Making CIBMTR Even Better: External Reviews

by Roberta King, MPH, Vice President-CIBMTR Minneapolis

To ensure that the CIBMTR continues to optimally serve the hematopoietic cell transplantation community, this year we are conducting a review of our processes and a review of our scientific agenda.

The process review was held in June, led by a consultant with expertise in this type of analysis. Three primary processes within the CIBMTR were analyzed: forms revision, data management and conducting observational studies. Staff examined the steps in each of these processes and then made recommendations for improving each process for both efficiency and quality. Twenty-one recommendations were adopted for immediate implementation.

For the scientific agenda review, we have invited experts from a variety of perspectives to review CIBMTR scientific activities, and to participate in a one-day forum with CIBMTR staff and scientific leadership in September. The resulting recommendations will be presented to the CIBMTR Advisory Committee in November and used to establish the scientific agenda for the next five years.

CIBMTR Working Committees

Scientific oversight for the use of CIBMTR data and statistical resources is done by 19 CIBMTR Working Committees with diverse membership from the transplant community. Following is another installment in our series focusing on the work of individual Working Committees.

Each committee is responsible for designing and conducting studies relevant to their subject area, considering proposals to use CIBMTR data for pertinent studies, assessing and revising relevant sections of CIBMTR data collection forms, and planning and conducting workshops at CIBMTR meetings.

These hardworking groups set priorities for observational studies to be done using CIBMTR’s large clinical database. For more information about the Working Committees and their roles, please go to http://www.cibmtr.org/COMMITTEES/Working_Committees/index.html.

Plasma Cell Disorders Working Committee

by Smriti Shrestha, MS, MA; Parameswaran Hari, MD, MS; Angela Dispensieri, MD; Gustavo Milone, MD; and Sagar Lonial, MD

The Plasma Cell Disorders Working Committee (PCDWC) focuses on research into the use of HCT for multiple myeloma (MM) and other plasma cell disorders. The committee was formed several years ago under the name “Multiple Myeloma Working Committee.” In the past few years, it has been among the most productive committees in generating research proposals to address a wide range of issues in the field.

PCDWC research focuses on defining the optimal role of transplantation for MM patients. Recent studies have examined prognostic factors (the International Staging System, role of response), subgroups of patients with myeloma (non-secretory myeloma, IgD and IgM myeloma, the elderly, transplants for MM patients with a range of cytopenias, syndromes), or MM patients with anemia, syndromes, or MM patients with anemia, syndromes.

Non-Malignant Marrow Disorders Working Committee

by Jeanette Carreras, MPH; Mark Walters, MD; Mouhab Ayas, MD; Joachim Deeg, MD; and Mary Eapen, MD, MS

Stem cell, bone marrow and cord blood transplantation have emerged as major therapeutic options for a number of non-malignant disorders, including aplastic anemia, congenital disorders of hematopoiesis, autoimmune cytopenias and others. The Non-Malignant Marrow Disorders Working Committee (NMMDWC) focuses on cellular therapy for these types of diseases.

The committee was one of the first established within IBMR, and has been among its most prolific in addressing a wide range of issues in HCT for patients with non-malignant hematopoietic disorders. It sets priorities for Non-Malignant Marrow Disorders observational studies using the large clinical database of the CIBMTR.
Stem Cell Therapeutic Outcomes Database (SCTOD)

by Carol Doleshy, BS, CPA

It has been almost three years since the U.S. Health Resources and Services Administration (HRSA) awarded the SCTOD contract to CIBMTR for the C.W. Bill Young Cell Transplantation Program. Since that time, a main focus has been developing our electronic data collection system, FormsNet™ 2.0, to help transplant centers meet their new reporting requirements. Recent activity has centered on enhancing FormsNet™ 2.0 and testing the AGNIS (A Growable Network Information System) messaging system. Following are some highlights of our progress.

