Center Specific Survival Analysis
2020 Update

Center Outcomes Forum

November 20, 2020
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Agenda for Center Outcomes Forum - 2020

• Center specific survival analysis 2020 – brief summary  
  – Activities related to the Center Outcomes Forum 2018
• Is Minimal Residual Disease for acute leukemia ready for use as a risk adjustment factor in the center specific analysis?
• Are there new approaches to account for social determinants of health beyond those currently assessed in risk adjustment model?
• Can CIBMTR adequately adjust for the impact of the COVID-19 pandemic in the center specific analysis and if so, how?
• Center Specific Analysis research project proposals
• Update on consequences of public reporting
Center Outcomes Reporting for HCT – Status Update 2020
• Center outcomes report 2020 includes 3 full years of data:
  – Unrelated and Related HCT 2016 – 2018
• Multivariate analysis adjusts for ‘risk factors’
  – Adult and Pediatric BMI introduced 2020
• Centers must have >90% overall f/u at 1 year
  – 4 centers closed or became inactive,
• 172 US centers; 24,687 patients first allogeneic HCT
  – 5 centers (~542 pts) removed because of quality concerns in audits
• Primary outcome: One-year survival
  – Overall: 74.1% (76.4% REL, 72.2% UNR) – 2019: 72.3, 74.8, 70.3
How are US centers doing? 2020

Risk Adjusted Performance

- Above Expected: 8%
- As Expected: 77%
- Below Expected: 13%

N = 172
Changes in performance: 2019 → 2020

Change from 2018 Report

- No Change: 80%
- Improved: 11%
- Declined: 9%

N = 172
Changes in 2020 Report

• Therapy-related MDS statistically significant
• Donor age in 5-year increments
• BMI groups introduced
  – Statistically significant for underweight adults, not for pediatrics
• Ethnicity and ALL T cell lineage not significant
• Individual Centers’ data available on CIBMTR portal
  – Includes of the intercept term for analysis (since 2017)
  – Allows centers to develop tools
Enhanced Risk Adjustment – 2018 and 2019

• Patient factors:
  – Median household income by zip **
  – History of mechanical ventilation**
  – History of invasive fungal infection**
  – Recipient ethnicity*

• Disease factors:
  – AML transformed from MDS/MPN **

• Disease factors:
  – AML ELN risk – cytogenetic and molecular**
  – Greater refinement of AML and AML in CR3+/REL/PIF*
    • CR1, CR2, CR3+, REL1, REL2, PIF
  – Addition of interval dx to tx for CR3+ and REL*
  – ALL Ph+ *
  – MDS IPSS-R at HCT**
  – Plasma cell disorders disease status at HCT**

* <0.01; ** <0.001
Topics from 2018 COF – what has happened?

• Discuss impact of “enhanced” risk adjustment model implemented in 2018 - √

• Recommendations for variables to improve risk adjustment for pediatric non-malignant diseases √

• Consider new modeling techniques to handle center effect, prediction √

• Follow-up on recommendations about managing consequences – in progress

• Develop a research agenda regarding impacts – in progress
Agenda COF 2020

- Is MRD status in acute leukemia ready?
- Are there better ways to adjust for social determinants of health?
- Can we adequately adjust for the impacts of COVID-19 on this analysis and if so, how?
- Progress on research agenda
- Follow-up on recommendations about managing consequences
My sincere appreciation

• Center Specific Analysis “Core” Team:
  – Caitrin Fretham, Sue Logan, Janet Brunner Grady, Michele Kuxhausen, Jenni Bloomquist, Steve Spellman, Brent Logan, Alyssa Carlson, Maria Brown

• Carol Doleysh – Program Manager, SCTOD
• Alicia Halfmann and Carol – Center Outcomes Forum
• Dan Weisdorf, John Wingard, Navneet Majhail, Wael Saber for moderating
• Wael Saber and Research protocol teams

• Panelists
Using the Q & A

- Open the Q & A panel.
- On the Q & A panel, **type your question** in the text box.
- In the Ask drop-down list, select **All Panelists**, and then select **Send**.
- Questions will be answered during designated discussion times.
Raise your Hand! 🧡

- Find the ‘Participants’ panel on the right
- Click the hand button 🧡 to raise your hand. A hand will appear next to your name
  - To lower your hand, click then hand button again!
- Questions will be answered during designated discussion times
The CIBMTR® (Center for International Blood and Marrow Transplant Research®) is a research collaboration between the National Marrow Donor Program® (NMDP)/Be The Match® and the Medical College of Wisconsin (MCW).

Thank you
C.W. Bill Young Cell Transplantation Program*

US Department of Health and Human Services

Individually contracted and accredited cord blood banks

$\text{National Cord Blood Inventory (NCBI)}$

$\text{Stem Cell Therapeutic Outcomes Database (SCTOD)}$

$\text{Single Point of Access–Coordinating Center (SPA-CC)}$

$\text{Office of Patient Advocacy (OPA)}$

Components of the C. W. Bill Young Cell Transplantation Program

Transplant centers, patients and families, referring physicians

$\text{Advisory Council on Blood Stem Cell Transplantation}$

HRSA/Division of Transplantation

Interconnected nodes indicate HRSA Contract Functions

Center Outcomes Analysis: Basic Concepts

- Examination of individual center specific outcomes relative to the overall network
  - The CENTER is the unit of analysis
- Risk Adjustment for relevant patient, disease, transplant factors (‘case mix’)
- Assessment of center performance should account for sampling variability/sample size
- Understandable to professional and public audiences
International Center Specific Survival Analysis

• Available to interested international centers
• Foundation is US multivariate analysis
  – Potential limitation – **US centers** are the benchmark – not enough international centers to create distinct multivariate model
• Similar standards of completeness of data and follow-up
  – Challenges for some international centers
• 14 participating centers and ~2000 patients
• EBMT developing a benchmarking project
What is the center outcomes forum?

• Bi-annual meeting to discuss the center specific survival analysis for hematopoietic cell transplantation (HCT) – the highest impact report produced for the Stem Cell Therapeutics Outcomes Database (SCTOD)


• Invitees include:
  – HCT centers/community, ASBMT Quality Outcomes Committee, biostatisticians, quality and reporting methodologists, patients, payers, National Institutes of Health/Office of Naval Research/Health Resources and Services Administration representatives

• Held in MKE, MSP, virtual

• High degree of engagement with attendees