



HOPANews

ASCO Rescinds Pharmacist CE at Annual Meeting

R. Donald Harvey, PharmD, FCCP, BCPS, BCOP

Chair, HOPA Professional Affairs Committee

Assistant Professor, Hematology/Medical Oncology; Director, Phase I Unit

Emory University Winship Cancer Institute

On September 30, ASCO e-mailed the pharmacy community to announce the discontinuation of ACPE-accredited continuing education (CE) at their 2010 Annual Meeting. Upon inquiry, the following response was provided by ASCO:

“Thank you for writing to us—the decision to stop providing specific pharmacy continuing education credits for the ASCO Annual Meeting was not a decision that was reached lightly. As you may know, ASCO is not an ACPE-accredited provider of pharmacy education itself, so we have worked with a separate provider to facilitate this meeting benefit. Because the society is also responding to the current economic climate, we did a review of this benefit as part of a larger review of major contracts. While there was a significant cost to providing this service, the primary factor in making this decision was the change in ACPE accreditation requirements starting in 2009 that would have required significant additions to our programming processes to remain in compliance with pharmacy education standards.

That said, we are actively collecting feedback from our members and attendees who have utilized this service and want to be sensitive to your viewpoint. The current stipulation in many state pharmacy licensing boards to not accept Certificates of Participation from CME activities is unfortunate, as other professions do not have that prohibition (such as nurses and physician assistants).

Please be assured that we take your feedback seriously, and while we cannot reverse this decision for the 2010 Annual Meeting (as we have already completed a significant portion of the planning process), we can certainly review our decision and make changes if necessary for future years.”

As an alternative for this year’s meeting, it was suggested that attendees submit a request to ASCO for a Certificate of Participation through the submission of the evaluation form. Upon reviewing <http://www.acpe-accredit.org> for more information, the following states were found to accept CME-accredited education to varying degrees: Colorado, Connecticut, Hawaii, Idaho, Montana, New Hampshire, and South Carolina. Please refer to your specific state board requirements for more detail.

In response, the Professional Affairs committee is actively engaged with ASCO and their continuing education group with the goal of reinstating ACPE-accredited CE. ASCO, the HOPA Board of Directors, and the HOPA Professional Affairs and CE Accreditation committees will be examining solutions to re-establish CE for the ASCO Annual meeting programming. Feedback from HOPA members has been heard, and more details will follow.

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HOPA Member Publications

Shord SS, Bressler LR, Tierney LA, Cuellar S, George A. Understanding and managing the possible adverse effects associated with bevacizumab. *Am J Health Syst Pharm*. 2009 Jun 1;66(11):999-1013.

Available at: <http://www.ajhp.org/cgi/content/abstract/66/11/999?etoc>

Questions for Institutional Self-Assessment of a Chemotherapy Error Prevention Program

Ray Muller, MS, RPh, FASHP

Associate Director, Division of Pharmacy Services

Memorial Sloan-Kettering Cancer Center

1. Is there an interdisciplinary committee at your institution that continuously monitors the external medication and medical error literature (Institution of Safe Medication Practices, Joint Commission, National Quality Forum, ASHP, Institute for Healthcare Improvement, Agency for Healthcare Quality and Research) in order to be aware of potential risks to your patients based on events elsewhere? If so, does this committee have formal standing and reporting status so that the ongoing risk assessment discussions that occur at your institution are documented and the risk reduction strategies can be rapidly implemented?
2. When/if your institution were to have a severe medication error would the response from leadership be analytical and just (perform a root-cause analysis) or punitive?
3. Does your institution/practice site prohibit abbreviations of drug names (generic and brand) on chemotherapy order sheets and in electronic order sets?
4. Do your ordering and dispensing systems employ the judicious use of TALLman letters in order sets, profiles and labels: vinCRISTine and vinBLASTine; CISplatin and CARBOplatin
5. Does your institution have maximum dose guidelines/ceilings for chemotherapy? If so, are they different for pediatric vs adult patients? What happens if the patient received a bone marrow transplant?
6. Do you have an interdisciplinary pharmacy committee (eg, medication safety subcommittee of P & T committee) that meets regularly and is tasked with evaluating the current system and enhancing the whole medication management system?
7. Do you have real-time access to a record of every chemotherapy dose and supportive medication that a patient receives, inpatient and outpatient? Does the system record cumulative doses of appropriate chemo agents such as anthracyclines and bleomycin?
8. Has your institution taken steps above and beyond using supplemental warning stickers to prevent inadvertent intrathecal administration of vinca alkaloids, including vincristine?
9. Are your medical, nursing, and radiology staffs educated about the need to keep vinca alkaloid doses away from any patient scheduled for a lumbar puncture? Have you instituted formal education and a separate drug distribution policy to prevent this from happening?



10. Does your institution have a documented final checking procedure by two licensed persons (eg, two nurses or a nurse and pharmacist) where the drug dose is recalculated and label is compared one more time to the source document (ie, physician order, either written or electronic)?
11. Does your institution mandate a recording of the “total daily dose” as a required entry on all chemotherapy forms?
12. Is there an interdisciplinary chemotherapy practice committee with active pharmacy participation charged with developing appropriate clinical dose and infusion guidelines for each antineoplastic drug and treatment regimen?
13. Do you have a formal mechanism to report chemotherapy errors and near-misses easily and non-judgmentally? Is the system electronic and easy to use? Are near-miss chemotherapy incidents trended and reported back to all involved parties? Does a pharmacist conduct regularly scheduled educational sessions to review near-miss incidents and how to avoid them?
14. Is there a pharmacy representative on every institution committee in which medications are discussed including the Medical Board, Clinical Council, Hospital Quality Assessment, Patient Safety, and IRB, as well as the P & T Committee?
15. Does Pharmacy leadership take a proactive role in evaluating medication safety issues in high-risk patient populations such as pediatric and geriatric patients; and for supportive medications that may be particularly challenging in cancer patients such as opioids, anticoagulants, or growth factors?

Adapted from Muller RJ, Kloth DD, Freise C. Designing strategies to prevent cancer chemotherapy errors – Part 2. *Clin Oncol News*. 2007;33-8.

Applications Now Being Accepted for HOPA Travel Grants



HOPA would like to invite members with need to apply for a travel grant to attend the HOPA 2010 Annual Meeting. Twenty \$500 travel grants are available this year. Eligibility and application requirements are as follows:

Eligibility

1. Applicant must be a HOPA member in good standing. Practitioners, technicians, or trainees (residents, fellows, students) may apply.
2. Applicants applying for a grant as a technician or trainee must currently be a pharmacy technician, enrolled in pharmacy school, or completing either residency training (PGY-1 or PGY-2) or fellowship training.
3. Recipients must not have received a HOPA travel grant in 2009.

Application Requirements

1. Complete online application by 1/7/10.
2. Submit a current curriculum vitae or resume.
3. Submit a letter from Preceptor/Residency Director or Pharmacy Director that confirms current employment or student status.

