Hematology/Oncology Pharmacy Association

HOPA News

Spring 2011

Neuroblastoma and Immunotherapy: Targeted Therapy for Children

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Neuroblastoma is one of the most common extracranial solid tumors of childhood. It represents 8%–10% of all childhood cancers and is responsible for 12% of all cancer deaths in children younger than 15 years of age. The median age at diagnosis is 23 months, with a peak incidence between infancy and 4 years of age. The majority of tumors present in the abdomen; most arise from the adrenal gland but can present anywhere along the sympathetic nervous system.[1]

The treatment of neuroblastoma varies and depends on the patient's risk stratification, which is currently defined as three categories of disease: low, intermediate, and high. Each risk level takes into account the patient's surgical staging and age at diagnosis, MYCN amplification status (a proto-oncogene that promotes cell division), DNA ploidy, and the histopathologic classification (i.e., the Shimada Index).[1] Nearly half of all patients with neuroblastoma present with high-risk disease, which is associated with widespread disease, aggressive features, and poor long-term survival despite aggressive multimodal therapy.[1-3]

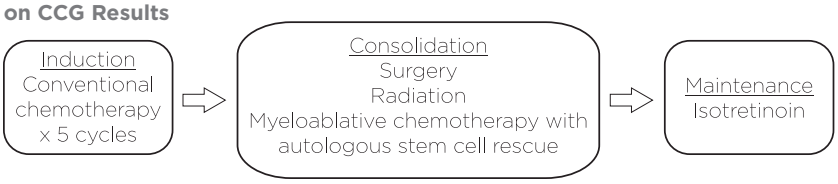
Since 1999 the standard of high-risk neuroblastoma treatment has been based on the results of a Children's Cancer Group study in which isotretinoin (13-cis-retinoic acid) is incorporated as maintenance therapy following autologous stem cell transplantation (**Figure 1**).[4] The study demonstrated that autologous stem cell transplantation was superior to additional chemotherapy as consolidation therapy (34 ± 4% vs. 22 ± 4%, p = .034) and that the addition of isotretinoin as maintenance therapy was superior to no maintenance therapy (46 ± 6% vs. 29 ± 5%, p = .027), both with regards to 3-year event-free survival.

Isotretinoin represents one of the first targeted therapies routinely incorporated into pediatric oncology practice to help promote differentiation and maturation of minimal residual disease in high-risk neuroblastoma.[5]

Contents

Although the exact mechanism is unknown, retinoids appear to modulate the transcriptional regulatory activity of a set of nuclear retinoic acid receptors (RARs) and retinoid X receptors (RXRs) belonging to the super family of thyroid/steroid hormone receptors. The two families of receptors (RAR and RXR) mediate the differentiation and growth arrest of malignant cells.[6] The retinoid agents isotretinoin and tretinoin (ATRA) have both been evaluated in neuroblastoma and are effective, but trials have shown that isotretinoin results in higher drug concentrations in neuroblastoma cells with a longer duration of activity in comparison to tretinoin.[6]

Figure 1. Standard Therapy for High-Risk Neuroblastoma Based on CCG Results



Immunotherapy and Neuroblastoma

Targeted immunotherapy represents the next major development in the treatment of high-risk neuroblastoma and is focused on the overexpression of disialoganglioside (GD2) by neuroblastoma cells.[7] GD2 is a surface glycolipid antigen that is normally found on neurons, skin melanocytes, and peripheral pain fibers.[8] In neuroblastoma, GD2 is abundant and expressed in 100% of NB cells, facilitating the attachment of tumor cells to the extracellular matrix. To date, two GD2 antibodies have been investigated in neuroblastoma—a murine antibody (3F8) and a chimeric antibody (ch14.18). Upon binding to the GD2 antigen, these antibodies trigger apoptosis of tumor cells via antibody-dependent cellular cytotoxicity (ADCC) and complement-dependent cytotoxicity (CDC). In addition, anti-GD2 therapy may prevent the attachment of circulating malignant cells to the extracellular matrix.[8] Ch14.18 demonstrates 50–100 times more potency for the GD2 antigen than the 3F8 antibody.[3]

Because ADCC is an important facet of immunotherapy, cytokines such as interleukin-2 and granulocyte macrophage colony–stimulating factor (GM-CSF) are often given in combination with ch14.18 to overcome the often depressed ADCC response in cancer patients.[8] GM-CSF is a recombinant hematopoietic growth factor that supports survival, clonal expansion, and differentiation of hematopoietic progenitor cells. GM-CSF induces partially committed progenitor cells to divide and differentiate in the granulocyte-macrophage pathways. GM-CSF monotherapy stimulates the natural antitumor activity of the immune system by direct activation of monocytes, macrophages, dendritic cells, and indirect activation of T cells via TNF, interferon, and IL-1.[9,10] In contrast, IL-2 activates natural killer (NK) cells, generates lymphokine-activated killer (LAK) cells, and augments ADCC.[5] When GM-CSF or IL-2 are given in combination with ch14.18, the monoclonal antibody serves as a homing beacon to attract components of the stimulated immune system to neuroblastoma cells to trigger apoptosis.

Immunotherapy Plus Standard Therapy

Yu and colleagues recently published the results of a Children's Oncology Group study that evaluated the impact of the ch14.18 monoclonal antibody plus GM-CSF and IL-2 in treating high-risk neuroblastoma.[3] Following completion of standard therapy for high-risk neuroblastoma, 226 patients underwent randomization to receive isotretinoin with or without ch14.18 during the posttransplantation phase. Randomization and study regimens are depicted in **Table 1**.

All randomized patients had at least a partial response to treatment prior to autologous stem cell transplant (>50% tumor reduction) and began study therapy within the typical 50–100 days following transplantation. Via an intention-to-treat analysis, the primary endpoint of this study was to determine 3-year event-free survival from the time of enrollment (posttransplant period). A secondary objective was to assess overall survival in the event the treatment arms differed by greater than 15% with regard to event-free survival. Patient and tumor characteristics were similar among each treatment group with the most common features being age equal to or greater than 18 months, stage 4 neuroblastoma, and unfavorable histology.