FormsNet™ 2.0

All U.S. centers have been activated in formsNet™ 2.0 and the number of forms submitted through this system continues to increase. As of June 2008, 277 centers were using FormsNet™ to enter at least some of their data, and more than 200,000 forms had been processed. Enhancements to FormsNet™ 2.0 are ongoing. Forms Due reports were released in January 2009. These reports help centers manage their workload and ensure that forms are completed and submitted on time. Forms revisions needed for AGNIS were included in the February 2009 FormsNet™ release. Comprehensive Report Form (cRF) changes are scheduled for release in August 2009.

AGNIS

Work continues on the AGNIS system to enhance electronic data exchanges between transplant center databases and CIBMTR databases. Data elements are being “curated” with the NCI’s cancer data standards repository (caDRS) so that all data will comply with a national data standard. Data elements found on more than one form are being identified so they can be curated identically. The first release of AGNIS and several curated forms took place in March. Transplant centers that have prepared their systems for AGNIS can now submit Transplant Essential Data (TED) through AGNIS to the CIBMTR. For more information about the specifics of this release, refer to the AGNIS Release Notes at www.cibmtr.org.

Cord Blood Reports

Substantial progress was made recently in cord blood transplant reporting. CIBMTR is working with transplant centers, National Cord Blood Inventory banks, and the Cord Blood Coordinating Center via the newly-formed Cord Blood (CB) Data Working Group. This group is identifying and addressing issues specific to cord blood banks, especially barriers to data collection.

CIBMTR has been working with centers and banks to provide complete outcome reports for the banks. This is essential for their quality assurance, accreditation, and FDA compliance activities.

The first meeting of the CB Data Working Group in December focused on ideas for linking transplant center data with cord blood unit data from the banks and determining the most useful format for reports. These meetings helped identify both issues and solutions, which are now being implemented. The CIBMTR Recipient ID (CRID) is a critical component for banks and centers, to be certain their units are properly tracked in CIBMTR systems. Centers can expect that cord blood banks shipping units directly to them will request a recipient CRID prior to shipment to facilitate tracking outcomes.

Center Outcomes Data

A forum in September 2008 generated recommendations for the most equitable and understandable ways to perform transplant center-specific outcomes analysis - another SCTOD contract requirement. Center directors received a report in December that was discussed at the Medical Directors’ conference at Tandem. Discussions included the following issues:

- **When will data be analyzed?**
  The 2009 report will include only unrelated donor transplant information, as in the past. Related donors will be included on the 2010 report, once data for transplants performed in 2008 under SCTOD and one year of follow-up data are collected.

- **What outcomes will be measured?**
  The primary outcome is one-year survival. In the future, 100-day mortality will also be reported.

- **Will outcomes be risk adjusted?**
  Factors including patient volumes, clinical trial participation, co-morbidities, economic status, and others found to affect outcomes will be built into the statistical model.

- **Will pediatric and small centers be handled differently than adult centers?**
  Forum participants agreed that the same methods should be used for all centers. Larger confidence intervals around the one-year survival estimates will offer protection from over-interpretation of any individual year’s results to smaller centers.

- **How will center outcomes be made available to centers and the public?**
  Center outcomes will be posted to the website http://bloodcell.transplant.hrsa.gov. Prior to posting, transplant centers will have the opportunity to review, correct, and provide commentary on their center’s report.

- **What should a center do if its outcomes are outside the norms?**
  Steps may include reviewing data submitted to CIBMTR for accuracy, reviewing their center’s treatment patterns over the time period, or looking for differences, trends, changes, or new practices compared to the center’s past practices or national norms.

- **Are steps being taken to prevent unintended consequences?**
  The purpose of outcomes reporting is quality improvement. CIBMTR is carefully considering how to analyze and present the reports and how to give centers the tools they need to improve quality. A biennial review process will start in 2010. CIBMTR will incorporate the feedback it receives, as appropriate, in our reports to HRSA.

