surveillance cultures ($P < .0001$). When MMCI cases were compared to single MCI cases, significant differences included: female gender ($P < .0349$), receipt of allo-HSCT ($P < .0373$), vancomycin ($P < .0012$) and cefepime ($P < .0009$) use. There was no difference in the number of patients who experienced neutropenic fever between MMCI, MCI ($P < .275$) or culture negative cases ($P < .1247$). *Strept mitis* or *C.difficile* infection occurred concommitantly or preceded the second MCI in 29(47%) cases. Overall mortality was significantly higher in MMCI cases when compared to cases without any positive cultures ($P < .001$) or patients with a single MCI ($P < .0197$). There was no difference in overall mortality for patients who developed MMCI <72hours (polymicrobial) versus MMCI>72 (non-polymicrobial; $P < .2990$).

MMCI are an infrequent but serious cause of adverse events which occur during HSCT. Patients who are at high risk for developing MMCI require increased vigilance and early aggressive antibiotic therapy.

POSTER SESSION 1: TRANSPLANT DATA MANAGEMENT

324

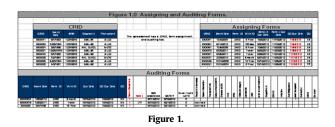### Reduce Errors and Past Due Reports Via Monthly Audits Using Crid Numbers

Sarah Cornman, Joshua Workman, Sharisa Cross, Jason D. Sabo, Tiffany Stoudemire, Tanya Rodela, Melissa Yurch, Shawnda Tench, Matt E. Kalaycio. *Department of Hematologic Oncology and Blood Disorders, Cleveland Clinic Taussig Cancer Institute, Cleveland, OH*

Background: In 2004, the National Marrow Donor Program's database merged with the International Bone Marrow Transplant Registry to streamline transplant research. To manage the fusion of forms generated in two separate databases, the Center for International Blood and Marrow Transplant Research (CIBMTR) began assigning each patient a unique Recipient Identification Number (CRID) in 2007. This has allowed transplant outcomes to be reported annually, because forms are now automatically generated for each CRID. Our center created a secure CRID spreadsheet to manage the merge and track form due dates (Figure 1). The spreadsheet has evolved into an auditing tool, serving to simplify our form assignment process and improve quality.

Best Practices: Using Forms Net, a designated Protocol Coordinator (PC) generates a monthly list of forms due for the next five week reporting period. Next, the list is exported to an excel spreadsheet allowing the PC to assign forms to Data Coordinators (DC's) with a DC due date set two weeks prior to the final due date in FormsNet. After the forms are assigned, DC's use the CRID spreadsheet to cross reference CRID numbers with Medical Record Numbers (MRN) to identify the corresponding patient to complete forms. The PC reviews each form using the CRID spreadsheet to track any errors made by the DC completing the form. Next, the audited forms are returned to the DC who corrects and reprocess the form in FormsNet. Each quarter, a designated DC cross references the CRID spreadsheet with Forms Net to ensure error correction and data quality. The spreadsheet can also be used as an opportunity to re-educate DC's on frequently missed fields and reduce errors on the following month's forms.

Outcomes: In the 2008 CIBMTR audit, our center's critical field error rate was 4.2%. Subsequently, implementation of the secure CRID spreadsheet helped reduce our 2012 critical field error rate to 1.7%. This tool will continue increasing data quality and reporting outcomes while concomitantly helping us reach our department goal of <1% error rate in 2016.

Figure 1.

325

Timely Capture of Relevant Data for CIBMTR

Mariane Pereira Diniz[1], Olga Margareth Wanderley de Oliveira Felix[2], Daniele Porto Barros[3], Adriana Seber[4]. [1] *Clinical Research Center, Instituto de Oncologia Pediátrica, São Paulo, Brazil;* [2] *Cell Processing Laboratory, Instituto de Oncologia Pediátrica, São Paulo, Brazil;* [3] *Instituto de Oncologia Pediátrica, São Paulo, Brazil;* [4] *Pediatric Bone Marrow Transplantation Center, Instituto de Oncologia Pediatrica, São Paulo, Brazil*

Introduction: Each hematopoietic stem cell transplant (HSCT) performed and fully reported to CIBMTR generates key information to support research that has cumulatively led to increased survival and enriched quality of life of thousands of patients. Between 50 and 60 HSCT (autologous, related and unrelated) are now annually performed at the Pediatric Oncology Institute, São Paulo, Brazil. The program started in 1999 and the first 167 transplants were reported by physicians and by the Cell Processing Laboratory staff. However, over the past 4 years, the institution was unable to keep up with the reporting schedule due to increasing working load. In February 2012, the effort to report all new and old patients to CIBMTR was resumed.

Objective: To report and share the strategy used to have all 629 forms efficiently updated and reported within 8 months.

Methods: The institutional efforts started by hiring a trained CRA part time devoted to CIBMTR data management. A very useful and comprehensive Excel-based spreadsheet was developed to have visual display of all due dates with colorful flags and automatic updates to the current date. Work flows were developed to capture data during weekly medical rounds. All sources of medical information – charts, laboratory and radiological reports, medical round reports - were accessed whenever necessary and included in the patient charts as documented source of information. All forms were weekly reviewed with a senior physician to ensure appropriate training and education of the new CRA.

Results: A total of 360 patients underwent HSCT between 1999 and September 2012. The CIBMTR forms had been last updated in 2008 and no new patients were registered since then. All information that posed the greatest

challenges to be found for Pre-TED and Post-TED Forms were included in the new work flow. A list of disease-specific staging was developed to guide disease status at annual evaluations. A visual approach was created in the spreadsheet to track forms completion with all patients due dates as follows: green - form may be completed, red - time to complete form has not yet been reached, blue - form is ready to be reported, yellow - form must be reviewed, purple - patient underwent another HSCT and black - death.