Awardees will be selected through a scoring process that includes assessment of need and incorporates merit through abstract submission and an applicant statement. Each grant will be for \$500 to offset the costs of travel, lodging, and/or registration-related expenses.

Application Forms

The Travel Grant application can be completed and submitted online. You received an e-mail with a link to the application form on November 16. The deadline for submitting the completed application is January 7, 2010 at 11:45 PM Pacific time. Applicants will be notified by the second week of January that their application materials have been received and will be notified by February 1 whether or not they have been awarded a grant. All applicants, regardless of award status, will be invited to participate in a Travel Grant post-program survey following the HOPA Annual Meeting.

HOPA is dedicated to facilitating your professional development and encourages anyone who meets these criteria to apply!

—The HOPA Membership Committee

HOPA Listserv Update

*Amelia Chan, PharmD, BCOP
Chair, HOPA Publications Committee*

HOPA has established a listserv for its members to ask questions and share ideas and information. The HOPA listserv is a robust forum that has over 1300 participants worldwide. Since its inception in June 2006, the listserv has over 10,500 messages archived on HOPA's server. The average number of messages per month has increased from 50 in 2006 to 400 in 2009. The Publications Committee is actively working with DesignWrite to implement new listserv software to manage the messages. The new listserv software will provide features including autoarchiving of messages, availability of a "daily digest" option, and the ability to access and view all messages online in date order. The expected launch date is in late December or early January.

In order to keep its listserv professional, valuable, and useful for all subscribers, HOPA has established policies and procedures on its appropriate use. Members are expected to abide by these policies and procedures and should maintain the highest level of standards, professional courtesy, and ethics throughout their discourse and postings to the listserv. Please remember the list is public and archived, so everything you say will be maintained for years to come. Below is a summary of the HOPA listserv policy and procedures:

1. The HOPA listserv may be used only by HOPA members.
2. The discussions on the lists are meant to stimulate conversation, not create contention. Don't challenge or attack others.
3. Do not post commercial messages on the listserv.
4. Every listserv e-mail sent must include the sender's full name, affiliation, location, and e-mail address.
5. The listserv may **NOT** be used by members to:
 - a) Survey members for research purposes
 - b) Advertise job opportunities
 - c) Advertise programs (eg, continuing education) or any other solicitations
 - d) Post items for a non-member
 - e) Post confrontational remarks
6. Listserv users are allowed to survey members on non-research-related topics. Guidelines on surveys posted on the listserv:
 - a) Surveys longer than 3 questions must be submitted to the Chair of the HOPA Publications Committee for approval
 - b) These surveys must include the statement "Approved by the HOPA Publications Committee, [Month dd, yyyy]"
 - c) Results from all surveys should be tabulated and reported back to the listserv 30 days from the date the survey was posted.
7. HOPA reserves the right to suspend or terminate access for members who violate the listserv rules.

HOPA Drug Shortage Survey, May 2009 - Results

Niesha Griffith, MS, RPh, FASHP

Past Chair, HOPA Legislative Affairs Committee

Director of Pharmacy Services, Arthur G. James Cancer Hospital
The Ohio State University

On May 13, 2009, the HOPA Legislative Affairs Committee conducted an e-mail survey of all HOPA members that was about medication shortages and billing for pharmacist services. The survey consisted of 18 questions divided into two sections. The first section contained questions pertaining to recent medication shortages and the impact on practice. The second section focused on current billing practices for clinical pharmacy services.

RESULTS

145 individuals responded to the survey.

Drug Shortages

Participants were asked to rate the effect of the recent shortages of 22 drugs (21 non-controlled, 1 controlled) on the following 6-point scale:

- 1 = did not experience
- 2 = did experience - no impact
- 3 = slight delay in procuring agent
- 4 = major delay in procuring agent
- 5 = treatment changed due to drug unavailability
- 6 = treatment stopped/held until drug shortage relieved or other significant impact

Table 1.

	1	2	3	4	5	6	Response Count
Acyclovir	50.7% (71)	10.7% (15)	10.0% (14)	7.1% (10)	17.9% (25)	3.6% (5)	140
Bleomycin	45.7% (63)	31.2% (43)	15.2% (21)	5.8% (8)	2.2% (3)	0.0% (0)	138
Carmustine	68.6% (94)	16.8% (23)	9.5% (13)	4.4% (6)	0.7% (1)	0.0% (0)	137
Cisplatin	28.1% (39)	28.1% (39)	34.5% (48)	7.9% (11)	1.4% (2)	0.0% (0)	139
Cyclophosphamide oral tablets	78.8% (108)	8.8% (12)	9.5% (13)	0.7% (1)	2.2% (3)	0.0% (0)	137
Dexamethasone	79.3% (111)	7.9% (11)	9.3% (13)	1.4% (2)	2.1% (3)	0.0% (0)	140
Dexrazoxane	34.1% (47)	21.7% (30)	2.9% (4)	15.9% (22)	12.3% (17)	13.0% (18)	138
Doxorubicin	65.0% (89)	19.7% (27)	9.5% (13)	4.4% (6)	1.5% (2)	0.0% (0)	137
Epirubicin	73.2% (101)	18.1% (25)	7.2% (10)	1.4% (2)	0.0% (0)	0.0% (0)	138
Floxuridine	87.0% (120)	8.7% (12)	2.9% (4)	0.7% (1)	0.7% (1)	0.0% (0)	138
Fluorouracil	53.2% (74)	20.9% (29)	12.9% (18)	9.4% (13)	2.2% (3)	1.4% (2)	139
Heparin	54.6% (77)	19.1% (27)	14.2% (20)	4.3% (6)	7.1% (10)	0.7% (1)	141
IVIIG	37.1% (52)	27.9% (39)	16.4% (23)	6.4% (9)	7.9% (11)	4.3% (6)	140
Leucovorin	4.9% (7)	16.2% (23)	12.0% (17)	19.7% (28)	31.7% (45)	15.5% (22)	142
Methotrexate	40.0% (56)	25.7% (36)	16.4% (23)	12.1% (17)	4.3% (6)	1.4% (2)	140
Mitomycin	23.9% (34)	10.6% (15)	12.0% (17)	14.1% (20)	16.2% (23)	23.2% (33)	142
Ondansetron	81.4% (114)	12.1% (17)	5.7% (8)	0.0% (0)	0.7% (1)	0.0% (0)	140
Sargramostim	77.5% (107)	9.4% (13)	7.2% (10)	2.2% (3)	2.9% (4)	0.7% (1)	138
Streptozocin	81.9% (113)	9.4% (13)	3.6% (5)	2.2% (3)	0.7% (1)	2.2% (3)	138
Thiotepa	81.0% (111)	9.5% (13)	5.1% (7)	0.7% (1)	1.5% (2)	2.2% (3)	137
Vinblastine	37.9% (53)	27.1% (38)	16.4% (23)	9.3% (13)	7.1% (10)	2.1% (3)	140
Fentanyl transdermal patches	62.8% (91)	22.8% (33)	6.2% (9)	4.8% (7)	2.1% (3)	1.4% (2)	145

For 20 of the 22 drugs listed, the most common response was that respondents “did not experience” shortages (**Table 1**). The frequency with which this was answered ranged from 23.9% for mitomycin to 87.0% for floxuridine. The most common answers for the remaining two drugs, cisplatin and leucovorin, were “slight delay in procuring agent” (34.5%) and “treatment changed due to drug unavailability” (31.7%), respectively.