**Website Redesign**

CIBMTR is in the process of redesigning its website, www.cibmtr.org, to improve navigation and add new content. The first phase is targeted for fall 2009. The revisions will include additional access to information about the C.W. Bill Young Cell Transplantation Program and SCTOD.

**Advisory Council**

The Advisory Council on Blood Stem Cell Transplantation (ACBSCST) of the U.S. Department of Health and Human Services is responsible for supervising the C.W. Bill Young Cell Transplantation Program. Three open public meetings were held in 2008, and one so far in 2009. Discussion topics included:

- Definition of a high quality cord blood unit,
- Adult donor recruitment,
- Confidentiality policies for cord blood donors, and
- Public funding for required data collection.

Other information about SCTOD issues can be found on the HRSA website, http://bloodcell.transplant.hrsa.gov.

**BMT Tandem Meetings Convene In Florida**

by D’Etta Waldoch Benson, CMP

The combined annual meetings of the CIBMTR and the American Society for Blood and Marrow Transplantation (ASBMT) have been North America’s largest international gathering of blood and marrow transplant clinicians and investigators, laboratory technicians, transplant nurses, pharmacists and clinical research associates since 1995.

**2009 BMT Tandem Meetings Wrap-Up**

The 2009 BMT Tandem Meetings were held February...
Happy Anniversary CIBMTR!
by Stella Davies, MBB, PhD

While a gift of wood may be traditional when a milestone reaches a five-year anniversary, a gift of blood, sweat and tears might be more appropriate to celebrate the fifth anniversary of the CIBMTR in July 2009. It’s hard to believe we have reached this milestone already! Many people have given a lot to make this happen.

Perhaps the wedding many five years ago was “we’ve only just begun.” The affiliation that created the CIBMTR brought together the strengths of two great organizations (IBMTR and NMDP) with extensive experience in HCT-related research. It would take an entire newsletter to describe everything that has been done by CIBMTR in the last five years, but I’d like to note a few significant highlights here.

A major transformation took place in September 2006, when CIBMTR received a contract from HRS to administer the Stem Cell Therapeutic Outcomes Database (SCIDO). The NMDP was awarded contracts to operate three other components of the W. M. Bill Young Cell Transplantation Program. A program’s goal is to increase the access to, safety of, and effectiveness of HCT.

Mostly as a result of the SCIDO, much information technology advances have taken place, the biggest being the StemCell Network™ 2.0, which was launched in December 2007. This is CIBMTR’s first comprehensive electronic data collection system. The StemCell Network gives transplant centers many new, desired capabilities, such as on-line validation of data, immediate randomization of recipients, and the ability to print a PDF from electronically submitted data.

The first release of AGNIS (A Growable Network Information System) took place in March 2009. AGNIS allows transplant centers to electronically message data between their databases and the CIBMTR database. Currently, only 1ED data can be sent via AGNIS. By the summer, test sites for AGNIS. Eventually, any center will be able to transmit 1ED and cTLD data through AGNIS. At that time, there will be a large leap forward from the “old days” when transplant centers filled out paper forms and sent them through the mail to the CIBMTR for manual entry.

When the CIBMTR affiliation was established, the number of scientific Working Committees expanded from 12 to 17. In the past year, two more Working Committees were established: International Studies and Cellular Therapy. More than 200 active studies are in progress every year, and the number of proposals for new ones increases annually. Because CIBMTR has more than doubled its number of statisticians, it is now able to approve record numbers of proposals and move forward.

A milestone was reached in October 2008, when CIBMTR total publications passed 400 articles. The number of staff members has also increased during the five years of CIBMTR’s existence, to about 65 at each campus. CIBMTR continues to work together with NMDP and The EuroMABS Corporation to manage the BMTR Data and Coordinating Center, a process that began even before the affiliation. You can read about some of its accomplishments on page six. You can also read about the achievements of the BMTR, a new CIBMTR resource for small clinical trials that increases our knowledge about HCT, on page six.