Conclusion: In October 2012 our goal was achieved and we were able to update and report all 193 patients. Team work and new efficient tools allowed control of due dates and optimization of time spent with data capturing, CRA/physician meetings and forms review. All items from all patients will now be timely reported.

326

A Comprehensive Review of DFCI's Adult HSCT Data

Lauren S. Fackler, Marion C. Tilearcio, Clara Yoon, Kimberly S. Phillips. Dana-Farber Cancer Institute/Brigham and Women's Cancer Center

Background: The DFCI/BWCC HSCT program is estimated to perform 525 transplants in 2012, and has performed 6000 transplants since inception in 1972. The quality of this data had previously not been reviewed on a large scale, only by smaller projects examining selected data fields for limited patient sets. The accuracy of this data is paramount since it is used for analysis of patient outcomes, policy compliance and operational considerations.

The goal of this project was to develop a comprehensive and efficient method of data validation for DFCI's internal HSCT repository and DFCI's SCTOD data.

Methods: Fifty-nine transplant essential data fields were selected for analysis including Day 0, Disease Status at Transplant, Best Response, aGVHD, and cGVHD. A program for comparing DFCI's internal repository data and DFCI's CIBMTR data (retrieved with the Data Back to Center tool) was designed in Microsoft Access, accounting for slight differences in coding rules and logic. In 2011 over 200,000 individual data points were compared. The analysis was performed in 2012 with more recent data.

Results: In 2011 the pre-HSCT and post-HSCT data sets had overall error rates of 0.51% and 0.77%, respectively. The pre-HSCT fields with error rates above 2% were Diagnosis Date (2.16%), KPS (2.23%), and Reason RIC (2.22%). The post-HSCT fields with high error rates above 2% were Cause of Death (3.27%) and Date of Death (3.94%). All errors were corrected and areas for staff education and codebook improvements were determined and implemented.

In 2012 the error rates for the previous year's fields with high error rates were Diagnosis Date (3.71%), KPS (0.80%), Reason RIC (2.14%), Cause of Death (2.34%), and Date of Death (1.37%) for data reported before the educational updates. The coding accuracy improved for data reported after the educational updates. For example, the error rates for the data that was reported after the educational updates for the previous year's fields with high error rates were Diagnosis Date (0.70%), KPS (1.69%), and Reason RIC (1.67%). Very limited post-HSCT data was available for data reported after the educational updates.

Conclusion: The pre-HSCT and post-HSCT data sets for DFCI's internally and externally reported data had overall percent error rates well below the HSCT Program's target error rate of 2% or lower. When the analysis was performed after staff education and codebook revisions, data accuracy improved. Comparing similar data entered into different databases is a valuable tool to correct data errors, as well as to improve data accuracy in the future.

328

Cancer Registrars Evolving in Bone Marrow Transplant Data Management

Christine Gibson. Blood and Marrow Transplantation, H. Lee Moffitt Cancer Center, Tampa, FL

Cancer Registrars Evolving in Bone Marrow Transplant Data Management Christine Gibson, CTR, CCRP Cancer Registrars are well versed in the language of Cancer. CTR credentials are given once education, training and testing is satisfied. Training includes, anatomy and physiology, AJCC staging, NAACCR (The North American Association of Central Cancer Registries) guidelines for data capture, CDC, NCI SEER guidelines for Hematopoietic Database, Collaborative Staging, NCCN treatment guidelines and Commission on Cancer guidelines. Many resources and many regulatory bodies over see the data as we over see the data in our own institutions. Standards of Care and comparisons are made to assure the best possible patient experience. Diagnosis information, pathology, molecular testing, IHC, FISH; cyto-genetic, tumor markers and prognostic indicators are the foundation of caner reporting. Radiology tests and surgical interventions with histological diagnosis, dictate the stage of cancer. Once a stage of cancer is derived; a treatment plan can be made. Cancer treatment is captured in the cancer registry. Chemotherapy regimens, radiation, immuno-therapy, vaccines and bone marrow transplant information is abstracted into the cancer registry. Cancer Programs that are American College of Surgeons, Commission on Cancer approved are required to have Cancer Registries. Annual follow up compliance is mandatory for all cancer patients in the cancer registry. It would seem that if resources were shared between the registries and regulators it could be more cost effective, and provide better data capture for the hematopoietic diseases. While many similarities exist between the two entities there are many differences. Continuous education is mandatory in a research environment. I have expanded my knowledge base. I have since learned about consents, regulatory agencies, engraftment, chimerism, acute and chronic GVHD, toxicities, infections and the many different time lines to report. Cancer registry background helped tremendously and working in a world class facility with world class physicians made the transition much easier.

329

Development of a Flexible, Functional Hematopoietic Cell Transplant (HCT) Database, BRAIN

Ryan Hillgruber[1], Diane Coyle[1], Christine Gibson[1], Noemi Feliciano[1], Samantha McCormick[1], Craig Linderman[2], Miguel Restrepo[2], Brenda Schlagenhauf[2], Larry Kuba[2], Amilcar Blake[2], Ed Chwieseni[2], Marcie Tomblyn[1]. [1] Blood and Marrow Transplantation, H. Lee Moffitt Cancer Center, Tampa, FL; [2] Research IT, H. Lee Moffitt Cancer Center, Tampa, FL