Following the Lan-DeMets approach, an interim analysis demonstrated a more favorable rate of response to immunotherapy versus standard therapy. As such, randomization onto the standard therapy arm ceased. Patients receiving immunotherapy demonstrated 66 ± 5% 2-year event-free survival versus 46 ± 5% for standard therapy (p = .01). Furthermore, a significant difference was estimated for overall survival at 2 years with immunotherapy versus standard therapy (86 ± 4% vs. 75 ± 4%, respectively; p = .02). Tumor-specific factors that were determined to be most significantly associated with a diminished response to either therapy include stage 4 disease, diploidy, and partial response prior to autologous stem cell transplant.

Table 1. Treatment Regimens

Standard Therapy (n = 113) 6 cycles (28 days each)	Immunotherapy (n = 113) 6 cycles (28 days each)
Isotretinoin 160 mg/m^2 divided BID x 14 days	*Cycles 1, 3, 5* Ch14.18 25 mg/m^2 daily x 4 days (days 4–7) GM-CSF 250 mcg/m^2 daily x 14 days (days 1–14) Isotretinoin 160 mg/m^2 divided BID x 14 days (days 15–28) *Cycles 2, 4* Interleukin-2 3.0 x 106 IU/m^2/day continuous x 4 days (days 1–4) Ch14.18 25 mg/m^2 daily x 4 days (days 8–11) Interleukin-2 4.5 x 106 IU/m^2/day continuous x 4 days (days 8–11) Isotretinoin 160 mg/m^2 divided BID x 14 days (days 15–28) *Cycle 6* Isotretinoin 160 mg/m2 divided BID x 14 days (days 15–28)

Toxicities varied significantly between treatment arms and appeared to be more prominent and problematic with ch14.18 therapy. Pain represented the most common toxicity and manifested as grade 3 or 4 in 52% of patients receiving combination therapy including ch14.18 as compared with 6% receiving isotretinoin monotherapy. Interestingly, pain occurred more frequently during cycle 1 than during cycle 5 (37% vs. 14%; p < .001) and often presented in the abdomen. Capillary leak syndrome (23%) and grade 3 or 4 hypersensitivity reactions (25%) represent two toxicities unique to ch14.18 and appear to be significantly worse during concomitant infusion of interleukin-2 (cycles 2 and 4).

Other notable toxicities included fever (39%), hypokalemia (35%), hyponatremia (23%), elevated liver transaminase (23%), hypotension (18%), diarrhea (13%), urticaria (13%), and hypoxia (13%). One patient died due to an accidental overdose of IL-2. The authors did not elaborate on the severity or grade of all toxicities; however, they noted that symptoms appeared to be self-limited and resolved within a reasonable time following discontinuation of immunotherapy.

Conclusion

Despite aggressive therapy, more than 50% of high-risk neuroblastoma patients will suffer from relapse and succumb to their disease. Investigators believe that overcoming chemotherapy-refractory residual disease is the key to achieving a cure or long-term remission.[3] Immunotherapy directed against the GD2 antigen represents a major advancement in the management of high-risk neuroblastoma and the first targeted therapy developed specifically for a pediatric malignancy. The humanized murine GD2 antibody—ch14.18—is associated with severe, yet transient, toxicities. However, improved event-free survival for such a dismal malignancy may outweigh the risk of temporary toxicity in young neuroblastoma patients.

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Wrapping Up HOPA's 7th Annual Conference

Nearly 700 hematology/oncology pharmacists attended this year's annual conference at the historic Grand America Hotel in Salt Lake City, UT. Mild temperatures and snow-capped mountains served as a backdrop to a wide range of educational sessions, poster presentations, BCOP specialty sessions, and networking opportunities for new and experienced pharmacists. The exhibit hall boasted 31 booths, providing attendees access to state-of-the-art products, services, and information pertinent to the demands of oncology pharmacy. Their support and information was much appreciated.

Attendees left inspired and reenergized with loads of new knowledge, best practices, and new and renewed relationships with colleagues from across the country. We look forward to seeing you next year at HOPA's 8th Annual Conference in sunny Orlando, FL, March 21–24.

"First HOPA conference and it was great."

"HOPA's program committee and everyone involved in organizing the conference should be congratulated. It is only my second HOPA conference, but each time I attend I also comment to colleagues that it is by far the most beneficial and best conference I attend! Absolutely love it!"

"Keep up the good work to all of those involved in the planning/production of the annual HOPA meeting! Job well done!"

"Great meeting! This is my fourth meeting and it felt like the information presented was more focused than previous years."

"I am the lone pharmacist in an infusion center attached to our rural community hospital. I appreciated the knowledge I gained at this conference."

"Did I mention how GREAT each of the BCOP sessions were? Very strong, well-chosen, outstanding speakers and great handouts and references."

"Excellent program—I will highly recommend to my colleagues."

Newly Approved "HOTopics" in Breast and Prostate Cancer Treatment

Lisa M. Savage, PharmD BCOP, Medication Safety Clinical Specialist, The James Cancer Hospital at The Ohio State University

Last year brought us the approval of many new therapies, some with novel mechanisms and others with improved survival. Two of these therapies—eribulin (Halaven®, Eisai) and cabazitaxel (Jetvana®, Sanofi-Aventis)—were reviewed in February's HOTopics Webinar.

During the Webinar, Dr. Michael Berger, specialty practice pharmacist in breast oncology from the James Cancer Center at The Ohio State University, explained that eribulin presents another option for treating metastatic breast cancer (MBC). The compound works on microtubules but, unlike taxanes, it inhibits the growth phase without affecting the shorting phase, thereby preventing microtubule formation.[1,2] (See *HOPA News* Winter 2011 for a review of eribulin.[3])The EMBRACE trial compared eribulin to a treatment of physician's choice (TPC) in heavily pretreated MBC patients.[4] Results showed statistically significant increases in overall survival (OS) by 2.5 months and overall response rate (ORR) by 7% in favor of the eribulin arm. The incidence of grade 3/4 neutropenia was 45% (twice as high as TPC), and incidence of peripheral neuropathy was four times greater for eribulin than TPC (8.2% vs. 4%, respectively).

