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Spellman, Stephen

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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
National Marrow Donor Program
500 N. 5th St.
Minneapolis, MN 55401-1206

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9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Office of Naval Research
875 N. Randolph Street, Suite 1425
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14. ABSTRACT

1. Contingency Preparedness: Collect information from transplant centers, build awareness of the Transplant Center Contingency Planning Committee and educate the transplant community about the critical importance of establishing a nationwide contingency response plan.

2. Rapid Identification of Matched Donors: Increase operational efficiencies that accelerate the search process and increase patient access are key to preparedness in a contingency event.

3. Immunogenic Studies: Increase understanding of the immunologic factors important in HSC transplantation.

4. Clinical Research in Transplantation**:** Create a platform that facilitates multicenter collaboration and data management.

15. SUBJECT TERMS
Research in HLA Typing, Hematopoietic Stem Cell Transplantation and Clinical Studies to Improve Outcomes

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DEVELOPMENT OF MEDICAL TECHNOLOGY

FOR CONTINGENCY RESPONSE TO MARROW TOXIC AGENTS

QUARTERLY RESEARCH PERFORMANCE REPORT

SUBMITTED January 15th, 2021

Office of Naval Research

And

The National Marrow Donor Program®

500 5th St N

Minneapolis, MN 55401

I. Heading

PI: Steven Devine, M.D.

National Marrow Donor Program

N00014-20-1-2705

Development of Medical Technology for Contingency Response to Marrow Toxic Agents

II. Scientific and Technical Objectives

The main goal of all activities funded through this grant is to develop, test and mature the ability of the NMDP Coordinating Center and NMDP contracted network sites network sites to address contingency events wherein civilian or military personnel are exposed to marrow toxic agents, primarily ionizing radiation or chemical weapons containing nitrogen mustard. As a result of prior efforts in this regard a solid foundation has been established. The proposed new activities will continue to enhance and expand our capabilities in each of the four focus areas. Contingency preparedness activities will continue to integrate NMDP's role with federal, state and local agencies.

An accident, a military incident, or a terrorist act in which a number of individuals are exposed to marrow toxic agents will result in injuries from mild to lethal. But the extent of individual injuries and the likelihood of recovery in many cases will not be apparent until days or weeks after the event. Casualties will be triaged by first responders, and those with major marrow injuries who will need aggressive medical support and may be ultimately candidates for hematopoietic cell transplantation (HCT) will need to be identified. While these patients are being supported, HCT donor identification activities will be initiated because it will not be initially clear which ones may ultimately require HCT. NMDP-approved transplant centers will provide a uniform and consistent clinical foundation for receiving, evaluating and caring for casualties. NMDP Coordinating Center will orchestrate the selection and testing necessary to rapidly identify the best available donor or cord blood unit for each patient utilizing its state-of-the-art communication infrastructure, sample repository, laboratory network, and human leukocyte antigen (HLA) expertise. NMDP's on-going immunobiologic and clinical research activities promote studies to advance the science and technology of HCT transplantation to improve outcome and quality of life for the patients.

Importantly, most individuals with near-lethal marrow toxic injuries will recover their own marrow function provided they receive intensive supportive care from the medical professionals that are part of the contingency response community.[1] These professionals can save the lives of persons with severe marrow suppression using the knowledge and skills practiced every day to treat patients undergoing HCT coordinated through the NMDP.

III. Approach

A. Contingency Preparedness

HCT teams are uniquely positioned to care for the casualties of marrow toxic injuries. The NMDP manages a network of centers that work in concert to facilitate unrelated HCT. The Radiation Injury Treatment Network (RITN), comprised of a subset of NMDP's network centers, is dedicated to radiological disaster preparedness activities and develops procedures for response to marrow toxic mass casualty incidents.

B. Development of Science and Technology for Rapid Identification of Matched Donors
Disease stage at the time of transplantation is a significant predictor of survival, decreasing the time to identify the best matched donor is critical. Methods are under development to rapidly provide the best matched donor for HCT.

