Clinical Research

Older AML Patients May Benefit From Treosulfan-Based Conditioning

According to a study published in *Biology of Blood and Marrow Transplantation*, outcomes after stem cell transplantation are similar after various conditioning regimens, but treosulfan-based conditioning is safe and effective for older adults with acute myeloid leukemia and results in lower rates of graft-versus-host disease. The study, conducted on behalf of the Acute Leukemia Working Party of the European Society for Blood and Marrow Transplantation, compared outcomes after fludarabine with either intravenous busulfan at a myeloablative dose or a reduced dose or treosulfan at 42 g/m² or 36 g/m². The study included nearly 3,300 patients with a median age ranging from 48 to 60 years old. Outcomes were similar among the groups with two-year overall survival ranging from 51% to 58%, relapse ranging from 30% to 40% and non-relapse mortality ranging from 16% to 21%. Worse outcomes were more common for older patients with advanced disease. Among the researchers’ conclusions, survival is determined mostly by disease biology, but older patients may benefit from treosulfan-based conditioning because of lower rates of GVHD and possibly better outcomes in patients with active leukemia. Read More

AAT Treats Steroid-Resistant Acute GVHD

A naturally abundant serine protease inhibitor, α₁-antitrypsin (AAT), safely and effectively treats acute graft-versus-host disease (GVHD) resistant to corticosteroids, according to results of a clinical trial appearing in *Blood*. For the study, researchers intravenously administered AAT twice a week for four weeks to 40 patients. They noted that the treatment was tolerated without any adverse events and that serum levels of ATT increased significantly. At the end of treatment, the overall response rate was 65% and the complete or partial response rate was 35%. Responses occurred in all target organs and were sustained in 73% of patients at day 60. Mortality Continues on page 2
impressed with both teams’ cooperation, insight and experience in the event-planning process. We have partnered with the CIBMTR team for many years now on the event and very much appreciate their partnership in this process. As we continue to work with our new ASBMT team, we look forward to adding their knowledge, skills and expertise into the mix as we develop the content and programming for next year’s TCT Meetings. There is still much more information to come on the TCT Meetings, but I can assure you that based on our recent talks, this will be the best one yet. Mark your calendars for February 2019, and I hope to see you all in Houston.

In our immediate future, we will have the Annual ASBMT Fall Clinical Education Conference, September 20-22 in Nashville, for

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A WORD FROM PRESIDENT JOHN F. DIPIEROSIO, M.D., PH.D.

NPs, PAs and Fellows. We’re finalizing the programming for that event in the coming weeks and registration will be open very soon for the event. This year’s programming will include clinical care advances, important insights from February’s Tandem Meetings and a half-day of pediatric BMT lectures. We welcome you to join the ASBMT audience and thought-leaders in Nashville this fall for the event.

Some other new developments are outside of ASBMT, including the recently released Centers for Medicare and Medicaid Services Inpatient Prospective Payment System Proposed Rule. In this issue of ASBMT eNews, our director of health policy and strategic relations, Stephanie Farnia, gives an overview of what the ASBMT audience needs to know in the proposed rule and how to provide feedback and commentary on the update in the allotted time.

I hope you’ll all take a moment to step outside and enjoy the nice weather at this time of year. In our occupations, I know we are always pressed for time — there just never seems to be enough of it — but I do encourage you to take a walk in the middle of the day, get to your child’s soccer practice a little early to watch them run around and just enjoy the outdoors. We’ve certainly been waiting for it.

John F. DiPersio, M.D., Ph.D.
President of ASBMT

ASSOCIATION NEWS

4th International Workshop on Biology, Prevention and Treatment of Relapse after Hematopoietic Stem Cell Transplantation

Register today for the 4th International Workshop on Biology, Prevention and Treatment of Relapse after HSCT. Relapse and disease progression are the leading causes of treatment failure for most hematologic malignancies treated with both allogeneic and autologous hematopoietic stem cell transplantation (HSCT). The planned objectives of the workshop are designed to present the latest scientific and clinical advances related to relapse after HSCT and to provide a forum for the presentation of ongoing laboratory, translational and clinical research specifically related to this field. The educational content of this conference is relevant for medical and pediatric hematologists-oncologists, hematopoietic stem and immune cell translational and basic scientists, hematopathologists, physicians-in-training (Fellows/Residents/Post Docs), advance practice providers, pharmacists, oncology nurses and other associated allied health professionals. The workshop will feature internationally recognized speakers from a multidisciplinary, diverse group composed of basic and translational scientists and clinical investigators.