The second portion of the Webinar was a review of cabazitaxel led by Dr. Sherry Vogt, GU specialty practice pharmacist from the James Cancer Center at The Ohio State University. Cabazitaxel, a second-generation semisynthetic taxane, was approved in June 2010 for use in docetaxel-refractory metastatic hormone-refractory prostate cancer (HRPC).[5] The main trial that contributed to its approval was TROPIC, which compared cabazitaxel/prednisone to mitozantrone/prednisone in patients with metastatic HRPC who progressed after antiandrogen withdrawal and docetaxel.[6] All of the studied endpoints showed statistically significant improvement of cabazitaxel/prednisone over mitoxantrone/prednisone—OS (primary endpoint) and secondary endpoints of progression-free survival (PFS), tumor response rate, prostate-specific antigen (PSA) response rate, time-to-tumor progression, and time-to-PSA progression. The cabazitaxel arm also revealed higher percentages of neutropenia (82% vs. 58%), febrile neutropenia (8% vs. 1%), and anemia (11% vs. 5%) compared to the mitoxantrone arm. In addition, all grades of nausea, vomiting, and diarrhea were more common in the cabazitaxel arm. Because of the risk of neutropenic complications (a black box warning exists for this reason), patient selection may play a critical role in the incorporation of cabazitaxel into treatment regimens for metastatic HRPC.

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	Eribulin (Halaven®)	Cabazitaxel (Jetvana®)
FDA labeling	Metastatic breast cancer (MBC) Receipt of two prior chemo regimens for MBC Prior regimens (for all stages) should have included an anthracycline and a taxane	Metastatic hormone-refractory prostate cancer Previously treated with docetaxel Used in conjunction with prednisone
Details	Non-taxane microtubule inhibitor Synthetic halicrondrin B analogue derived from *Halichondira okadai* sea sponge	Low affinity for p-glycoprotein Greater blood-brain barrier penetration Additional activity in docetaxel-resistant cell lines
Dosing	1.4 mg/m², IV bolus over 2–5 min, days 1, 8 of a 21-day cycle	25 mg/m² over 1 hr on day 1 of a 21-day cycle ***plus*** Prednisone 10 mg orally daily
Dose adjustments	Needed for renal and hepatic dysfunction	No data in severe renal or hepatic impairment
Notable ADRs	Neutropenia Febrile neutropenia Peripheral neuropathy	Neutropenia (black box warning) Diarrhea Nausea/vomiting Hypersensitivity reactions (HSR)
Drug interactions	Clinically negligible via CYP450	80%–90% metabolize by CYP 3A4/5 Three active metabolites
Rx Pearls	Incompatible with dextrose EKG monitoring recommended to patients with congestive heart failure, bradyarrhythmias, electrolyte abnormalities, and QTc-prolonging medications	Secondary prophylaxis with granulocyte-colony-stimulating factor, may need to consider primary prophylaxis Premeds needed for HSRs Requires two separate dilutions PVC-free container and inline filter

Listserv Survey: Summary of Results

HOPA members were surveyed about their satisfaction with the HOPA Listserv. The survey, developed by the Publications Committee and approved by the Membership Committee, asked an array of questions concerning convenience, functionality, and usefulness of the Listserv. More than 348 members responded to the survey (19% return rate). The survey results are discussed below.

General Listserv Feedback

Note: Responses that indicated "strongly agree" and "agree" were combined to form the percentage.

- 79% find great value in the Listserv.
- 78% feel their colleagues act professionally.
- 85% want their colleagues to post their name and affiliation.
- 60% read individual e-mail items posted on a daily basis.
- 90% cited a lack of time as the primary reason for not reading the Listserv on a regular basis.
- 49% want a chat room where members can post questions and get quick responses.
- 58% would use a special interest Listserv.
- 25% would use a special interest Listserv in lieu of a general Listserv.

Special Interest Group Feedback

Table 1 shows respondents' interest in specific Listserv subsets based on the current special interest groups (SIGs); members were allowed to select more than one SIG.

Table 1. Member Interest in Specific Listserv Subsets Based on SIG Involvement

Listserv Subset	Raw Number	Percentage of Total Group (%)
Ambulatory care	165	48
Administration	117	34
Bone marrow transplant	106	31
New practitioners	77	23
Pediatrics	49	14
Technicians	27	8
None of the above or general Listserv only	105	31

Listserv Archive

- 53% find value in the Listserv archive.
- 22% find the Listserv archive to be functional and easy to use.

Additional Comments

A great deal of information and feedback were provided by members in the additional comments section of the survey. The majority of issues regarding member dissatisfaction stemmed from other users not following Listserv policies and general practices, such as replying to the entire Listserv with "thank you," "ditto," "me too," and other unnecessary responses. Members felt that these responses added to the already overwhelming volume of e-mails. Many of these respondents indicated that they delete most of the e-mails and responses because of the sheer volume and excessive number of unnecessary responses. Members would like users to do more research before asking questions on the Listserv, especially for those questions that have already been answered and can be found in the Listserv archive. Members are still having difficulty accessing the Listserv archive and do not find it to be user friendly.

In general, members find the interaction with other professionals very useful. During the next committee year, the committee may begin to investigate some of these issues and brainstorm ways in which to improve the noted deficiencies or areas of dissatisfaction.