11-15 in Tampa, Florida. There were 2,457 attendees, with registrations from 43 countries – a new record. Investigators representing 25 countries attended 400 abstracts. The abstracts are indexed and available online at www.cibmtr.org. They were also published in the February 2009 issue of Biology of Blood and Marrow Transplantation (vol. 15, no. 2, Supplement).

Audio CDs, synchronized audio/visual CDs and MP3 downloads of the 2009 sessions, including peripheral conferences of transplant nurses, clinical research professionals, center administrators and BMATM professionals, are available for purchase online.

In addition to a full scientific program, peripheral meetings will include the BMATM Training Workshops, Clinical Research Professionals Data Management Conference, BMATM Center Administrators Directors Conference, BMATM Pharmaceuticals Conference, BMATM Transplant Nurses Conference, BMATM Center Medical Directors Conference, and (new this year!) a Mid-Level Professionals (MP, PA) Conference and an ISCT meeting. Sessions targeted to pediatric cancer will take place February 25.

Up-to-date information about the 2009 meetings can be found on the CIBMTR (www.cibmtr.org) and ASBMT (www.asbmt.org) websites.

Looking Ahead to 2010

A short stay across the pond will take the BMATM Tandem Meetings to Orlando, February 24-28, 2010 at the Rosen Shingle Creek Convention Center. Scientific Program Chairs are Drs. Jeffrey Szer for CIBMTR and Joseph Atini for ASBMT.

In collaboration with the NMDP Office of Patient Advocacy, CIBMTR is working to increase understanding of HCT research in health policy and services issues as they relate to HCT. This new emphasis on Health Services Research will address topics that affect health and well-being among HCT patients, including cost-effectiveness and financing, patient and population health status and quality of life, outcomes of health care interventions, practice patterns and many more.

CIBMTR also participated in the evolution of the Worldwide Network for Blood and Marrow Transplantation (WBMTR) as one of its founding members societies, along with the European Group for Blood and Marrow Transplantation (EBMT), the World Marrow Donor Association and the Asia-Pacific Blood and Marrow Transplantation Group. WBMTR was recently invited by the World Health Organization to partner as a non-governmental organization to provide a single voice for HCT globally.

Perhaps the most important achievement of all since CIBMTR was created, however, has been the spirit of unprecedented collaboration and cooperation that has arisen between the individuals, the organizations, and the network personnel engaged in a common mission: continuing HCT research leading to better outcomes for patients. This is a noteworthy feat and everyone involved should be proud of what has been accomplished in a few short years.

These and many other initiatives have resulted in accomplishments well beyond what was envisioned at the time of the affiliation. Happy fifth anniversary, congratulations, and thank you to everyone who helped make it happen!
and the obese, and defining the role of autologous transplant and the graft versus myeloma effect. Another focus has been on the recent controversy over the timing and incremental benefit of autotransplant for myeloma. The curative intent of transplant approaches such as allogeneic transplant and donor lymphocyte therapy are also of great interest.

The CIBMTR Statistical Center and the PCDWC would like to acknowledge the leadership and scientific contributions of David H. Vesole, MD, PhD, and Donna E. Reece, MD, who served as committee co-chairs for more than a decade. The committee is now chaired by Angela Dispenzieri, MD (Mayo Clinic Transplant Center, Rochester, MN); Gustavo Milone, MD (Angelica Ocampo-Fundaleu, Argentina) and Sagar Lonial, MD (Winship Cancer Institute, Atlanta, GA), and assisted by Scientific Director Parameswaran Hari, MD, MS, and statisticians Smriti Shrestha, MS, MA, and Mei-Jie Zhang, PhD, of the Medical College of Wisconsin.

The most widely used guideline for assigning disease response for MM was developed more than 10 years ago by this committee, in collaboration with the European Group for Blood and Marrow Transplantation. It is internationally known as the Blide Criteria and may be found at:


The productivity of the PCDWC is shown by the following manuscripts, which are either published or in press:


Four abstracts from the committee were presented at the ASH meeting in 2008. The committee is proud to report it has 12 ongoing projects, listed below.