The Organizing Committee has been working hard to make the Fourth International Workshop a truly valuable experience for all.

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**ASSOCIATION NEWS**

**4th International Workshop in Biology, Prevention and Treatment of Relapse after Hematopoietic Stem Cell Transplantation**

participants. We look forward to welcoming you to the beautiful city of Chicago.

**Event Details**
Where: Intercontinental Magnificent Mile, Chicago
When: September 21-22

**Meet the ASBMT Team**

**Kelsey Redman, ASBMT Operations Associate**

Kelsey Redman works on our operations team and is likely the first person you’ll speak to when calling the ASBMT main office. Her role focuses on membership support, helping members navigate the website, answering questions via email and supporting the volunteer leadership team.

Kelsey is a graduate of the University of Wisconsin-Madison, where she studied community and nonprofit leadership, with an additional focus in business.

“As I’ve learned more about ASBMT, I’ve been excited about the opportunity to be involved with an association and members that are working on important initiatives such as CAR-T therapy and blood and marrow transplantation as a whole. ASBMT provides valuable resources for its members to be successful, and we have a great team of people who are really passionate about this work, which keeps me motivated and excited to be a part of this organization.” – Kelsey Redman, ASBMT Operations Associate

**Anna Hawkshead, ASBMT Education Associate**

Anna Hawkshead may be the second person you hear from if you call the ASBMT office. Her role focuses primarily on supporting education initiatives such as the Clinical Research Training Conference and the Clinical Education Conference. She also works closely with our manager of education to support the education committee’s various initiatives and offerings. Anna majored in communications and international studies at Iowa State University.

“I’m excited to be working on ASBMT because it is an innovative group of individuals who continue to make a difference in the healthcare field and the lives of others.” – Anna Hawkshead, ASBMT Education Associate

View the full staff listing and contact information on the [ASBMT website](http://www.asbmt.org).

**Call for Abstracts**

Relapse After HSCT 2018 is calling for abstracts on all topics related to relapse after HSCT.

Abstract deadline is July 1, and the best abstracts will be chosen for oral presentations.
May ASBMT Self-Directed Learning Quiz

On behalf of the ASBMT Committee on Education, we are pleased to continue our monthly self-directed learning quiz "Basic Principles and Practices of Hematopoietic Cell Transplantation and Cell Therapy – Question and Answer Approach” for fellows in training, highlighting HCT and cell therapy topics. Answers to each question appear with evidence-based “non-exhaustive peer-review commentary. Our aim is to provide you with a credible and freely available educational resource. Questions were generated and reviewed by Syed Abutalib, M.D., Mark R. Litzow, M.D., and William A. Wood, M.D. To take this month’s quiz, click here.

The Annual ASBMT Fall Clinical Education Conference for NPs, PAs and Fellows

Please join us for a multi-day conference for NPs, PAs, fellows and junior faculty focused on the care of blood and marrow transplantation patients. A few highlights in this year’s agenda include clinical care advancements, a “Best of Tandem” review and a half-day of pediatric BMT lectures. This conference will be held in conjunction with Sarah Cannon Blood Cancer Network and the National Marrow Donor Program (NMDP)/Be the Match.

When: September 20-22, 2018
Where: Omni Nashville Hotel, Nashville, Tennessee

Interested in Sponsoring or Exhibiting?
If you are interested in becoming a sponsor or an exhibitor for this conference please email Angie Dahl at angiedahl@asbmt.org.

ASBMT will send a dedicated communication to register for the event once the registration page is live. Please check the ASBMT website for the latest details on the event in the coming weeks and look out for an email in your inbox.

Course Description
This 2.5-day program will provide clinical education for professionals caring for blood and marrow transplant patients. At the end of the course, attendees will leave with a comprehensive syllabus, a self-assessment, and a deeper understanding of the diagnostic evaluation and therapeutic treatments for acute and chronic complications of blood and marrow transplantation.

Learning Objectives
Upon completion of this activity, attendees should be able to:
• Describe the diagnostic evaluation and therapeutic modalities available for common acute complications of post blood and marrow transplant patients.
• Describe the diagnostic evaluation and therapeutic modalities available for chronic complications of blood and marrow transplant patients.
• Integrate guideline-based treatments into clinical practice while personalizing care appropriately for the patient.
• Integrate new therapeutic and diagnostic approaches into clinical practice as appropriate.