Board Update

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

What does HOPA value? Certainly member involvement, top-tier education, the energy of a familiar group, and superb leadership have been cornerstones of our organization since its creation. As we look to the future, it becomes clear that organizational focus, appropriate resource allocation, and innovative approaches to new opportunities must also guide our growth. Along with these principles, HOPA's board and members must embody the values of leadership, collaboration, integrity, responsibility, and innovation, while expressing a caring attitude toward others and especially the patients we serve. Over the years HOPA has been a very vibrant organization and one that has grown substantially since its inception. At this point in our development, I believe HOPA must continue to focus our efforts to achieve goals that will improve our recognition in pharmacy and hematology/oncology, keeping in mind that our ultimate goal is improved patient outcomes through member efforts.

During the next few years, the tool we will use to achieve our goals will be the HOPA Strategic Plan, which is available at www.hoparx.org. A number of members, as well as current and past leaders of HOPA, convened to create this roadmap for the next 3–5 years. The guiding principle is that any individual affected by cancer will have a hematology/oncology pharmacist as an integral member of his or her care team. To achieve this, the plan focuses on three primary areas: (a) advocacy, (b) practice standards, and (c) education. During the coming year, we will increase our efforts in each area and develop tangible tools for members and leaders to expand their role and knowledge in the care of patients with cancer.

Advocacy efforts will focus on legislative actions on practice issues (e.g., drug shortages) as well as publicizing our roles in cancer patient care. Bolstering member communication with politicians and establishing organizational connections will ensure we have a voice in policy decisions that affect our profession. Practice standards will help to formally define our roles and responsibilities, fundamentally helping to define what patients and providers can expect from us. Educational efforts will continue to expand to ensure that high-quality information for day-to-day practice is accessible and applicable for members.

All of these efforts will take resources, including substantial member involvement. The development of the Volunteer Activity Center (VAC) is critical for understanding the variety of strengths members bring to HOPA. If you haven't already done so, I strongly encourage you to go online to the VAC and upload your CV and other information on your experience and assets. This year we have restructured a number of committees and defined charges for 2011–2012. One change that I believe will enhance and use the talents of members most effectively is the upcoming call for annual conference session proposals. We are adopting a new method used by other organizations for developing programming that draws on member requests for education while ensuring continued high-level sessions.

The establishment of the HOPA Foundation will also help expand the evidence that aids practice, and I look forward to watching the foundation grow and member research efforts expand under the leadership of Susan Goodin.

With these exciting developments, I look forward to serving as your president for the upcoming year.

2010–2011 Committee Year-End Reports

Back row (from left): Julianna Merten, Sarah Scarpace, Ryan Bookout

*Front row (from left): Debbie Bramble, Amy Pick**

BCOP Recertification Committee

Julianna Merten, Chair
Ryan Bookout, Vice Chair

The 2010–2011 BCOP Recertification Committee has accomplished the charges of developing and reviewing the presentations developed for the Oncology Pharmacy Specialty Sessions approved by the Board of Pharmaceutical Specialties. This programming provides 6 hours of continuing education via live programming for BCOP recertification at the 2011 HOPA Annual Conference in Salt Lake City, UT, the 2011 American College of Clinical Pharmacology (ACCP) Annual Meeting in Pittsburgh, PA, and the 2011 American Society of Health System Pharmacists Midyear Clinical Meeting in New Orleans, LA. The BCOP recertification exam has been developed, field tested, and made available to members who attended the sessions at the 2011 HOPA Annual Conference via an online link. A postpresentation analysis of the Oncology Pharmacy Specialty Sessions is underway. A report of who attended and received BCOP recertification credit for the 2010 Oncology Pharmacy Specialty Sessions has been submitted to ACCP for submission to the Board of Pharmaceutical Specialties.

*Not pictured in photo: Dlanne Brundage, Sara Butler, Isabel Chong, Susan Gordon-Bullington, Cyrine Haidar, Emilly Mackler, Amy Seung, Steve Striker

CE Accreditation Committee

LeAnne Kennedy, Chair
Janet Espirito, Vice Chair

The CE Accreditation Committee's charges for this year included reviewing all continuing professional education (CPE) activities and training the BCOP Committee to review BCOP topics. All presentations were reviewed by both the CE Committee and either the BCOP or Program Committees.

During the remainder of the year, the CE Accreditation Committee will work on transitioning from LeAnne Kennedy as CPE administrator to HOPA staff. By August HOPA's annual report will be submitted to the Accreditation Council for Pharmacy Education (ACPE); the report will include the total hours of CPE awarded to HOPA members during the past year. Another project slated for this year will involve transitioning to online CPE submission for pharmacists so that the hours will be communicated between providers, ACPE, and the National Association of Boards of Pharmacy.

Back row (from left): Anthony Jarkowski, Stephanie Taber-Minich, Laura Wiggins, Lisa Zambito

*Front row (from left): Helen Marshall, Susannah Koontz**

Education Committee

Susannah Koontz, Chair
Helen Marshall, Vice Chair

The Education Committee had a busy and productive year. Our group's most noticeable accomplishment was ensuring a robust offering of educational activities for HOPA members on HOPA U. Following the conclusion of the 2010 Annual Conference in New Orleans, selected presentations were posted onto HOPA U as part of a virtual meeting for members unable to attend the conference in person. A mix of lectures and symposia (five available for CPE and seven designated as non-CPE) were posted, including the conference keynote address on healthcare reform, as well as the six presentations (with CPE credit available) from the popular preconference Oncology Boot Camp. In addition, HOPA U is now offering two new presentations (both for CPE) covering drug targets/cell signaling pathways and cardiotoxicity from chemotherapy, as well as an encore presentation of the HOTopics lecture from February discussing new chemotherapy agents for the treatment of metastatic breast cancer and hormone-resistant prostate cancer (this activity is not available for CPE credit).

Other initiatives, all started by prior members of the Education Committee, are close to completion or remain underway. A resource list for pharmacy trainees and practitioners new to the field of oncology is nearly finalized.