C. Immunogenetic Studies in Transplantation
Improving strategies to avoid and manage complications due to graft alloreactivity is essential to improve the outcomes of HCT. Research efforts are focused on strategies to maximize disease control while minimizing the toxicity related to alloreactivity in HCT.

D. Clinical Research in Transplantation

Clinical research creates a platform that facilitates multi-center collaboration and data management to address issues important for managing radiation exposure casualties. Advancing the already robust research capabilities of the NMDP network will facilitate a coordinated and effective contingency response.

IV. Updates

A. Contingency Preparedness

Maintain the Radiation Injury Treatment Network (RITN) to prepare for the care of patients resulting from a hematopoietic toxic event.

During this quarter RITN continued to develop the preparedness of its network of hospitals through the following activities:

- Completed development of the RITN Acute Radiation Syndrome (ARS) Cytokine Administration Triage guidelines and shipped hard copies of poster versions and pocket cards to all RITN hospitals as well as to RITN partner organizations.
- Finalized the RITN training videos and posted on the RITN website and the RITN YouTube Channel for access globally:
    - Decontamination and Care for Radiation Disaster Patients
    - Updated: Introduction to RITN

B. Development of Science and Technology for Rapid Identification of Matched Donors

Expand the genetic diversity of the registry through continued addition of adult donors and cord blood units, utilizing high volume HLA typing methodologies.

Supported HLA typing of 169, 486 newly registered volunteer donors between October 1, 2019 and December 31, 2020 with 24,865 added in the past quarter.

Modeling and analysis of registry coverage for the Warfighter

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

Development of science and technology for rapid communication of HLA data

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

Use of population genetics and machine learning to automate the donor selection process

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

C. Immunogenetic Studies in Transplantation

Evaluate HLA disparity and impact on HCT by adding selected pairs to the Donor/Recipient Pair project utilizing sample selection criteria that optimize the new data generated by the typing project.

Donor Recipient Pair Project

- The study team selected >8,600 pairs for enrollment in the project and used grant funds to support approximately half of the typing costs. All selected sample pairs have shipped to the project laboratory for testing. All results were received prior to Sept. 30, 2020 and efforts to finalize the data audit were completed under the FY21 grant.

Develop and mature typing protocols for the highly polymorphic KIR.

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

Determine the frequency and risks associated with donor clonal hematopoiesis of indeterminate potential in HCT.

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

D. Clinical Research in Transplantation

Conduct clinical outcomes research using the CIBMTR research database and repository.

Observational Research

- Published 18 manuscripts in peer-reviewed journals during the last quarter (Oct. 1, 2020-Dec. 31, 2020) and a total of 99 manuscripts under this grant (Oct. 1, 2019-Dec. 31, 2020).

Support for the Clinical Transplant-Related Long-term Outcomes of Alternative Donor Allogeneic Transplantation (CTRL-ALT-D) trial

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

Rapid mobilization and collection of stem cells for HCT will decrease time to transplant and simplify the logistics of product harvest.

Activity under this aim completed between Oct. 1, 2019 and Sept. 30, 2020.

Publications

1. Mohty M, Malard F, Abecasis M, et al. Prophylactic, preemptive, and curative treatment for sinusoidal obstruction syndrome/veno-occlusive disease in adult patients: a position statement from an international expert group. Bone Marrow Transplantation. doi:10.1038/s41409-019-0705-z. Epub 2019 Oct 1. Impact factor: 4.70.

2. Solomon SR, St. Martin A, Shah NN, et al. Myeloablative vs reduced intensity T-cell-replete haploidentical transplantation for hematologic malignancy. Blood Advances. 2019 Oct 8; 3(19):2836-2844. doi:10.1182/bloodadvances.2019000627. Epub 2019 Oct 3. PMC6784523. Impact factor: 4.6.

3. Muhsen IN, Hashmi SK, Niederwieser D, et al. Correction: Worldwide Network for Blood and Marrow Transplantation (WBMT) perspective: the role of biosimilars in hematopoietic cell transplant: current opportunities and challenges in low- and lower-middle income countries. Bone Marrow Transplantation. doi:10.1038/s41409-019-0714-y. Epub 2019 Oct 15. Impact factor: 4.70.