In regards to the impact on patient care, less than 8% of respondents reported having to “change treatment due to drug unavailability” with four exceptions: acyclovir (17.9%), dexrazoxane (12.3%) leucovorin (31.7%), and mitomycin (16.2%). Less than 4% of respondents reported having to “stop treatment or hold drug until shortage relieved or other significant impact” except for dexrazoxane (13%), leucovorin (15.5%), and mitomycin (23.2%).

When asked whether or not participants would support HOPA lobbying the FDA to allow for emergency importation of medications to the United States during periods of medication shortages, 78.3% replied “yes,” they would be in favor of such lobbying. However, only 66.2% responded that they would be willing to purchase non-controlled medications from a supplier outside of the United States during times of FDA-declared shortages. That number dropped to 25.0% when considering the purchase of controlled medications.

The survey asked if institutions would be interested in the opportunity to access research agents, destined to otherwise

be destroyed, as a potential source of medication for indigent populations; 79.4% of respondents indicated a willingness to consider the use of these agents. If the laws were changed to allow a central state repository of such medications for indigent patients, 88.0% of survey participants indicated a willingness to provide research agents (that are already commercially available medications) to a repository.

Billing for Pharmacy Services

92.4% of respondents reported not currently billing for clinical pharmacy services. For those who currently bill for clinical pharmacy services, the survey asked which of the following are being billed: Medicare, Medicaid, private payers, selfpay, or “all of the above.” Of the 11 (7.6%) individuals who stated that they are billing for clinical pharmacy services, 8 (72.7%) of those bill “all of the above,” 2 (18.2%) bill only private payers and 1 (9.1%) bills only Medicare.

When asked what services are being billed, 8 individuals provided responses. The most respondents (4) reported billing for anticoagulation. Anemia management, pain management/palliation, supportive care interventions, complementary/alternative medicine consult, and oral chemotherapy management were all indicated by at least 2 or 3 of the respondents.

Of the 6 responses to the question as to whether payment has been received for clinical pharmacy services, 3 respondents indicated payment for anticoagulation services, with anemia management, pain management/palliation and supportive care interventions, each receiving one response. No one reported payment being received for complementary/alternative medicine consult or oral chemotherapy management. (See table for “other” responses.)

When asked whether or not institutions bill as a hospital-based clinic, half of the 16 who responded stated “yes,” they do bill as a hospital-based clinic. Three individuals answered that codes CPT 99211, CPT 99212, CPT 99213 are all used in their institutions. One individual stated only using CPT 99211. Codes MTM CPT 99605 (under Part D), MTM CPT 99606 (under Part D), MTM CPT 99607 (under Part D) are used by two institutions.

Four of 13 individuals answering whether or not their institution has successfully shown a return when billing for clinical pharmacy services indicated “yes,” they had been successful. Of the remaining 9 who answered this question, 3 respondents reported success has not been demonstrated and 6 reported they were unaware whether or not it has.

In terms of how success of clinical pharmacy services is measured, 2 respondents reported using revenue as a means to indicate success. Two respondents indicated the number of successful patient outcomes is used and 1 indicated that decreased or avoided inpatient admission was the institution’s indication of success. No participant chose the options of “reduction in patient sick days” or “increase in patient adherence.”

Given the opportunity to bill for clinical pharmacy services, 82.2% of the 135 participants answering this question stated they would like to bill for such services; 8.9% of respondents were at a hospital that does not bill patients for these services, such as VA hospitals. The most common barrier for billing clinical pharmacy services was a lack of infrastructure to bill, with 30.3% of respondents choosing this option. The level of pharmacy staffing (22.7%), lack of support (14.4%), and lack of understanding for the importance of clinical pharmacy services (12.1%) were also cited as barriers. One individual stated that an unwillingness to have clinical services from the institution was preventing such billing. 19.7% of respondents stated their organization would embrace billing for such services. Four individuals stated that their organizations are currently developing a method to bill for clinical pharmacy services. (See **Table 2** for “other” responses.) Of 143 responses to the question “if a demonstration project was started by Medicare to bill for clinical pharmacy services, would you organization be willing to participate?” 74.9% stated their organization would or likely would participate in a demonstration project to bill for clinical pharmacy services if Medicare supported such a project. Only 2 respondents indicated they do not have an interest.

Table 2.

Survey Question	Response provided as “other”
“If you have billed for clinical pharmacy services, have you received payment for any of the following?”	Pre-treatment counseling session
	Outpatient BMT clinic under MTM
“What do you think would be the biggest barrier for your organization to bill for clinical pharmacy services?”	I have talked to my institution about billing for pharmacy services, and they do not want to do it because they know we will not get paid and don’t want the “bottom line” to look worse for claim denials
	Computer system we are currently using
	Finance department does not clearly understand the role of a pharmacist in an outpatient setting such as a cancer center
	We have started billing in the non-oncology areas, plan is to expand

Conclusions

The findings of this survey of HOPA members indicated that the shortages of acyclovir, dexrazoxane, leucovorin, and mitomycin had the greatest impact on practice. The majority of members recommend for HOPA to lobby the FDA for allowance of emergency importing and that research agents destined for destruction be made available for use in indigent populations.

In regards to billing, the majority of members are not currently billing for clinical pharmacy services but have demonstrated a willingness to do so. It is clear that HOPA can provide a valuable service to its members by providing educational sessions and preparing documents to aid in billing for these services.



Mark your calendars for HOPA 2010 6th ANNUAL CONFERENCE

Oncology Boot Camp

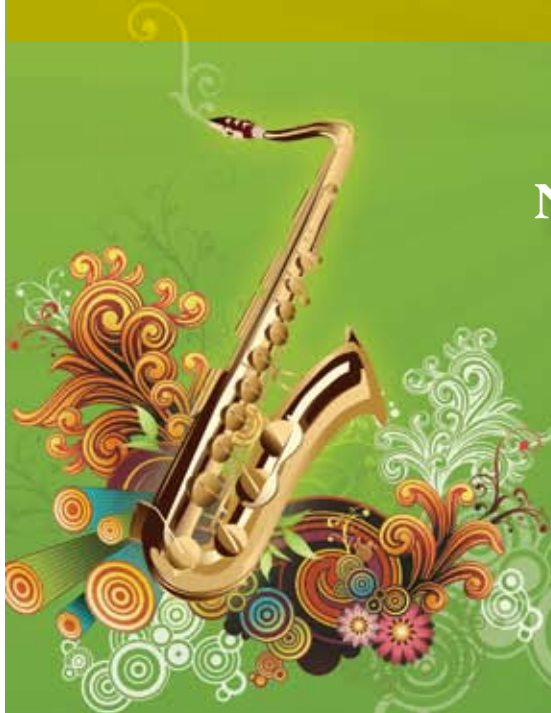
A HOPA 2010 pre-meeting "oncology boot camp" workshop is scheduled for 7:30-11:45 on Wednesday, March 24. This session has been developed for new practitioners and pharmacists who do not focus solely on oncology.

