabetes and explain the pathophysiology of this condition
2. Differentiate insulin products used to control glucose in diabetics
3. Identify classes of oral medications used to control glucose in diabetics
4. Describe the common complications of diabetes

Christopher Ensor, PharmD, BCPS-CV
Clinical Pharmacy Specialist, Cardiothoracic Transplantation and Mechanical Circulatory Support, The Johns Hopkins Hospital

Novel Anticoagulants for Atrial Fibrillation and Venous Thromboembolism; A Panacea or Snake Oil?

0025-9999-12-013-L01-T [KNOWLEDGE] 1.0 CREDIT HOUR [0.1 CEU]

1. Recognize the role of anticoagulation in atrial fibrillation and venous thromboembolism
2. Identify the characteristics of the ideal anticoagulant
3. Describe the advantages and disadvantages of the novel anticoagulants dabigatran, rivaroxaban, and apixaban

Hoai-An Truong, PharmD, AE-C, MPH
Acting Director, Experiential Learning Pharmacy School Assistant Professor Pharmaceutical Health Services Research Dept., University of Maryland School of Pharmacy

Mark Freebery, PharmD
Assistant Professor, University of Maryland Eastern Shore School of Pharmacy

Nicole Culhane, PharmD, BCPS
Director of Experiential Education, Notre Dame of Maryland University School of Pharmacy

Experiential Education: Challenges and Impact

0025-9999-12-019-L04-P [KNOWLEDGE AND APPLICATION] 2.0 CREDIT HOUR [0.2 CEU]

1. Discuss ACPE standards and guidelines for Introductory and Advanced Pharmacy Practice Experiences (IPPEs and APPEs).
2. Describe the changing pharmacy workforce and the impact on experiential education
3. Identify the benefits and rewards of precepting for pharmacist and rotation site
4. Describe characteristics of exemplary preceptors and experiential learning sites
5. Develop strategies for integrating students into your health-system practice sites
6. Apply strategies for successful resolution of challenging learning situations
7. Identify resources available for preceptors and practice sites

Elizabeth Wade, PharmD, BCPS
Medication Safety Officer for Medicine/Surgery

Medication Safety in Critical Care Settings

0025-9999-12-014-L05-P, 0025-9999-12-014-L05-T [APPLICATION] 1.0 CREDIT HOUR [0.1 CEU]

1. Identify risk factors for medical errors associated with critical care areas
2. Analyze literature on prevalence and types of medical errors that occur in this setting in comparison with general care settings
3. Evaluate current recommendations for medication safety in critical care settings