4. Snowden JA, Saccardi R, Orchard K, et al. Benchmarking of survival outcomes following haematopoietic stem cell transplantation: A review of existing processes and the introduction of an international system from the European Society for Blood and Marrow Transplantation (EBMT) and the Joint Accreditation Committee of ISCT and EBMT (JACIE). Bone Marrow Transplantation. doi:10.1038/s41409-019-0718-7. Epub 2019 Oct 21. Impact factor: 4.70.

5. Bejanyan N, Kim S, Hebert KM, et al. Choice of conditioning regimens for bone marrow transplantation in severe aplastic anemia. Blood Advances. 2019 Oct 22; 3(2):3123-3131. doi:10.1182/bloodadvances.2019000722. Epub 2019 Oct 22. PMC6849938. Impact factor: 4.6.

6. Herr MM, Curtis RE, Tucker MA, et al. Risk factors for the development of cutaneous melanoma after allogeneic hematopoietic cell transplantation. Journal of the American Academy of Dermatology. doi:10.1016/j.jaad.2019.10.034. Epub 2019 Oct 22. Impact factor: 7.69.

7. Askar M, Madbouly A, Zhrebker L, et al. HLA haplotypes in 250 families: The Baylor Laboratory results and a perspective on a core NGS testing model for the 17th International HLA And Immunogenetics Workshop. Human Immunology. 2019 Nov 1; 80(11):897-905. doi:10.1016/j.humimm.2019.07.298. Epub 2019 Oct 23. Impact factor: 2.3.

8. DeFilipp Z, Ancheta R, Liu Y, et al. Maintenance tyrosine kinase inhibitors following allo-HCT for chronic myeloid leukemia: A CIBMTR study. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Mar 1; 26(3):472-479. doi:10.1016/j.bbmt.2019.10.017. Epub 2019 Oct 25. Impact factor: 3.9.

9. Petersdorf EW, Carrington M, O'hUigin C, et al. Role of HLA-B exon 1 in graft-versus-host disease after unrelated haemopoietic cell transplantation: A retrospective cohort study. The Lancet Haematology. 2020 Jan 1; 7(1):e50-e60. doi:10.1016/S2352-3026(19)30208-X. Epub 2019 Oct 25. PMC6948919. Impact factor: 59.75.

10. Louzoun Y, Lobkovsky AE, Levi L, et al. Reply to Hedrick and Klitz: High haplotype discovery rate in the HLA locus. Proc Natl Acad Sci USA. 2019 Oct 29. pii: 201916124. doi: 10.1073/pnas.1916124116. [Epub ahead of print]. Impact factor: 9.4.

11. Eapen M. A resurgence of cord blood transplantation? The Lancet Haematology. doi:10.1016/S2352-3026(19)30234-0. Epub 2019 Nov 5. Impact factor: 59.75.

12. Newell LF, DeFor TE, Cutler C, et al. Follistatin and Soluble Endoglin Predict 1-Year Nonrelapse Mortality after Allogeneic Hematopoietic Cell Transplantation Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Mar 1; 26(3):606-611. doi:10.1016/j.bbmt.2019.11.006. Epub 2019 Nov 10. Impact factor: 3.9.

13. Buchbinder D, Brazauskas R, Bo-Subait K, et al. Predictors of lost to follow-up among pediatric and adult hematopoietic cell transplant survivors: A report from the Center for International Blood and Marrow Transplant Research. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Mar 1; 26(3):553-561. doi:10.1016/j.bbmt.2019.11.003. Epub 2019 Nov 11. Impact factor: 3.9.

14. Sapir-Pichhadze R, Zhang X, Ferradji A, et al. Epitopes as characterized by antibody-verified eplet mismatches determine risk of kidney transplant loss. Kidney International. doi:10.1016/j.kint.2019.10.028. Epub 2019 Nov 12. Impact factor: 8.9.