- Comparison of second autologous transplant versus related or unrelated non-myeloablative allogeneic HCT in patients with multiple myeloma who relapse after autologous transplantation. (Pls Cesar Freytes and David Vesole, MMD2-01/D01-117).
In addition to the following studies Encouraging the progress of the research studies and publications. They are assisted by CIBMTR Scientific Director, Mary Eapen, MD, MS, and statisticians Jeanette Carreras, MPH, Jennifer Le Rademacher, PhD, and Mei-Jie Zhang, PhD. The committee encourages all members of the transplant community to actively participate in committee activities by submitting new proposals or participating in the design and conduct of studies. Encouraging the participation of new investigators is a major goal of the CIBMTR. The next NMMDWC meeting will be held in February 2010 at Tandem.

In addition to the following studies published by the NMMDWC, several other studies are in process, with data collection and analysis ongoing.

The BMT CTN At Work

by Sarah Mull, Program Coordinator

The Blood and Marrow Transplant Clinical Trials Network (BMT CTN) was established in October 2001 to conduct large, multi-institutional clinical trials addressing important issues in HCT. Sixteen Core Clinical Centers and more than 90 Affiliate Centers nationwide are working collaboratively to improve outcomes for transplant patients. Since opening its first protocol in November 2003, more than 2,800 patients have been enrolled on 18 clinical trials.

There are currently 11 protocols actively accruing patients. Seven more are under development and six trials have successfully completed accrual. Six new concepts were approved during the past year by the BMT CTN Steering Committee for protocol team formation. The Network is eager to activate these trials in the near future. They include:

- A phase II/III randomized, multicenter trial comparing sirolimus plus prednisone, sirolimus/photopheresis plus prednisone, and sirolimus/calcineurin inhibitor plus prednisone for the treatment of chronic graft versus host disease (BMT CTN 0801).
- Initial systemic treatment of acute GVHD: a phase III randomized trial evaluating mycophenolate mofetil plus corticosteroids versus corticosteroids and placebo (BMT CTN 0802).
- High dose chemotherapy with autologous stem cell rescue for aggressive B cell lymphoma and Hodgkin lymphoma in HIV-infected patients (BMT CTN 0803).
- Phase II study of reduced-intensity allogeneic stem cell transplant for high risk chronic lymphocytic leukemia (BMT CTN 0804/CALGB 100701).
- A multi-center phase III study comparing myeloablative to nonmyeloablative transplantation in patients with myelodysplastic syndrome or acute myelogenous leukemia (BMT CTN 0901).
- A phase III randomized, multicenter trial testing whether exercise and/or stress management improves functional status and symptoms of autologous and allogeneic recipients (BMT CTN 0902).

Study Results

Four abstracts were presented in 2008 (three at ASH and one at ASCO). It is important to the BMT CTN and transplant community that findings are published as quickly as possible. We are proud to report that our first manuscript with outcome data from a Network study (BMT CTN 0302) was published this summer in Blood.

- Although most BMT CTN trials are still in progress, several have already yielded findings that have impacted clinical practice and research. These early publications include:

Future Network Activity Update

The BMT CTN continues to be actively involved in securing approval from NCI and NHLBI for renewal in 2011. For more information about the BMT CTN or any of its activities, please visit our public Website at www.bmtctn.net.
CIBMTR Summary Slides
by Marcello Pasquini, MD, MS, and Zhiwei Wang, MS

The Summary Slides are an annual report on data submitted to the CIBMTR. Part I focuses on trends in the use of hematopoietic cell transplantation (HCT) according to donor type, graft sources, patient age and transplant regimes. Early outcomes such as mortality rates at day 100 post HCT and causes of death are also included in this series. Graphs with total transplant numbers (slides 7 & 8) are estimates based on data reported to the CIBMTR adjusted according to transplant type. These adjustment factors are derived from comparisons with other national and international databases.