Intended Audience
Nurse practitioners, physician assistants, fellows and other providers with a hematology/oncology focus who desire a review and update in current standards of care for transplant patients.
When I am crunched for time, I make lists. As the Centers for Medicare and Medicaid Services (CMS) Inpatient Prospective Payment System (IPPS) FY2019 Proposed Rule came out on April 24 and is chock-full of issues that impact our field, I am most definitely crunched for time — meaning that this month, we have a “listicle” update for the leadership of ASBMT. The proposed rule and what sections and specifics relate to HCT and CAR-T therapies.

To get the latest monthly literature summaries, go to the Pharmacy SIG page on the ASBMT website and look for the literature updates in the right-hand sidebar. We hope that you will enjoy reading them and if you have any comments, feel free to contact the Pharmacy SIG by emailing ASBMTPharmacySIG@gmail.com.

Immune effector cell therapy is a new, rapidly growing, and changing field. Educational initiatives are lagging as the field continues to evolve. The CAR-T (chimeric antigen receptor T-cell therapy) Working Group is an ongoing educational initiative to create a comprehensive resource library of CAR-T therapy developed by working group members. The working group members participate in two live meetings per year to review and discuss new research, trials, and areas of education to focus on; these updates are agreed upon by the working group and incorporated into a version of the slide library.

The slide-deck library was recently added to the ASBMT website for ASBMT members to use as a resource on CAR-T therapy. The slides include information on why CAR-T therapy should be employed in patient treatment, how CAR-T therapy fits into the world of immune-oncology, clinical management of a CAR-T therapy patient, institutional considerations, CAR-T clinical development and much more. This resource is available to ASBMT members here on the ASBMT website.

Legislation & Regulation

Policy Perspective
By Stephanie Farnia, ASBMT Director of Health Policy and Strategic Relations

When I am crunched for time, I make lists. As the Centers for Medicare and Medicaid Services (CMS) Inpatient Prospective Payment System (IPPS) FY2019 Proposed Rule came out on April 24 and is chock-full of issues that impact our field, I am most definitely crunched for time — meaning that this month, we have a “listicle” update for you from the policy team at ASBMT.

Here are the primary items to know about the proposed rule and what sections and specifics relate to HCT and CAR-T therapies.

Logistics of the Medicare FY2019 IPPS Proposed Rule
1. Where you can read the rule:
   - The main file is “CMS-1694-P” and is

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Policy Perspective

- Approximately 1,800 pages long. Use the “Find” feature and search for keywords of interest. (Only the really fun-loving of us read the whole thing.)
- FY2019 Data Files – There are several files of interest in this set that I review each year. Table 5 reports the weighting proposed for the DRG and the mean length of stay (LOS), and Table 7A_7B provides the number of discharges and percentiles for LOS.
- FY2019 Proposed Rule Data Tables – Most of the data tables are very technical, but the data enthusiasts among you will enjoy the AOR/BOR file, which contains detailed information on the claims used for rate-setting. See if you can find the arithmetic mean for MS-DRG 014 (and $2.5 million maximum charge case) based on the rate-setting file.

2. Any proposals discussed in this rule are not considered final.
   - CMS will review comments after the close of the comment period.
   - A final rule will be issued sometime in late July/early August.
   - Provisions in the final rule go into effect on October 1, 2018.
   - Changes made to reimbursement practices will not be retroactive.

3. Comments are due by June 25 and can be submitted at www.regulations.gov (search for CMS-1694-P or go directly to this link). The staff at CMS read all submitted comments (yes, they really read every single one).
   - Your opinion matters (again, really). Share your concerns and ask for clarification if you have questions. Tell CMS about your work, your patients and your thoughts on the rule.
   - Talk to the government affairs or relations team at your center and ask for an opportunity to share your thoughts as they prepare your institutional letter.
   - File an individual comment letter even if your institution will be incorporating your comments into their formal document. You can reference talking points that will be distributed by ASBMT later in May or simply share the discussions happening at your program about Medicare reimbursement. If there is something in the proposal that you see as positive, please thank them for incorporating it. The staff at CMS are asked to make very difficult decisions, often with extremely limited time, resources and data.
   - Bonus activity: Print out your submitted comment, hang it on the fridge and bore your children or significant other by lauding your civic participation. It’s the IPPS equivalent of wearing an “I Voted” sticker.