You must register separately to attend this workshop; the registration fee is \$50. Registration will be open sometime in December and will be announced via e-mail.

- Regular programming begins on Wednesday, March 24 at 12 noon and ends on Saturday, March 27 at 1:30 pm
- Breakout sessions will have multiple tracks, including technical, clinical, practice, and administrative topics
- BCOP recertification sessions are scheduled for Friday and Saturday
- Professional Affairs Interest Group meetings are scheduled for lunch-time on Friday (box lunch provided by HOPA for all participants)
- Committee meetings are scheduled for Saturday afternoon after the official close of the meeting
- Early-bird registration began November 4 and ends January 15

March 24-27, 2010
New Orleans Marriott
New Orleans, LA

www.hoparx.org | www.hopaU.org
175 Wall Street, Princeton
New Jersey 08540
877-467-2791



COMMITTEE UPDATES

UPDATE FROM THE BOARD

Phil Johnson
HOPA President

HOPA continues to grow and evolve, addressing the needs of our 1,400+ dedicated members. Your Board developed an aggressive strategic plan for HOPA 2 years ago, and we have completed more than 70% of our goals even while adding new services based on your suggestions. Last month we met at the headquarters of our management company, DesignWrite, to work on current projects and update our plans for the future. Most significant are the following:

1. Development of a resource book for all committee leaders and members. Next we will adapt that document for new officers, who will soon be elected.
2. Continuation of committee officer joint conference calls to share goals and develop areas for collaboration.
3. Significant progress on establishing a HOPA Foundation that we hope will be fully operational within a year.
4. One of our most successful services is the HOPA listserv. Very soon the entries will be in a searchable archive on our website, and it will contain all historical information to date. The listserv is successful because of your participation, and helps the Board and committees determine what areas and trends we should focus on for developing programs, standards, and position papers.
5. Several policies intended to standardize and improve operations will soon appear in the Members Only section of our website.
6. We are aggressively following a plan to expand our grant funding for our annual program, HOPA U, symposia, and other educational endeavors. So far we remain in a strong financial position, even in the difficult financial

times our nation is facing. To ensure we remain strong we rely on our members to provide positive feedback to HOPA sponsors whenever possible.

7. The Board has approved a solid investment plan from our Finance Committee that will ensure we have financial liquidity, along with security.
8. We approved software that will allow all projects to be tracked on our website. This will be a great utility for the Board, committees and special taskforces.
9. Perhaps most significant is the development of an RFP for both meeting management and organizational management. It is prudent to search the market every few years and re-assess our needs. We anticipate several bids and will announce our final decision prior to the March meeting.

The Board is especially proud of the hard work and amazing ideas generated by our committees. I'd like to say more, but you can read about their accomplishments in the "Committee Updates."

The program committee has developed an excellent program for March in New Orleans, and I hope to see you there. The 2011 meeting will be in Las Vegas, and we have already initiated the search for 2012 which will be in the East (we have a 3-year rotation: West, Central, and East).

If you haven't already, please take some time to check out the Members Only section of our website, and HOPA U. Encourage friends to join HOPA (there is now a reward, see Recruit a Colleague description to the right). Engage in the listserv discussions because every question and opinion is important. The Board sincerely appreciates and thanks each HOPA member for helping HOPA become such a dynamic and successful organization in only 6 years. We look forward to hearing from you and working with you in the future.

HOPA "Recruit a Colleague" Program: Stimulus Credits for Current HOPA Members!

As the largest organization of national and international hematology and oncology pharmacists, researchers, technicians, administrators, students, and associated professionals, HOPA would like to represent more of our colleagues while helping our own members subsidize their dues.

With that in mind, HOPA would like to announce our own stimulus program. Earn credits toward your upcoming membership by simply recruiting a new member! A \$10 credit will be earned for each new recruit (to a maximum of \$30/year, \$60 per 2-year renewal). It's as easy as 1, 2, 3! Just simply 1) Find a colleague who would want to join HOPA and reap the benefits of membership, 2) Give them your HOPA member ID number to enter when they fill out the HOPA membership application, and 3) Get a \$10 credit towards your next membership renewal when the new member joins. (Your member ID number is located at the top of your HOPA profile page).

ELIGIBILITY RESTRICTIONS:

Former HOPA members can be recruited as new members only if their membership has lapsed for 2 or more years. **GROUP MEMBERS:** You already receive a membership discount and will not receive \$10 per recruit, although a recruiting record will still accumulate in your HOPA profile.

Remember, being an active HOPA member is an investment in your professional career and an investment in the future of hematology/oncology pharmacy practice. Your involvement is crucial to HOPA's success!

Stephanie Sutphin, Chair
Karen Smethers, Vice-Chair
The HOPA Membership Committee

COMMITTEE UPDATES (CONTINUED)

BCOP Recertification Committee

The BCOP Recertification Committee has identified the 6 topics for the live recertification hours to be provided at the 2010 HOPA Annual Meeting, the ACCP Annual Meeting, and the ASHP Midyear Meeting. The speakers have been selected and are developing the presentations for next year. The topics include Radiation Oncology, Pediatric Malignancies, Cervical Cancer, Melanoma, Pancreatic Cancer, and the Impact of Technology on Chemotherapy/Anticancer Medication Safety. The group continues to develop standard operating procedures for the elemental functions of the committee, including selection of speakers and topics, in addition to review and validation of presentation materials and BCOP recertification assessment questions. Additionally, the committee is working with ACCP and ASHP to improve the sign-in process for individuals seeking BCOP credit at the meetings.

CE Accreditation Committee

By LeAnne Kennedy, Chair

Over the past year, many of you have seen changes in continuing pharmacy education (CPE). ACPE has recently updated their standards to include a focus on active learning and outcome evaluations. So, you may ask, what is active learning? What outcomes are being evaluated?

It is no longer adequate for us to come and sit through a CPE activity and get our CEUs. ACPE feels that attendees who participate in their learning activities need to retain and even use what they have heard to improve patient care. There are several methods used to promote this sort of active learning. One of them is an Audience Response System or ARS. Some organizations use colored cards... others like HOPA have invested in the ARS electronic system, which helps to

tabulate the data for attendance, outcomes research, and future programming at the HOPA Annual Meeting and on HOPA U. The goal of ARS is to help learners actively participate in the learning activity. This can be fact-based or practice-based learning.