Acute myeloid leukemia (AML), acute lymphocytic leukemia (ALL), and chronic myelogenous leukemia (CML) are classified as early (first complete remission [CR1] or first chronic phase [CP1]), intermediate (second or subsequent CR or CP or accelerated phase [AP]), and advanced (primary induction failure, active disease, or blastic phase) disease. Myelodysplastic syndrome (MDS) is divided into early (refractory anemia [RA] or refractory anemia with ringed sideroblasts [RARS]), and advanced (refractory anemia with excess of blasts [RAEB] or chronic myelomonocytic leukemia [CMML]) disease. Lymphoma is classified according to sensitivity to prior chemotherapy (chemosensitive or chemoresistant).

The classification of conditioning regimen intensities is based upon the agents, doses and schedules used. Several classifications are available, and for this report we used a composite classification. Cases defined as using reduced-intensity conditioning by the transplant center were classified as such. Cases without such information and with available data on chemotherapy agents, radiation and doses were classified according to the CIBMTR operational definition of conditioning regimen intensity:

Myeloablative conditioning regimen: regimens with total body irradiation doses of ≥600 cGy, single fractionated doses of ≥800 cGy, busulfan doses of >9mg/kg, or melphalan doses of >150 mg/m2 given as single agents or in combination with other drugs.

Reduced-intensity conditioning regimen: regimens with lower doses of total body irradiation, fractionated radiation therapy, busulfan, and melphalan than those used to define a myeloablative conditioning regimen (above).

This article may be cited as follows: Pasquini MC, Wang Z. Current use and outcome of hematopoietic stem cell transplantation: Part I CIBMTR summary slides, 2009. CIBMTR Newsletter [serial online], 2009; (15)1:7-11. It may be found online at: http://www.cibmtr.org/PUBLICATIONS/Newsletter/index.html.

Slide 2: The CIBMTR database includes data reported by more than 500 centers in 54 countries worldwide.

Slide 3: Bone marrow is the primary graft source for transplantation in children, though the use of peripheral blood and umbilical cord blood grafts is increasing. During the period 2003 to 2007, peripheral blood grafts accounted for 28%, and cord blood accounted for 20% of allografts in patients younger than 20 years of age. Among adults older than 20 years, peripheral blood is the most common source of allografts.
Slide 4: Mobilized peripheral blood progenitor cells are currently the main graft source for autologous HCT, accounting for greater than 90% of transplants in children. The practice of combining bone marrow with peripheral blood stem cells in patients unable to mobilize optimal cell doses has decreased in both adults and children (1%). Better mobilization regimens and patient selection may account for this trend.

Slide 7: The most common indications for HCT in North America in 2006 were multiple myeloma and lymphoma, accounting for 63% of all HCTs. Multiple myeloma was the most common indication for autotransplantation and acute myeloid leukemia was the most common indication for allogeneic transplantation.

Slides 5 & 6: The numbers of autologous and allogeneic HCTs for treatment of the most common malignant disease indications in patients older than 60 continue to increase. Thirty-two percent of autograft recipients and 10% of allograft recipients in 2003-2007 were older than 60 years of age. The majority of autograft recipients (65%) are older than 50 years in this later period.
Slides 9 & 10: The proportion of transplants from unrelated donors is steadily increasing for both children and adults. For patients younger than 20, the proportion of unrelated transplants is 53%, with 23% utilizing cord blood as the graft source in 2006-2007. The same general trend is observed in patients older than 20 as well, with 46% of patients receiving unrelated donor transplants. Studies demonstrating similar outcomes between unrelated and related donor transplants, the increased availability of unrelated donors, and the increase in use of cord blood for the pediatric population are all responsible for this increase.