15. Sapir-Pichhadze R, Zhang X, Ferradji A, et al. Epitopes as characterized by antibody-verified eplet mismatches determine risk of kidney transplant loss. Kidney International. 2020 Apr;97(4):778-785. e-pub November 12, 2019 doi: 10.1016/j.kint.2019.10.028. Impact factor: 8.9.

16. Preussler JM, Denzen EM, Majhail NS, et al. Engaging patients and caregivers in the design of print and web-based hematopoietic cell transplantation Individualized survivorship care plan tools. Supportive Care in Cancer. doi:10.1007/s00520-019-05114-3. Epub 2019 Nov 15. TBD. Impact factor: 2.6.

17. Pidala J, Hamadani M, Dawson P, et al. Randomized multicenter trial of sirolimus vs prednisone as initial therapy for standard-risk acute GVHD: The BMT CTN 1501 trial. Blood. 2020 Jan 1; 135(2):97-107. doi:10.1182/blood.2019003125. Epub 2019 Nov 18. PMC6952830. Impact factor: 17.5.

18. Simanovsky AL, Madbouly A, Halagan M, et al. Single haplotype admixture models using large scale HLA genotype frequencies to reproduce human admixture. Immunogenetics. 2019 Nov 1; 71(10):589-604. doi:10.1007/s00251-019-01144-7. Epub 2019 Nov 18. Impact factor: 2.36.

19. Majhail NS, Mau L-W, Chitphakdithai P, et al. Transplant center characteristics and survival after allogeneic hematopoietic cell transplantation in adults. Bone Marrow Transplantation. doi:10.1038/s41409-019-0748-1. Epub 2019 Nov 18. Impact factor: 4.7.

20. Ballen K, Logan BR, Chitphakdithai P, et al. Unlicensed umbilical cord blood units provide a safe and effective graft source for a diverse population: A study of 2456 umbilical cord blood recipients. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2019.11.016. Epub 2019 Nov 19. Impact factor: 3.9.

21. Sapir-Pichhadze R, Zhang X, Ferradji A, et al. Epitopes as characterized by antibody-verified eplet mismatches determine risk of kidney transplant loss. Kidney International e-pub November

12, 2019 doi: 10.1016/j.kint.2019.10.028. Impact factor: 8.95.

22. Giralt S, Costa LJ, Maloney D, et al. Tandem Autologous-Autologous versus Autologous-Allogeneic Hematopoietic Stem Cell Transplantation for Patients with Multiple Myeloma: Long-term Follow-Up Results from the Blood and Marrow Transplant Clinical Trials Network (BMT CTN) 0102 Trial. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2019.11.018. Epub 2019 Nov 19. Impact factor: 3.9.

23. Snowden JA, Saccardi R, Orchard K, et al. Correction: Benchmarking of survival outcomes following haematopoietic stem cell transplantation: A review of existing processes and the introduction of an international system from the European Society for Blood and Marrow Transplantation (EBMT) and the Joint Accreditation Committee of ISCT and EBMT (JACIE). Bone Marrow Transplantation. doi:10.1038/s41409-019-0740-9. Epub 2019 Nov 21. Impact factor: 4.7.

24. Meyer C, Mau L-W, Murphy EA, et al. Addressing knowledge gaps in acute myeloid leukemia to improve referral for hematopoietic cell transplantation consultation. Journal of the National Comprehensive Cancer Network : JNCCN. 2019 Dec 1; 17(12):1473-1481. doi:10.6004/jnccn.2019.7327. Epub 2019 Dec 1. Impact factor: 9.31.

25. Shah NN, Ahn KW, Litovich C, et al. Allogeneic transplantation in elderly patients ?65 years with non-Hodgkin lymphoma: A time-trend analysis. Blood Cancer Journal. 9(12):97. doi:10.1038/s41408-019-0261-1. Epub 2019 Dec 3. PMC6890709. Impact factor: 8.0.