Documenting outcomes is an important part of the planning and execution of CPE credit. For HOPA to maintain the highest level of accreditation status, outcome measurements must relate back to the learning objectives to provide evidence that the participants in the activity did learn, that they learned what the activity intended them to learn, and that ultimately patient care will benefit. HOPA thus has to show that knowledge was retained, which can be verified through self-assessment questions. We know that the inclusion of self-assessment questions made the evaluation/credit process time-consuming this year, and we are working to find ways to document outcomes in the most time-efficient manner. In the future, you may be asked to respond to a follow-up survey to assess how much knowledge has been retained, for example, or asked how you are applying what you learned in your current practice. The goal of the revisions to the ACPE standards is to create CPE programming that provides continuing professional development for pharmacists and better patient care, which is the ultimate outcome.

As HOPA's CPE Administrator, it is my responsibility to field questions related to CPE, so if you have any questions, please feel free to contact me at lakenned@wfubmc.edu.

Education Committee

The Education Committee is very excited about the diversity and enthusiasm of the members of its committee, who represent a variety of practice settings, geographic locations (including Hawaii!!),

training, and years of experiences in hematology/oncology. The focus of the work of the committee this year is to develop policies and procedures for the Best Practices initiative and for patient education teaching sheets. Subgroups of the committee will be working on this process, which will then be forwarded to a HOPA task force for further comment and editing before final committee and Board approval. We are also working diligently on creating an Oncology Boot Camp as a pre-meeting symposium for the 2010 Annual Meeting, which will also be captured and offered post-meeting on HOPA U. The committee would like to remind the HOPA membership that there are several quality programs available for CE credit on the HOPA U site (www.hopau.org), which are free to everyone (so tell your friends, even if they are not HOPA members!). Please also watch your mail for a special gift from the committee and Board to remind you about HOPA U!

Legislative Affairs Committee

The Legislative Affairs Committee is paying close attention to the current healthcare debate. The committee has recently developed a letter for HOPA members to send to Congress that addresses several pharmacy issues. A link to the letter can be found on the HOPA home page for members who are interested in sending a copy to their Senator or Representative. Additionally, the committee is working on getting pharmacists recognized as providers for reimbursement purposes, on getting pharmacists included in loan forgiveness programs, and on having pharmacy specialty residents recognized for Medicare pass-through funding. The committee is also working to develop a member survey on the impact of the FDA REMS programs on pharmacy practice.

COMMITTEE UPDATES (CONTINUED)

Membership Committee

The Membership Committee has been meeting on a monthly basis since July and what a quick 4 months it has been! Our enthusiastic members have contributed to new ideas and projects, including the Recruit a Colleague and the Travel Grant programs, which are described in this newsletter. We also launched the New Member Discount program as a way to introduce potential members to the benefits of HOPA as well as give them a financial incentive to give membership a try. Finally, as we head into the second half of this committee year, we will be highlighting oncology technicians and their important role as members of the hematology/oncology healthcare team. So if you are looking for new members, consider your own technicians and share with them the benefits of our organization.

Nominations & Awards Committee

The Nominations & Awards Committee has been busy this Fall! We were very successful in soliciting nominations for the annual HOPA awards, with many outstanding candidates being nominated. The HOPA awards will be presented at the HOPA Annual Conference, which will be hosted in New Orleans, Louisiana this year. HOPA members are encouraged to attend the award ceremonies to honor the achievements of their colleagues.

Currently, the committee is setting the slate for the Executive Board elections this winter. The call for nominations for the HOPA Executive Board opened to the general membership earlier this fall and many qualified candidates were nominated. This winter, the general membership will elect a President-Elect, Treasurer, and two Members-at-Large. The ballot will be sent to HOPA members once the slate has been set. Don't forget to vote—selection of the Executive Board is critical in defining the direction of our organization!

Professional Affairs Committee

Continuing education: The focus and efforts of our committee continue to evolve, with the recent announcement that ASCO is withdrawing pharmacist CE for their 2010 annual meeting (see page 1). The e-mail survey on CE interest for the ASH annual meeting was a great success, with 260 total responses over a 2-week period. Thanks to all members who took the time to respond, as well as the Survey Subcommittee of the Membership Committee for partnering with us.

Booth development: We continue to work on HOPA booth designs, logistics, and cost with the goal of having a presence at a number of other professional meetings. A proposal that includes cost, construction, graphics, and storage will be sent to the Board for review in the coming weeks. Plans for swapping booth space with NCCN are moving forward (thanks to Phil Johnson), with a hope that other organizations will be open to the concept.

Interest groups: For the Annual Meeting, we have recommended standing Professional Interest Groups that will meet each year during the meeting due to further specialized practice settings, and include: Pediatrics, BMT, and Technicians. Other groups will be defined on a year-by-year basis.

Program Committee

The 2010 HOPA Annual Meeting will be held on March 24-27 at the New Orleans Marriott. Since July, the Program Committee has been busy organizing the general sessions, breakout sessions, and symposia that scheduled over the 4-day conference. As in previous years, the 2010 meeting is packed with educational offerings for everyone, along with the opportunity to obtain continuing education credit.

Important points of interest:

- Regular programming begins on Wednesday, March 24 at 12 noon and

ends on Saturday, March 27 at 1:30 pm

- Breakout sessions will have multiple tracks, including technical, clinical, practice, and administrative topics
- BCOP recertification sessions are scheduled for Friday and Saturday
- Professional Affairs Interest Group meetings are scheduled for lunch-time on Friday (box lunch provided by HOPA for all participants)
- Committee meetings are scheduled for Saturday afternoon after the official close of the meeting

Early-bird registration began November 4 and ends January 15. So mark your calendars for the Annual Meeting, and hope to see you all there!

Research Committee

By Judith Smith, Chair

After the Research Committee learned about the change in dates for the HOPA 2010 from June to March, members began to brainstorm options for the traditional poster sessions for clinicians and trainees. Since HOPA publishes accepted abstracts in the *Journal of Oncology Pharmacy Practice*, the deadline for meeting abstracts for publications came early this year on October 5th but then was extended to Monday October 19th, 2009. These abstracts have undergone peer review and notifications have been sent out.

The past few years, trainee abstracts have only been printed in the meeting program book so a later deadline in March has been feasible for the June meetings. However with the change in schedule, this moved the trainee abstract deadline to mid-January. Even with the March submission deadline, trainee abstracts often had limited, if any, data available yet. After extensive discussion, the proposal was made and accepted to change the "poster session" to a "research in progress" session.

COMMITTEE UPDATES (CONTINUED)

What will be the differences between “Trainee Research in Progress Poster Session” and “Research Poster Session” at the HOPA 2010 meeting?