Slide 11: Graft selection for unrelated donor transplantation has shifted from bone marrow to other sources of hematopoietic cells. Among patients younger than 20 years, marrow was used for 40% of unrelated donor transplants in 2004-2007, compared to 53% in 2000-2003. Among patients older than 20 years, marrow accounted for 23% of unrelated donor transplants in 2004-2007, compared to 53% in 2000-2003. The use of cord blood, however, has increased only modestly in patients older than 20 years, reaching just 7%. Limited numbers of cells in single cord blood units is the main barrier for widespread use of this graft source in adults. Similar to related donor allogeneic transplantation, peripheral blood stem cells are the most common graft source for unrelated HCT in adults.

Slide 12: The past 10 years have seen a steady increase in the number of cord blood banks and consequently, in the number of umbilical cord blood transplantations. Although cord blood is most frequently an unrelated donor graft source, there are consistent small numbers of related donor cord blood transplants performed every year.

Slide 13: One-year survival rates after transplantation have generally improved in the last two decades. Outcomes of unrelated donor transplants are approaching those observed with related donors. Improvements in HLA-matching techniques, with consequently better donor selection, better overall patient selection for transplantation, and improvements in supportive care are the likely explanation for this trend.

One-Year Survival after a Myeloablative Conditioning Regimen for Acute Leukemias in any Remission, CML or MDS, Age 0-50 Years, 1988-2007, by Donor Source and Graft Type
Slide 14: The 100-day mortality rate is often cited to reflect the toxicity of the transplantation process. Hundred-day mortality rates are much lower after an autologous than after an allogeneic transplant. The primary disease and disease status at the time of transplantation also significantly affect early post-transplant mortality.

Slide 15 to 17: The effect of disease stage is even more apparent for allogeneic transplants. For instance, patients receiving HLA-identical sibling transplants for acute myeloid leukemia in remission have a 100-day mortality rate of 7% to 10% compared to 26% for patients with active leukemia at time of transplantation. Early mortality after an unrelated donor transplant is higher than after an HLA-identical sibling transplantation, but this also depends on disease and disease stage. The causes of death in the first 100 days post-transplant relate mainly to the primary disease, graft-versus-host disease, infection and end-organ damage. Early mortality in patients receiving allogeneic transplants after reduced-intensity conditioning is generally lower. However, patients with active disease have 100-day mortality rates approaching those observed with more intensive conditioning because of high rates of recurrent malignancy.

Slide 18: Relapse is the single most common cause of death after all transplant types, accounting for 73% of deaths after autologous HCT. Graft-versus-host disease (GVHD), interstitial pneumonitis (IPn) and infection are the major causes of death after allogeneic HCT.
Slides 19 to 22: The numbers of allotransplants performed with reduced intensity conditioning have steadily increased since 1998, accounting for more than a third of transplants in the later periods. Unrelated donor transplants with reduced intensity conditioning follow the same trends observed with transplants with myeloablative conditioning, with a slight majority of unrelated over sibling donor transplants. Mobilized peripheral blood is the most common graft source for transplants with reduced intensity conditioning. The age distribution according to conditioning regimen intensity demonstrates the preferential use of conditioning regimens with lower intensity in patients older than 50 years. Sixty percent of reduced-intensity conditioning recipients are within this age group, compared to fewer than 25% of those receiving standard high-intensity regimens. Patients younger than 50 years who are ineligible to receive myeloablative conditioning because of co-morbidities may undergo an allogeneic transplant with reduced-intensity conditioning.

Slide 23: Acute myeloid leukemia (AML) is the most common indication for reduced-intensity conditioning allotransplant, and the proportion of these transplants compared to myeloablative regimens is increasing in older patients. Fifty-three percent of patients 50 years and above received an allotransplant with reduced intensity conditioning in 2005-2007. In younger patients, standard myeloablative intensity regimens remain the most common.
Our Supporters

Thanks to the many contributors who have joined our international collaboration for research in blood and marrow transplantation. We gratefully acknowledge the support of the Medical College of Wisconsin; the National Cancer Institute; the National Heart, Lung and Blood Institute; the National Institute of Allergy and Infectious Diseases; Office of Naval Research; Health Resources and Services Administration (HRSA/DHHS) and the generosity of the supporters listed below.

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