*Not pictured in photo: David Gregornik, Daniel Sageser, Geoff Saunders, Marc Takemoto, Katherine Tipton, Angela Urmanski, Michael Vozniak, Mallika Weant, Poppy Wilson

Oncology Boot Camp 2012

Program content for the next Oncology Boot Camp, which is expected to occur during the 2012 Annual Conference in Orlando, has been identified and currently is being refined. Development of regimen-specific patient education sheets has evolved during the past year. Although approximately six sheets have been drafted along with standard toxicity language (which itself has undergone an internal validation process), this project is currently on hold until additional resources can be identified to help further development. The Best Practices Program, developed early in the year, was projected to be part of the program for the 2012 Annual Conference; however, the direction of this initiative was re-evaluated after the new strategic plan was introduced. HOPA leadership determined that the program will no longer appear in its previous form.

Finally, all of the work above could not have been completed without the outstanding work of Helen Marshall (vice chair), Michael Vozniak (board liaison), Lori Goodnow (education director), and the members of the committee: David Gregornick, Anthony Jarkowski, Stephanie Minich, Daniel Sageser, Geoff Saunders, Marc Takemoto, Katie Tipton, Angela Urmanski, Mallika Weant, Laura Wiggins, Poppy Wilson, and Lisa Zambito. Each person provided invaluable practice experience and sustained contribution on each project throughout the year. It was a great privilege to collaborate with this group of professionals to advance the educational mission of HOPA.

Finance Committee

Antoinette Lavino, Chair
Caren Hughes, Vice Chair

Greetings, HOPA membership. The Finance Committee worked diligently this year to tackle an ambitious agenda set forth by the board and our treasurer, Vivian Park. In collaboration with the Membership and Planning Committees, we restructured membership and annual conference registration fees. Implementing the strategic pricing structure increased the percentage of annual conference attendees who are HOPA members by 24%. With the assistance of AMC staff and through a rigorous process, the committee selected an independent auditor to ensure HOPA complies with federal and state regulatory requirements. During our final meeting, the committee voted to recommend hiring a financial advisor to help HOPA move forward with their strategic plan of growth and financial stability.

As chair of the committee, I would like to thank Vice Chair Caren Hughes and our members—Casey Williams, Chrisine Gegeckas, Peggy Wimmer, Mike Edwards, Colleen Westendorf, and Kristin Hehr—for all of their hard work. Many thanks to Vivian Park for her leadership and guidance and to the board for allowing us to participate in HOPA.

Legislative Affairs Committee

Scott Savage, Chair
Ali McBride, Vice Chair

The Legislative Affairs Committee has been very busy working on several new agenda items during the past year. This year drug shortages have affected almost every hospital, infusion center, and retail pharmacy. In fact, the issue has become a national crisis, leaving many pharmacy shelves empty of numerous medications, oftentimes with little notification from suppliers or manufacturers. In conjunction with numerous stakeholders from the American Society of Health System Pharmacists, the Committee has taken an active role in convening a drug shortage summit. Working with other organizations and stakeholders, HOPA highlighted the urgent issues surrounding oncology drug shortages, which have increased in incidence during the past 5 years. Drug shortages in the oncology sector are critical because these medications often lack equivalent drugs that can be substituted for various front-line regimens. HOPA members have been hampered by the lack of

drugs used to treat their patients, with numerous infusion centers and community hospitals not being able to acquire an adequate drug supply. The Legislative Affairs Committee will continue to update HOPA members on this issue; unfortunately, it seems it will continue to be a priority topic for many years to come.

The Legislative Affairs Committee is also working on several issues related to oral chemotherapy. There has been growing concern regarding safe practices and financial consideration for oral chemotherapy use. The Committee plans to evaluate and identify issues for the proper administration of oral chemotherapy. The Committee is also looking at issues related to patient care and the financial challenges of oral chemotherapy.

The Committee is considering efforts related to risk evaluation and mitigation strategies, medication therapy management, and the healthcare reform bill. The Legislative Affairs Committee will continue to update HOPA members on issues affecting oncology practice and support them in their professional practice.

Back row (from left): Sarah Hopps, Meredith Moorman, Jennifer LaFollette

*Front row (from left): Ashley Greene, Karen Smethers**

Membership Committee

Karen Smethers, Chair
Meredith Toma Moorman, Vice Chair

This has been a productive year for the Membership Committee. A Membership Dashboard was created to help track the number of HOPA members, membership growth, and members' practice locations and areas of expertise. We are pleased to report membership grew by 9% during the past 12 months to a record 1,828 members—200 of which were students, residents, or fellows.

With this significant increase in members, the demand for travel assistance to the annual conference has grown. In response, the Membership Committee successfully increased the number of travel grants offered by 50% to a total of 40. The application and review process for the travel grant program was also updated, supporting a rigorous and comprehensive scoring review. We are pleased that so many members participated in this travel grant process and were able to attend the HOPA Annual Conference as a result.

Thank you to all who participated in the member photo-loop program before and during the annual conference. It was great to see many of the new faces among our membership.

New Recruit a Colleague Program

To encourage additional membership growth, the Membership Committee updated the Recruit-a-Colleague Program, which is supported by our new rolling membership cycle. For every member recruited, the referring member receives the following rewards:

1. one free month of membership added to existing membership
2. one entry into a drawing to win one of the following three prizes:
   - complimentary registration to the 2012 Annual Conference in Orlando, FL (complimentary registration cannot be transferred to another member or substituted for another year)
   - a travel grant for $250 to the 2012 Annual Conference in Orlando, FL (travel grant cannot be transferred to another member and is distributed in Orlando at the 2012 Annual Conference)
   - one free year of HOPA membership.

If you know a colleague who is not a member, encourage him or her to participate in HOPA's educational and networking opportunities, support greater recognition of the oncology pharmacy profession, and strengthen the HOPA community by becoming a member.

The Membership Committee looks forward to continuing to foster the growth of our organization next year. Thank you for allowing us to serve you.