The Trainee Research in Progress Poster Session will be held on Thursday evening. During this session the Research Committee will be recruiting HOPA members to serve as formal “Research Reviewers” to visit each poster and provide feedback to the trainee on their project/research design. Although there will be formal reviewers, this is an excellent opportunity for all HOPA members to mentor our oncology trainees by sharing expertise and guidance on project/research development. Furthermore, this session may serve as a platform to create collaborations on future projects/research. There will be no judging or subsequent awards given for “research in progress” this year. Presenters will be strongly encouraged to submit their completed project/research for presentation at the HOPA 2011 Research Poster Session. To participate in the “Trainee Research in Progress Poster Session” trainees must submit project/research title, presenter name, co-authors, and primary objective in the online Oxford Abstract website: <http://>

hopaconferences-services.net/directory.asp by **Friday January 15th, 2010** at 11:59 PM (PST).

The Research Poster Session will be held on Friday evening. This session will be conducted in the traditional format. The Research Committee will be recruiting poster judges to review and score posters to ultimately select up to four poster awards. The new addition to this session this year will be the opportunity for trainees to participate in the poster judging process. In February 2010, the Research Committee will send out a request for trainees who would like to volunteer to participate in the poster judging process with assigned mentor poster judges. Prior to the poster session each team of mentors and trainees will review abstracts as well as poster scoring and the presenter interview process. After the Research Poster Session, the teams will evaluate and score the posters to make their final recommendations for the poster awards. We felt this would be an excellent opportunity for trainees to learn the other side of the process to prepare better for future research presentations.

Any questions regarding either poster session or if you are interested in serving as a poster judge please contact me directly at jasmith@mdanderson.org.

Standards Committee

The Standards committee is one of the newest committees within HOPA, having split from the Education & Standards committee this year. The inaugural year of this committee welcomes 13 members with diverse backgrounds and practice settings. The committee has been purposed with the task of identifying and establishing standards for the following areas in oncology pharmacy: dosing antineoplastic agents in patients with renal dysfunction, vinca alkaloid administration, establishing of benchmarks for oncology pharmacy, educational standards for teaching and precepting pharmacy students and residents (both PGY-1 and PGY-2) in oncology, and credentialing pharmacists and technicians working in oncology. Despite this shortened organizational year, the Standards committee is determined to create and publish these standards. These standards, backed by the support of HOPA, will be a useful resource to all pharmacists and technicians within HOPA and clinical pharmacy as a whole.

Join us in New Orleans for

HOPA 2010

March 24-27



DRUG UPDATES

Everolimus (Afinitor®)

Class: mTOR kinase inhibitor.

Indication: Treatment of patients with advanced renal cell carcinoma (RCC) after failure of treatment with sunitinib or sorafenib.

Dose: 10 mg by mouth once daily.

Dose Adjustments: 5 mg by mouth once daily, or dose interruption, may be needed to manage adverse events. Reduce dose to 5 mg by mouth daily for patients with Child-Pugh class B hepatic impairment. Do not use everolimus in patients with Child-Pugh class C hepatic impairment. If strong inducers of CYP3A4 are used concomitantly with everolimus, consider increasing the dose of everolimus by 5 mg increments to a maximum daily dose of 20 mg.

Common Adverse Events: Stomatitis, infections, asthenia, fatigue, cough, and diarrhea.

Serious Adverse Events: Non-infectious pneumonitis. Manage by dose reduction to 5 mg by mouth daily or discontinuation until symptoms resolve, and consider use of corticosteroids.

Drug Interactions: Avoid concomitant administration with strong and moderate CYP3A4 or P-gP inhibitors. Avoid concomitant administration with strong CYP3A4 inducers; if the combination cannot be avoided, increase the dose of everolimus as indicated above.

Everolimus in Advanced Renal Cell Carcinoma

*Catherine Weber, PharmD
Oncology Pharmacy Resident
Memorial Sloan-Kettering Cancer Center*

The American Cancer Society estimates that there will be 57,760 new cases of renal cancer and 12,980 deaths from the disease in 2009.¹ Renal cell carcinoma (RCC) accounts for 3% of all malignancies and is approximately the 10th leading cause of cancer death in the United States.² Renal cancer is more common in men than in women (ratio 1.6:1), and the average age at diagnosis is 65 years.² RCC is a highly vascular tumor and accounts for 90% of renal tumors; 85% of these are clear-cell tumors. Other histological types of renal tumors include non-clear-cell carcinoma, type I and type II papillary RCC, chromophobe RCC, and unclassified type.

Unfortunately, RCC is characterized by a lack of early warning signs and very rarely do patients present with the classic triad

of flank pain, flank mass, and hematuria. The estimated 5-year survival rate for patients with stage IV renal cancer is 23%.²

Everolimus (RAD001, Afinitor®) is an analogue of rapamycin, an immunosuppressant, and was first developed as an immunosuppressive drug for the prevention of allograft rejection. The molecular target of everolimus is mTOR; when mTOR is activated, downstream translational proteins are activated, and the rate of synthesis of certain proteins increases. These proteins serve to potentiate cell growth and proliferation, angiogenesis, and cellular metabolism. Everolimus binds to the FK binding protein-12, and this complex inhibits the activation of mTOR. mTOR inhibition may be particularly useful to treat RCC, as clear-cell tumors are highly vascular, and the mTOR pathway potentiates angiogenesis.

Everolimus is currently approved in the United States for the treatment of RCC, after sunitinib or sorafenib failure. This FDA approval came from the results of a phase III study, the RECORD-1 (REnal Cell cancer treatment with Oral RAD001 given Daily) trial published in August 2008.³ The study treated 410 patients with clear-cell metastatic RCC who had progressed on or within 6 months of stopping treatment with sunitinib or sorafenib, or both drugs. Of note, patients could have been previously treated with bevacizumab, interleukin 2, or interferon alfa. Prior therapy with another mTOR inhibitor (temsirolimus) was not permitted, however.

Patients received either everolimus 10 mg by mouth once daily or placebo, administered continuously. The primary endpoint was progression-free survival. Median progression-free survival was 4.0 months in the everolimus group and 1.9 months for placebo ($p < 0.0001$). Objective tumor responses were seen in 1% of patients receiving everolimus; therefore, the result of increased progression-free survival was probably due to disease stabilization. There was no significant difference in overall survival between groups, which was likely due to the cross-over design.³

Adverse events, as predicted, were more common in the everolimus treatment group; however, these events were largely grade 1 or 2. The most commonly reported adverse events were stomatitis, rash, fatigue or asthenia, and diarrhea. These events were only severe in 3% of patients or fewer. Other adverse events that occurred more frequently in the everolimus treatment group included hyperglycemia, hypercholesterolemia, and hyperlipidemia, as well as non-infectious pneumonitis, a potentially serious adverse event.³ In a randomized study, non-infectious pneumonitis occurred in 14% of patients, and some cases were fatal.⁵

DRUG UPDATES (CONTINUED)

Everolimus (Afinitor®)