What you need to know about the proposed rule:

HCT Provisions within the Medicare FY2019 IPPS Proposed Rule

1. CMS did not make any changes to the reimbursement structure for Allogeneic HCT, despite ongoing requests for separate payment for donor acquisition charges. It is important to let CMS know in your comments that the reimbursement for AlloHCT is still inadequate and that it is disappointing that the rule did not contain proposed changes. The NMDP/Be the Match continues to advance HR 4215, legislation that would require reimbursement for donor acquisition costs in addition to the MS-DRG payment. HR 4215 has many sponsors in the House, but very much needs a Senate champion. Contact me (sfarnia@asbmt.org) if your

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1. The program has a relationship with a congressional office that would like to help with this cause.

2. **Approximate proposed base payments for HCT for FY2019 can be calculated from the rule.** The approximate dollars per unit is $5,498, and the approximate base weights and estimated reimbursements are below. Center-specific payment varies based on a number of factors including location and academic teaching hospital status. Talk with your financial team if you want a more personalized number. These payment rates apply only to hospitals paid by the PPS system; DRG-exempt centers are reimbursed via the methodology outlined in the applicable legislation, per usual.

<table>
<thead>
<tr>
<th>MS-DRG</th>
<th>Weight</th>
<th>Per unit payment</th>
<th>Total Proposed Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>014 – AlloHCT</td>
<td>11.7843</td>
<td>$5,498</td>
<td>$64,790</td>
</tr>
<tr>
<td>016 – Auto w/ CC/MCC</td>
<td>6.5290</td>
<td>$5,498</td>
<td>$35,896</td>
</tr>
<tr>
<td>017 – Auto w/o CC/MCC</td>
<td>4.3917</td>
<td>$5,498</td>
<td>$24,145</td>
</tr>
</tbody>
</table>

CAR-T Provisions within the Medicare FY2019 IPPS Proposed Rule

1. **CMS proposed a significant number of changes to CAR-T coding and reimbursement.** These proposals reflect the requests made by ASBMT on behalf of our members. The types of changes CMS proposes are extremely rare and should (somewhat cautiously) be considered a very positive reflection of the collective advocacy by ASBMT members on this issue.

2. **CMS issued clarification that the ICD-10-PCS codes (XW033C3, XW043C3) can be used with both approved products when administered in the Inpatient setting.** See page 106 of the CMS-1694-P PDF file for detail.

3. **CMS responded to the applications for participation in the New Technology Add-on Payment program made by Novartis and Kile/Gilead for their CAR-T products.** The comments by CMS can generally be viewed as supportive. CMS is supposed to act as a gatekeeper of the NTAP funds by being stringent about qualification criteria, so they will always note ways in which technologies may fall short. The questions CMS has noted will be reviewed by the ASBMT Committee on Cellular Therapy and incorporated into the final comment letter. The NTAP payment, if awarded in the Final Rule, provides an additional and separate payment equivalent of up to 50 percent of the product cost in addition to the MS-DRG payment received for the episode of care. NTAP status has to be reestablished each Fiscal Year for each product and can only be awarded for a maximum of three Fiscal Years after approval. Discussion of this issue starts on page 400 of the CMS-1694-P main file.

4. **CMS is considering placing CAR-T in a specified MS-DRG so that providers know approximate reimbursement in advance.** This is a positive change from the current status of MS-DRG assignment based on whatever mix of codes is on the claim. Only claims that are correctly coded with the ICD-10-PCS code will drive to the specified MS-DRG. CMS is proposing assignment to MS-DRG 016 (AutoHCT w/ CC/MCC) OR to a new MS-DRG that has not yet been created. The ASBMT is vetting the potential options based on financial modeling and financial risk. More information will be issued in the next few weeks.

*Continues on page 9*
A new study appearing in *Biology of Blood and Marrow Transplantation* reports that PD-1, TIGIT and TIM-3 are highly coexpressed on MiHA-specific CD8+ T cells and that relapsed patients’ MiHA-specific CD8+ T cells show increased coexpression of PD-1, TIGIT and KLRG-1 compared to nonrelapsed patients. For the study, researchers used a 13-color flow cytometry panel to evaluate immune checkpoint expression profiles on T cell subsets and cytomegalovirus (CMV)- and/or MiHA-reactive CD8+ T cells of allogeneic stem cell transplantation patients. They discovered that MiHA-reactive CD8+ T cells exhibited an early differentiated CD27++/CD28++ phenotype with low KLRG-1 and CD57 expression. In addition, these T cells displayed increased expression of PD-1, TIM-3 and TIGIT compared with total effector memory T cells and CMV-specific CD8+ T cells in donors and allogeneic transplant patients. High coexpression of PD-1, TIGIT and KLRG-1 on MiHA-reactive CD8+ T cells was associated with relapse after allogeneic transplantation. These findings led researchers to conclude that MiHA-reactive CD8+ T cells of relapsed patients have a distinctive coinhibitory expression signature compared with patients who did not relapse, which may serve as a potential monitoring tool in patients. Read More