*Not pictured in photo: Cindy O'Bryant, Katharine Kinsman, Evelina Macuileviciute, Justin Marx, Sarah Scarpace, Lisa Thompson, Brandon Vakiner, Kristopher Zepeda

Nominations and Awards Committee

Karen Fancher, Chair
Laura Jung, Vice Chair

The Nominations and Awards Committee is wrapping up another successful year! In the fall we solicited nominations for four membership awards and had the difficult task of choosing the winners from an extremely talented group of candidates. Please join us in congratulating the 2011 HOPA Award Winners:

- Basic Science & Clinical Research Literature Award: Jacob Kettle, PharmD
- Technician of the Year: Tanja Monroe, CPhT
- New Practitioner: Trevor McKibbin, PharmD MBA BCPS
- Award of Excellence: Jim Koeller, MS.

This spring we turned our attention to setting the slate for the board of directors election. We had a record number of nominations and once again faced the difficult task of choosing from an exceptional group of candidates. Membership voting was completed in February 2011. We are very pleased to announce the newest members of our HOPA Board of Directors:

- President Elect: Lisa Holle, PharmD BCOP
- Secretary: Kellie Jones, PharmD BCOP
- Members-at-Large: Susannah Koontz, PharmD BCOP; Stephanie Dixon Sutphin, PharmD BCOP.

A big thank you to all of the members of our committee for their hard work and diligence this year. It has been an honor to serve HOPA with you!

Professional Affairs Committee

Dan Zlott, Chair
Marjory Curry, Vice Chair

The following are some of the Professional Affairs Committee's achievements from the past year.

HOPA Booth

The HOPA booth was successfully exhibited at the American Society of Health System Pharmacists Midyear Meeting

and the HOPA Annual Conference. The HOPA booth enjoyed higher than expected traffic during the exhibition. Approximately 200 HOPA membership brochures were handed out during the exhibition. Based on estimates provided by the booth volunteers, approximately 30%–40% of those who stopped by the booth were students, 10%–20% were PGY1 or PGY2 residents, and the remainder were pharmacists. In addition, several vendors approached the booth and expressed interest in potentially exhibiting during HOPA's Annual Conference. Booth volunteers also approached other vendors who might be interested in exhibiting during HOPA's Annual Conference. Oversight of the booth will be transitioned to the Membership Committee.

American Pharmacists Association Collaboration

The Professional Affairs Committee worked with the HOPA Board, AMC staff, and the American Pharmacists Association (APhA) to cosponsor an oncology session at the APhA Annual Meeting in March 2011. The session, "The Role of the Community Pharmacist in Caring for Patients with Cancer," was very well received and attended.

In addition, the Professional Affairs Committee met with the National Executive Committee (NEC) of the APhA Academy of Student Pharmacists (ASP) in early January to explore opportunities for partnership. APhA-ASP currently has more than 32,000 student pharmacist members, making it the largest student pharmacy organization in the world. Specifically, the APhA-ASP NEC was interested in creating a national oncology pharmacy mentor list for students interested in pursuing a career in oncology. If this project is successful, other opportunities for collaboration may emerge. The APhA-ASP NEC has since expressed continued interest to the committee in pursuing this partnership, and is hoping to work out some of the logistical details so the project can go live. Through this potential partnership, the Professional Affairs Committee hopes to increase awareness of HOPA's purpose and mission within the pharmacy profession and increase awareness of oncology as a career option within pharmacy.

HOPA Traineeship

The committee has formed a working group to generate a proposal for a scholarship program, tentatively called the "Diversity Initiative for Pharmacy Students pursuing Careers in Oncology." The Committee has finalized its recommendations and will send the proposal to the board for consideration as the final activity before the Professional Affairs Committee is dissolved.

Thank you to all committee members for their hard work, ideas, and discussion—all of which contributed to the work and success of the Professional Affairs Committee.

Program Committee

Lauren Decloe, Chair
Jill Rhodes, Vice Chair

The Program Committee is pleased to complete a busy and successful year! The main charge of the committee was to plan the 2011 conference in Salt Lake City, which included the development of the general programming and breakout sessions. This was accomplished through scheduling and coordinating the calendar of events, selecting session content and identifying speakers, and completing individual

Introducing HOPA's New Colleague Recruitment Program

HOPA members can earn an additional 1-month extension on their membership year for each member they recruit. In addition, participants will receive one entry into a drawing for additional prizes. Visit the Membership section of the HOPA website for complete details.

slide reviews in conjunction with the CE Committee. The Program Committee also worked with medical education companies to identify symposia topics and secure funding from our industry partners.

Another area of focus was to update the annual conference speaker evaluations. The changes were intended to contribute to the creation of a standardized approach to speaker selection and evaluation and to fulfill the long-term goal of developing a comprehensive database of potential speakers. The committee also created a proposal to support the inclusion of the first annual international speaker exchange at the annual conference.

Back row (from left): Marc Earl, Violette Ajiboye, Lauren Decloe, Larry Buie

*Front row (from left): Jill Rhodes, Cyrine Haidar, Mahsa Sharifi**

Additional accomplishments for the year included the first HOPA virtual meeting. The Program Committee worked in conjunction with the Education Committee to select 8 hours of programming from the 2011 conference. These sessions were made available at no charge to HOPA members on HOPA U and included 1 hour of available CE credit.

The committee leadership would like to recognize the members of the committee and thank them for their participation during the past year. It was the direct result of their hard work and dedication that led to a successful annual conference!

*Not pictured in photo: Nelly Adel, Gayle Blouin, Leigh Boehmer, Patrick Boyle, Heidi Gunderson, Andy Kurtzweil, Peter Schlickman, Jamie Shapiro, Sarah Gressett-Ussery, Jennifer Ziegler

Publications Committee

Brooke Bernhardt, Chair
Stacy Shord, Vice Chair

The Publications Committee has been busy throughout the year. The following are some of our major accomplishments from this year.