Current treatment options for stage IV clear-cell RCC include interleukin 2, interferon alfa, sunitinib, sorafenib, and bevacizumab. Temsirolimus, another mTOR inhibitor, can also be used specifically for poor-prognosis patients in the first-line setting for either clear-cell or non-clear-cell histology metastatic RCC.⁴ Although temsirolimus is structurally similar to everolimus, the two agents have never been directly compared in a clinical trial. A distinct advantage of everolimus is the fact that it is administered orally; temsirolimus must be administered weekly as an intravenous infusion. Also, the use of everolimus is preferred as second-line treatment in the metastatic setting whereas temsirolimus is not.⁴

The usual dose of everolimus is 10 mg by mouth once daily, but the dose may need to be reduced to 5 mg by mouth once daily to manage adverse events or in the setting of hepatic impairment. Everolimus is extensively metabolized by CYP3A4; therefore, concomitant administration of CYP3A4 inhibitors is discouraged. If a CYP3A4 inducer must be administered with everolimus, the dose of everolimus may be increased by 5 mg increments to a maximum daily dose of 20 mg.

In conclusion, everolimus is an orally administered mTOR inhibitor indicated for the treatment of RCC with clear-cell histology, after sunitinib or sorafenib failure. The most common adverse events include stomatitis, infections, asthenia, fatigue, cough, and diarrhea.⁵ Future trials should consider the use of everolimus as first-line treatment for metastatic renal cell carcinoma, as well as treatment in the adjuvant setting.

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Pralatrexate (Folotyn™)

Class: Folate analogue metabolic inhibitor.

Indication: Treatment of relapsed or refractory peripheral T-cell lymphoma.

Dose: 30 mg/m² as an intravenous push over 3-5 minutes once weekly for 6 weeks in 7-week cycles

Adverse Event Prevention: Patients must receive 1 mg of vitamin B12 intramuscularly within 10 weeks prior to the start of therapy and then every 8-10 weeks during treatment. Additionally, 1-1.25 mg of folic acid must be taken daily while receiving therapy. Folic acid should be started 10 days prior to the initiation of therapy and continued for 30 days after cessation of pralatrexate.

Dose Reduction: Doses may be reduced to 20 mg/m² if adverse events are not manageable.

Adverse Events: Most common: mucositis, thrombocytopenia, nausea, and fatigue. Serious adverse events include pyrexia, mucositis, sepsis, febrile neutropenia, dehydration, and dyspnea.

Drug Interactions: Drug clearance may be delayed when co-administered with NSAIDs, probenecid, and trimethoprim/sulfamethoxazole.

Pralatrexate in Relapsed or Refractory Peripheral T-Cell Lymphoma

Alana Dikopf, PharmD

Oncology Pharmacy Resident

Memorial Sloan-Kettering Cancer Center

Peripheral T-cell lymphomas (PTCL) include a variety of heterogeneous T-cell and natural killer cell non-Hodgkin lymphomas and make up approximately 5% of lymphoma diagnosis in the United States.^{1,2} Previous studies have provided minimal guidance for first-line therapy due to low numbers of patients with varying stages of PTCL. To date, first-line treatments demonstrate poor response rates.^{3,4} Patients who suffer from peripheral T-cell lymphomas have poor prognosis and limited treatment options.¹ Because of this, better treatments are under investigation to improve patient survival and disease-free progression.^{3,4}

Current approved treatment options include anthracycline and non-anthracycline chemotherapy, stem cell transplantation, single-agent anti-metabolite therapy, bexarotene, and vorinostat.^{1,3-5} Because most patients present with late-stage disease, they are often poor candidates for aggressive treatment and receive single-agent anti-metabolites.¹ Despite the potential

DRUG UPDATES (CONTINUED)**Pralatrexate (Folotyn™)**

use of various agents, response rates have been meager and clinical trials are often recommended as first-line therapy.²

Pralatrexate is a novel folate analogue inhibitor that belongs to the 10-deazaaminopterin class.⁶ The mechanism of action is similar to that of other folate inhibitors in that it inhibits dihydrofolate reductase. Pralatrexate is more active than methotrexate because it has greater affinity for reduced folate carrier type 1 (RFC-1) and is powerfully retained intracellularly by polyglutamylation. In vitro studies demonstrated that the potency of pralatrexate is 10 times stronger than that of methotrexate.⁵ This is due to stronger enzyme inhibition and immunity against the inherent resistance mechanisms malignant cells have.⁷

Pralatrexate established promising results in clinical phase I studies and recently was further investigated in peripheral T-cell lymphomas.¹ The PROPEL (Pralatrexate in patients with Relapsed Or refractory PEripheral T-Cell Lymphoma) trial was the pivotal multicenter, international, phase II, open-label, single-arm study conducted to further examine the activity in PTCL.² Patients were included into this trial if they progressed on one or more previous treatment regimens. The trial treated 111 patients with 30 mg/m² of pralatrexate, given intravenously once weekly for 6 weeks in 7-week cycles until disease progression or severe toxicity was experienced. The primary endpoint was overall response rate and the secondary endpoints were duration of response, overall survival, and progression-free survival. Most patients were treated with a median of 3 therapies prior to treatment with pralatrexate. Overall response occurred in 28% of patients and disease response lasted for a median of 287 days. Response to therapy was seen in 70% of patients after the first dose. Median overall survival was 14.7 months. Major adverse events were manageable.

Pralatrexate is dosed at 30 mg/m² in peripheral T-cell lymphoma as an intravenous push over 3-5 minutes along with free-flowing normal saline.⁶ It is given every 6 weeks in 7-week cycles until progressive disease or unacceptable toxicity is experienced. To prevent severe adverse events, patients should take 1-1.25 mg of folic acid daily starting 10 days prior to initiation of therapy. Folic acid should be continued 30 days after cessation of therapy. Additionally, 1 mg of vitamin B12 should be administered intramuscularly within 10 weeks prior to therapy and then every 8-10 weeks during treatment. Patients cannot receive treatment unless mucositis is less than grade 1, platelets are $\geq 100,000$ for the first dose and 50,000 for subsequent doses, and ANC is $\geq 1,000$. If adverse events should occur, doses can be reduced or omitted, but patients should not be re-challenged with higher doses once adverse events resolve.

Overall, pralatrexate is well tolerated.² Major adverse events reported included mucositis, thrombocytopenia, nausea, and fatigue. In the PROPEL study, 49 patients, or 44%, experienced serious adverse events during treatment or 30 days after the last administered dose.⁶ Seventy-seven patients (69%) were able to receive treatment with the full dose of 30 mg/m² and 34 (31%) necessitated dose reductions to 20 mg/m². Finally, eight patients (7%) died while receiving treatment with pralatrexate or within 30 days after cessation of therapy. Pralatrexate should be administered cautiously in patients with renal dysfunction. Liver and renal function should be monitored closely.⁶

Pralatrexate is available in 20-mg and 40-mg vials that are concentrated at 20 mg/mL.⁶ Vials should be stored in the refrigerator until use and protected from light. If unrefrigerated, the drug is only stable for 72 hours. The vials contain no preservatives and are designed for single use only. During therapy, patients should be monitored for stomatitis and blood cell counts should be evaluated. Blood chemistry should be analyzed on every first and fourth dose of a cycle.