Legislation & Regulation

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5. CMS proposed assigning a Cost-to-Charge Ratio of 1.0 to be used when billing the cost of the product on your inpatient claims. This could be a very good thing, and we are vetting the particulars. Anything further I tell you on this matter will push out some very important piece of clinical knowledge that your patients need more than this, so just know we will get back to you with language for your comment letter. See page 1628 in the file for details.

6. Many stakeholders are paying very close attention to the proposed changes tied to CAR-T reimbursement. ASBMT is engaged with patient advocacy groups, our fellow professional societies, the manufacturers and other trade and specialty provider associations. Where it makes strategic sense to do so, we may sign on to joint/multi-stakeholder letters about specific proposals. The ASBMT will separately author a comprehensive letter reflecting the unique voice and concerns of the membership.

Finally, thanks to those who joined our first Coding and Reimbursement Town Hall. There will be more sessions to come as we aim to communicate key issues to you in a non-list format.

As always, find me at SFarnia@asbmt.org or @HCT_Policy.

Translational Science Studies

Relapsed Patients Have Increased Coexpression of PD-1, TIGIT and KLRG-1 on CD8+ T Cells

A new study appearing in *Biology of Blood and Marrow Transplantation* reports that PD-1, TIGIT and TIM-3 are highly coexpressed on MiHA-specific CD8+ T cells and that relapsed patients’ MiHA-specific CD8+ T cells show increased coexpression of PD-1, TIGIT and KLRG-1 compared to nonrelapsed patients. For the study, researchers used a 13-color flow cytometry panel to evaluate immune checkpoint expression profiles on T cell subsets and cytomegalovirus (CMV)- and/or MiHA-reactive CD8+ T cells of allogeneic stem cell transplantation patients. They discovered that MiHA-reactive CD8+ T cells exhibited an early differentiated CD27++/CD28++ phenotype with low KLRG-1 and CD57 expression. In addition, these T cells displayed increased expression of PD-1, TIM-3 and TIGIT compared with total effector memory T cells and CMV-specific CD8+ T cells in donors and allogeneic transplant patients. High coexpression of PD-1, TIGIT and KLRG-1 on MiHA-reactive CD8+ T cells was associated with relapse after allogeneic transplantation. These findings led researchers to conclude that MiHA-reactive CD8+ T cells of relapsed patients have a distinctive coinhibitory expression signature compared with patients who did not relapse, which may serve as a potential monitoring tool in patients. Read More
Targeting CCL9 in Mice Reverses Chronic GVHD

Researchers have discovered that circulating levels of murine CCL9 and human homolog CCL15 are higher during chronic graft-versus-host disease (GVHD) and that targeting CCL9 in vivo reverses murine chronic GVHD, according to a study published in Blood. Conducting whole serum proteomics analysis, the researchers discovered four upregulated proteins during chronic GVHD that can be targeted by genetic ablation or blocking antibodies, including the RAS and JUN kinase activator, CRKL, and CXCL7, CCL8 and CCL9 chemokines. Donor T cells without CRK/CRKL prevented chronic GVHD, germinal center reactions and macrophage infiltration seen with wild-type T cells. While antibody blockade of CCL8 or CXCL7 was ineffective in treating chronic GVHD, CCL9 blockade reversed chronic GVHD clinical manifestations, histopathological changes and immunopathological hallmarks. Elevated CCL9 expression was found mostly in vascular smooth muscle cells and uniquely present in mice with chronic GVHD. Plasma concentrations of CCL15, which is the human homolog of mouse CCL9, were high in a previously published study of 211 chronic GVHD patients. In another study of 792 patients, CCL15 measured at day +100 could not predict chronic GVHD occurring within the next three months. The researchers concluded that preclinical proteomics screening may be useful for identifying potential new targets for chronic GVHD, especially CCL15 as a diagnosis marker for chronic GVHD. Read More