1. The completion of five issues of *HOPA News*. We hope you enjoyed each issue and are excited about potential changes to future editions of *HOPA News*.
2. The completion of two HOTopics Webinars. The first Webinar involved taking a closer look at pharmacogenomics; the second featured information on eribulin and cabazitaxel. During the past 2–3 years, this committee helped take the idea of HOTopics from concept to reality and we are pleased with the progress. Standard operating procedures were created along with templates for speaker invitation letters, speaker agreements, and follow-up surveys.
3. The creation and results presentation of the Listserv survey. Many of you participated in this survey; the results are presented in this issue of the *HOPA News*.
4. The establishment of the FDA News Blasts through the HOPA member update via e-mail. We hope you are enjoying this new feature!

The 2010–2011 Publications Committee included the following members: Brooke Bernhardt (chair), Stacy Shord (vice chair), Niesha Griffith (board liaison), Amelia Chan, Russell Crawford, Anne DeLisa, Erika Gallagher, Kelly Gregory, Jim Hart, Paul Hoffman, Suwicha Limvorasak, Man-Yee Merl, Kerry Parsons, Adam Peele, Lisa Savage, and Brandy Strickland. Elizabeth Sherman and Rachel Frank served as our AMC liaisons and were a huge asset. We hope to see great things from the 2011–2012 Publications Committee and wish them the best in their endeavors.

Research Committee

David Frame, Chair
Kellie Jones, Vice Chair

Each year the Research Committee is given the task of soliciting grant proposals from HOPA members and rewarding up to $50,000 for an outstanding project. In addition, part of the emphasis of this grant is to reward young clinicians and help develop their talents. We were very pleased to have received many letters of intent for some very good, thought-provoking research. We are pleased to announce that the 2011 Research Grant was awarded in the amount of $50,000 to Patrick Kiel, PharmD BCPS BCOP, clinical pharmacy specialist from the Indiana University Simon Cancer Center, for his proposal, "To Assess the Efficacy and Synergy of a PARP1 Inhibitor with Cisplatin." We offer him our sincere congratulations. This type of research emphasizes the possibilities for pharmacists to be on the front lines with investigational drugs and to help determine new and exciting areas in which these may make differences in patients' lives. We encourage you to start writing a letter of interest now for next year's grant because they will be due before you know it.

Each year the Research Committee is also given the task of soliciting abstract submissions for completed research to be presented at the HOPA Annual Conference. This year 29 abstracts were accepted for presentation and publication in the *Journal of Oncology Pharmacy Practice*. The top four abstracts were selected to be presented as oral platform presentations at the Annual Conference in Salt Lake City. These following four presentations demonstrated the value pharmacists add to many aspects of pharmaceutical care:

- Anthony Jarkowski, PharmD BCOP, "Aprepitant Does Not Increase the Risk of Neurotoxicity with Ifosafamide-Based Chemotherapy"
- Pragna Patel, PharmD, "Medication Therapy Management Clinic: A Collaborative Approach to Medication Safety at Montefiore Medical Center Ambulatory Oncology Clinic"
- R. Donald Harvey, III, PharmD BCPS BCOP, "Renal Function Does Not Predict Lenalidomide-Induced Hematologic Toxicity in Patients with Relapsed and/or Refractory Multiple Myeloma"
- Justin M. Balko, PhD PharmD, "Short-Term Presurgical Letrozole Treatment to Identify Biomarkers of Resistance to Antiestrogens in ER+ Breast Cancer."

The remaining posters were judged by a volunteer panel of judges, and two top honors were selected.

- Casey Williams, PharmD BCOP, "Preliminary Phase I Results of Decitabine Plus Midostaurin (PKC412) for Elderly (Age ≥ 60) Newly Diagnosed or Relapsed/Refractory Adult Patients with Acute Myeloid Leukemia"

- Michael Berger, PharmD BCOP, "An Abbreviated Premedication Regimen Prior to Paclitaxel-Based Chemotherapy for the Treatment of Breast Cancer"

We were thrilled with the number and quality of posters, and we would love to see this number increase by at least 50% for next year's conference. Help us show off the talents of HOPA and submit your research for presentation at next year's conference.

HOPA is now also proud to be the primary meeting for the presentation of oncology fellows' and residents' projects. More than 70 trainee "Research in Progress" posters were evaluated during the meeting by another devoted group of volunteers who provided feedback to each of the presenters, not only on the content of their posters but also on their presentation skills. We hope that this becomes a platform to meet other residents and form collaborations with colleagues that will continue throughout careers.

This year, the Research Committee was also very proud to develop the annual preconference workshop during which Val Adams, PharmD BCOP, and LeAnne Kennedy, PharmD BCOP, presented "Accomplishing Meaningful Research in 1 Year" to a packed house of more than 240 people. Both young and experienced clinicians and many trainees engaged in a discussion about the different types of research and shared ideas about how to help each other in future endeavors.

The Research Committee also worked on ways to help foster an increased spirit of cooperation among our group's members by developing more methods to enhance research collaborations between institutions. Ideas such as developing resident collaborative projects to forming collaborative outcomes clinics were discussed by the committee. The transplant section is currently working on a list of ideas to help centers collaborate on answering common questions surrounding transplant issues. This important endeavor showcases the incredible talent of our HOPA members as well as the passion for their patients. We feel that the new HOPA Research Foundation will allow more of these projects to come to fruition in the near future.

The Research Committee wishes to thank its members and the additional reviewers, judges, and evaluators who made these programs possible this year.

Standards Committee

Myke Green, Chair
Jamie Poust, Vice Chair

HOPA's 2011 Annual Conference marks the end of the Standards Committee's second year of existence. It also marks the beginning of a new chapter for the Standards Committee. The new strategic plan places great importance on creating standards because they serve as a foundation for HOPA as an organization.

This year our work focused on laying the groundwork for the future. Through numerous conference calls, the Standards Committee created a standard operating procedure for creating and maintaining evidence-based guidelines. In the future, these guidelines will reinforce HOPA's reputation as the source for practice standards for support roles and responsibilities of hematology/oncology pharmacists across the cancer continuum. We also worked on establishing standards for handling, dispensing, and storing investigational drugs.