In summary, pralatrexate is a new folate analogue metabolic inhibitor for the treatment of peripheral T-cell lymphoma.² It is able to achieve higher concentrations within cells and possesses greater activity than other anti-metabolite agents. The FDA granted accelerated approval to pralatrexate for the treatment of patients with relapsed or refractory PTCL. This approval was based on an overall objective response rate observed in a single-arm trial. The PROPEL trial demonstrated disease response but survival benefit has not been established. As a condition of the accelerated approval, randomized, controlled trials are required post-approval to verify and describe the clinical benefit of pralatrexate in PTCL.

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DRUG UPDATES (CONTINUED)

Temozolomide IV (Temodar®) in CNS Tumors

Anne DeLisa, RPh, BCOP
Johns Hopkins Hospital

Glioblastoma and anaplastic astrocytoma comprise only a small percentage of adult tumors. Yet survival for these patients rarely extends beyond 1 to 2 years.¹ Patients diagnosed with glioblastoma have a median survival of only 12 months. Anaplastic astrocytoma has only a slightly better prognosis, with a median survival of 18 months from diagnosis.²

Surgery and radiation remain cornerstones in the treatment of primary brain tumors. The use of chemotherapy in these CNS tumors is limited because of the pharmacologic challenge of the blood-brain barrier (BBB). Attempts to disrupt the BBB to allow penetration of chemotherapy have not demonstrated improved survival rates in patients. Nitrosoureas, because of their ability to cross the BBB, have shown some value in the adjuvant treatment of primary brain tumors. Carmustine has been used as a single agent in the adjuvant setting following surgery and radiation. BCNU-impregnated wafers (Gliadel®), implanted at the time of surgical debulking, have demonstrated some improvement of survival in this patient population.³

Temozolomide, an imidazotetrazinone derivative, was developed in the 1980's as an oral alkylating agent.² Temozolomide converts to the active metabolite, MTIC, spontaneously at physiologic pH. Temozolomide is absorbed rapidly following administration and effectively penetrates into the brain and body tissues.^{2,4} Temozolomide is approved in the US for the treatment of newly diagnosed glioblastoma multiforme in combination with radiation and as maintenance therapy alone. Temozolomide is also approved in the US for the treatment of refractory anaplastic astrocytoma. In several countries outside of the US, temozolomide is used in the treatment of malignant melanoma.⁴

Since its approval by the FDA in 1999, temozolomide has demonstrated improvements in survival rates in patients with primary brain tumors. Bioavailability of the oral formulation and ease of outpatient administration have allowed for improved outcomes in malignant glioma patients.³ However, barriers to swallowing, intolerance of the oral formulation because of nausea and vomiting, and the use of temozolomide in pediatric patients present a need for a stable intravenous formulation.⁴

Dacarbazine, DTIC, a triazine alkylating agent, is available as an intravenous formulation. DTIC is a pro-drug, and like temozolomide is converted into its active metabolite, MTIC. Dacarbazine, unlike temozolomide, must be converted via demethylation in the liver. Once converted in the liver, MTIC may not penetrate the BBB as effectively as with temozolomide,

thus limiting the use of dacarbazine in CNS malignancies.^{3,4}

A multicenter, open-label, randomized crossover study of 22 patients with primary CNS tumors was conducted to evaluate the PK of intravenous versus oral temozolomide. Oral temozolomide was administered at 200 mg/m² on Days 1, 2, and 5. Intravenous and oral temozolomide doses were alternated on Day 3 and 4. Subjects were randomized to receive either 150 mg/m² intravenous by 90-minute infusion on Day 3 with 150 mg/m² orally on Day 4, or 150 mg/m² orally on Day 3 followed by 150 mg/m² by 90-minute IV infusion on Day 4. PK of temozolomide and MTIC were determined from samples taken on Days 3 and 4.⁴

The primary objective of the study was to evaluate equivalence of a 90-minute infusion of temozolomide to an equal oral dose. Secondary endpoints of the study included safety and tolerability. Nineteen patients were included in the final analysis. Mean concentration vs. time profiles for temozolomide and MTIC were equivalent for oral and intravenous doses. Adverse events included eleven injection site reactions, which were mild and transient and did not preclude intravenous administration of the dose. Other adverse events were consistent with oral temozolomide adverse events at this dose.⁴

Temozolomide (Temodar®) is available as 100 mg of powder for injection stored at 2°-8°C (36°-46°F). Reconstitution with sterile water for injection should be done after the powder is brought to room temperature and results in a 2.5 mg/mL concentration. The reconstituted solution is stable for 14 hours. Further dilution of temozolomide is not recommended. The dose is added to a sterile empty 250 mL PVC infusion bag and administered as an infusion over 90 minutes.⁵

Intravenous temozolomide provides a safe and effective alternative to oral dosing for primary CNS tumors in pediatric patients, in patients who have lost the ability to swallow, or in those who cannot tolerate the oral dosing formulation due to nausea and vomiting.

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HOPA UNIVERSITY

A Website for HOPA-Sponsored Educational Activities

- A centralized library of HOPA-sponsored educational courses and activities
- Where you go to claim credit for attending HOPA meetings and other educational activities
- A permanent transcript of educational credit you have received through HOPA
- AND MORE!



Seven educational programs are currently available on HOPA U at www.hopaU.org/activities.aspx. Please note that those who claimed CE credit for the live version of these programs are ineligible to claim credit for the online activity.

1. Best Practices in Investigational Oncology Pharmacy

This activity is based on a live program at HOPA 2009 in Miami.

2. Update on Cytomegalovirus and the Role of New and Emerging Therapies

This original activity is not based on a previous live program.

3. New Directions in Metastatic Renal Cell Carcinoma

This original activity is not based on a previous live program.

4. Integrating the Etoposides into Clinical Practice: Focus On Breast Cancer

This activity is based on a live program at HOPA/ISOPP 2008 in Anaheim.

5. Optimizing Patient Adherence to Self-Administered Chemotherapy: Best Practices for Hematology/Oncology Pharmacists

This activity is based on a live program at HOPA/ISOPP 2008 in Anaheim.

6. Targeted Drug Therapies for the Treatment of Non-Small-Cell Lung Cancer

This activity is based on a live program at HOPA/ISOPP 2008 in Anaheim.

7. Updates in Cancer Supportive Care: Venous Thromboembolism, Tumor Lysis Syndrome, and Chemotherapy-Induced Nausea and Vomiting

This activity is based on a live program at HOPA/ISOPP 2008 in Anaheim.