VA-lip HSP47 Control Cutaneous Chronic GVHD

Vitamin A-coupled liposomes carrying heat shock protein 47 (VA-lip HSP47) control skin fibrosis in chronic graft-versus-host disease (GVHD) by targeting HSP47+ myofibroblasts without inducing immunosuppression, reports a study appearing in Blood. Researchers discovered massive fibrosis with elevated amounts of collagen deposits and accumulation of F4/80+ macrophages, as well myofibroblasts expressing HSP47 and retinol-binding protein 1 in the skin after allogeneic stem cell transplantation. Injections of anti-colony-stimulating factor receptor-blocking antibodies significantly reduced HSP47+ myofibroblasts in the skin. VA-lip HSP47 small interfering RNA (siRNA) delivered HSP47 siRNA to cells expressing vitamin A receptors and knocked down their HSP47 in vitro. VA-lip HSP47 was intravenously injected into fibrotic lesions, which did not affect collagen synthesis in healthy skin. In addition, VA-lip HSP47 knocked down HSP47 expression in myofibroblasts and reduced collagen deposits without inducing systemic immunosuppression. Researchers concluded that these study results highlight a cascade of fibrosis in chronic GVHD and that macrophage production of transforming growth factor β mediates fibroblast differentiation to HSP47+ myofibroblasts that produce collagen. Read More
### Calendar of Events

**May**
- **American Society of Gene and Cell Therapy**
  - Annual Meeting
  - May 16-19
  - Chicago, Illinois

- **Oncology Nursing Society**
  - 43rd Annual Congress
  - May 17-20
  - Washington, D.C.

- **International Society for Biological and Environmental Repositories**
  - Annual Meeting
  - May 20-24
  - Dallas, Texas

**June**
- **American Society of Clinical Oncology**
  - Annual Meeting
  - June 1-5
  - Chicago, Illinois

- **American Society of Transplant Surgeons**
  - American Transplant Congress
  - June 2-6
  - Seattle, Washington

- **Canadian Blood and Marrow Transplant Group**
  - Annual Conference
  - June 7-9
  - Ottawa, Canada

- **Federation of Clinical Immunology Societies**
  - Annual Meeting
  - June 14-17
  - Chicago, Illinois

- **European Hematology Association**
  - 23rd Congress
  - June 14-17
  - Stockholm, Sweden

**July**
- **International Society for Stem Cell Research**
  - Annual Meeting
  - June 20-23
  - Melbourne, Australia

- **Society for Cryobiology**
  - CRYO 2018
  - July 10-13
  - Madrid, Spain

**August**
- **Association of Physician Assistants in Oncology**
  - 21st Annual Conference
  - August 9-12
  - Chicago, Illinois

- **International Society for Experimental Hematology**
  - 47th Annual Scientific Meeting
  - August 23-26
  - Los Angeles, California

**September**
- **European School of Haematology**
  - 20th Annual John Goldman Conference on Chronic Myeloid Leukemia: Biology and Therapy
  - September 13-16
  - Miami, Florida

- **ASBMT**
  - Annual Fall Clinical Education Conference for NPs, PAs and Fellows
  - September 20-22
  - Nashville, Tennessee

- **National Comprehensive Cancer Network**
  - Annual Congress: Hematologic Malignancies
  - September 21-22
  - New York, New York

- **European School of Haematology**
  - 4th Annual International Conference on New Concepts in Lymphoid Malignancies
  - September 28-30
  - Saggart, Ireland

**October**
- **American Society for Histocompatibility & Immunogenetics**
  - 44th Annual Meeting
  - October 1-5
  - Baltimore, Maryland

- **American Association of Tissue Banks**
  - Annual Meeting
  - October 9-12
  - Dallas, Texas

- **AABB**
  - Annual Meeting
  - October 13-16
  - Boston, Massachusetts

- **European Society for Gene & Cell Therapy**
  - Annual Congress
  - October 16-19
  - Lausanne, Switzerland

- **European Association of Tissue Banks**
  - 27th Congress
  - October 17-19
  - Lille, France

- **European Society for Medical Oncology**
  - ESMO 2018 Congress
  - October 19-23
  - Munich, Germany

- **Histiocyte Society**
  - Annual Meeting
  - October 22-23
  - Lisbon, Portugal

**2019**
- **ASBMT/CIBMTR**
  - Transplantation and Cellular Therapy Meetings
  - February 20-24
  - Houston, Texas