On behalf of Myke Green (chair) and Jamie Poust (vice chair), we wish to acknowledge the members of the 2010–2011 HOPA Standards Committee: Moe Schwartz (board liaison), Mary Beth Benner (staff liason), Matthew Christianson, Mandy Gatesman, Eileen Herbeck, Kathy Hogan, Alex Kappelman, Lindsay Kaster, Diana Kostoff, Lise Langston, Andrea Ledford, Theresa Mays, Michael Newton, Kelly Rio, Jim Schwartz, and Peter Tortorice. Without the help and support of all of these members, the work could not have been successfully accomplished.

Introducing Your HOPA Team

HOPA's transition to Association Management Center (AMC) has been an exciting and important time in our organization's growth. We thought it would be helpful to introduce some of the people who have been instrumental in this transition and will be responsible for HOPA's day-to-day business and supporting our members as we move forward. During the next few issues of the newsletter, you will meet the enthusiastic and dedicated staff members who make up your HOPA team.

Elizabeth Sherman, Senior Marketing Manager

Q. What is your role with HOPA? What are some of the specific things you do on a daily basis for the association?

A. My role within HOPA is to promote and market HOPA and its membership benefits, events, and goals. I am the staff liaison for the Membership and Publications Committees, and I manage the HOPA website; lead membership recruitment, retention activities, and communications; and promote HOPA U and the annual conference.

Q. How long have you been involved in association work? With which other associations have you worked?

A. I have been working with associations for the past 5 years. Prior to joining AMC, I worked for the Association of Legal Administrators (ALA). My focus was working with their regional leadership to promote six regional conferences and three specialty conferences, as well as managing the marketing of ALA's other services and resources. I joined AMC in 2009 as a senior marketing manager. I also work with the Association of Rehabilitation Nurses and the Association of Pediatric Hematology/Oncology Nurses.

Q. How did you get your start working with associations?

A. I found it by chance. I have always worked in the non-profit sector. I was a communications specialist at the John D. and Catherine T. MacArthur Foundation for more than 7 years. Commuting to downtown Chicago became too time consuming, so I left to start my own communications firm, run out of my home office. It gave me the flexibility to be home with my kids, and yet also earn an income and maintain my career. However, I found that after a while, more time was spent on business development and less on what I enjoyed most: developing promotional campaigns, writing, and creating collateral materials. I found a job as a marketing specialist at the ALA office just a few minutes from my home. I enjoyed working with the members very much and got hooked!

Q. Where did you grow up?

A. I moved around a bit as a child. For the first 14 years of my life I lived in Southern and Northern California. When I was a sophomore in high school, my family moved to the Midwest and I attended boarding school at Lake Forest Academy in Illinois. I attended the University of Wisconsin–Madison and triple majored in history, English, and history of culture. Go Badgers!

Q. What is your favorite thing to do in your spare time?

A. My favorite things to do in my spare time are hanging with my family, enjoying my children, and vacationing anywhere warm (especially Montana in the summer to visit my father). I absolutely love to read—can't get enough.

Q. What is your favorite aspect of working with associations and members?

A. I think the best part of my work is the members themselves and just being in their world. I have the privilege of working for incredible people doing incredible things that make the world a better place. I so enjoy helping them meet their goals, getting the word out about what they do, and promoting educational opportunities. I hope that in some small way I am helping to advance the work they do.

Q. What aspect of working with HOPA is most exciting for you? What are you looking forward to accomplishing this year with HOPA?

A. The most exciting aspect of working with HOPA is that I feel like I can make a real contribution to their membership marketing and communications activities. Because it is such a young organization, I am thrilled to help HOPA create its collateral materials, expand and improve their website, and work with the Publications Committee to make *HOPA News* even more informative and accessible to our members. This year we will focus on recruitment efforts, HOPA U and annual conference promotions, *HOPA News* improvements, and making sure our members are aware of the programs and benefits of HOPA.

Lori Goodnow, Director of Education

Q. What is your role with HOPA? What are some of the specific things you do on a daily basis for the association?
A. My role mainly involves helping to develop and implement HOPA's annual conference education and enduring materials. I support several of HOPA's committees as they develop education for the conference or HOPA U.

Q. How long have you been involved in association work? With which other associations have you worked?
A. My first association job was in 1988 as registrar for the American Public Works Association. After that, I managed membership and education for a small association management company. I then worked at the Academy of General Dentistry for 14 years—first as education director, then as vice president of education and meetings. I currently also support the Association of Rehabilitation Nurses as their director of education.

Q. How did you get your start working with associations?
A. I had been an assistant registrar at a private university in Austin, TX. Upon returning to Chicago, I found a job doing registration for an association—a market that, up until then, I had not realized existed.

Q. Where did you grow up?
A. I grew up in Evanston, IL, with five brothers and sisters. I received my BA in anthropology at DePaul University.

Q. What is your favorite thing to do in your spare time?
A. I like to go antiquing and enjoy art fairs in the summer months. I love to go to concerts and plays and anything in which my kids are performing. My daughter is a singer and my son is an actor, so there have always been a lot of performances. As I live only a stone's throw from Lake Michigan, I spend time walking on the beach with my beagle, Buddy.

Q. What is your favorite aspect of working with associations and members?
A. I like knowing that the job we do supporting our members helps them be better at their jobs; in healthcare associations that makes a difference in many lives.

Q. What aspect of working with HOPA is most exciting for you? What are you looking forward to accomplishing this year with HOPA?
A. I am excited about the changes HOPA is undergoing as a result of the strategic plan. The organization is only 8 years old. HOPA has begun to reshape the charges of the committees. The changes to that structure will place HOPA on a path of growth as they mature as an organization. This year, we will be moving to a call for presentations for the first time, which signals a big change for how we develop the conference program.

HOPA UNIVERSITY

The Science of Education

New on HOPA U

- Myelodysplastic Syndromes: The Evolving Treatment Landscape
- Update on Drug Targets and Cell Signaling Pathways

Visit www.HOPAU.org for links to the courses and their descriptions.

HOPA University is the site for educational courses, activities, and information supporting oncology and hematology pharmacists.