26. Ho VT, Martin AS, Pérez WS, et al. Prior gemtuzumab ozogamicin exposure in adults with acute myeloid leukemia does not increase hepatic veno-occlusive disease risk after allogeneic hematopoietic cell transplantation: A CIBMTR analysis. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2019.12.763. Epub 2019 Dec 28. Impact factor: 3.9.

27. Dunavin N, Mau L-W, Meyer CL, et al. Health care reimbursement, service utilization, and financial responsibility among Medicare beneficiaries with multiple myeloma receiving autologous hematopoietic cell transplantation in inpatient and outpatient settings. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2019.12.772. Epub 2020 Jan 6. Impact factor: 3.9.

28. Dreger P, Fenske TS, Montoto S, et al. Cellular immunotherapy for refractory DLBCL in the CART era: still a role for allogeneic transplantation? Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2019.12.771. Epub 2020 Jan 6. Impact factor: 3.9.

29. Dandoy CE, Kim S, Chen M, et al. Incidence, risk factors, and outcomes of patients who develop mucosal barrier injury-laboratory confirmed bloodstream infections in the first 100 days after allogeneic hematopoietic stem cell transplant. JAMA Network Open. 2020 Jan 3; 3(1):e1918668. doi:10.1001/jamanetworkopen.2019.18668. Epub 2020 Jan 8. PMC6991246. Impact factor: 24.8.

30. Wong WH, Bhatt S, Trinkaus K, et al. Engraftment of rare, pathogenic donor hematopoietic mutations in unrelated hematopoietic stem cell transplantation. Science Translational Medicine. 2020 Jan 15; 12(526):1-9. doi:10.1126/scitranslmed.aax6249. Epub 2020 Jan 15. Impact factor:

16.3.

31. McReynolds LJ, Wang Y, Thompson AS, et al. Population frequency of Fanconi pathway gene variants and their association with survival after hematopoietic cell transplant for severe aplastic anemia. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.01.011. Epub 2020 Jan 23. Impact factor: 3.9.

32. Levine JE, Antin JH, Allen CE, et al. Priorities for improving outcomes for non-malignant blood diseases: A report from the Blood and Marrow Transplant Clinical Trials Network. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.01.024. Epub 2020 Jan 24. Impact factor: 3.9.

33. Pagel JM, Othus M, Garcia-Manero G, et al, Appelbaum FR. Rapid donor identification improves survival in high-risk first-remission patients with acute myeloid leukemia. JCO Oncology Practice. doi:10.1200/JOP.19.00133. Epub 2020 Jan 27. Impact factor: 32.9.

34. Savage SA, Viard M, O'hUigin C, et al. Genome-wide association study identifies HLA-DPB1 as a significant risk factor for severe aplastic anemia. American Journal of Human Genetics. 2020 Feb 6; 106(2):264-271. doi:10.1016/j.ajhg.2020.01.004. Epub 2020 Jan 30. PMC7010969. Impact factor: 10.5.

35. Fatobene G, Rocha V, St Martin A, et al. Nonmyeloablative alternative donor transplantation for Hodgkin and non-Hodgkin lymphoma: From the LWP-EBMT, Eurocord, and CIBMTR. Journal of Clinical Oncology. doi:10.1200/JCO.19.02408. Epub 2020 Feb 7. Impact factor: 32.9.

36. Jagadeesh D, Majhail N, He Y, et al. Outcomes of rituximab?BEAM versus BEAM conditioning regimen in patients with diffuse large B cell lymphoma undergoing autologous transplantation. Cancer. doi:10.1002/cncr.32752. Epub 2020 Feb 12. Impact factor: 5.74.

37. Schmidt S, Liu Y, Hu Z-H, et al. The role of donor lymphocyte infusion (DLI) in post hematopoietic cell transplant (HCT) relapse for chronic myeloid leukemia (CML) in the tyrosine kinase inhibitor (TKI) era. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.02.006. Epub 2020 Feb 13. Impact factor: 3.9.

38. Shah O, Tamaresis JS, Kenyon LJ, et al. Analysis of Whole CDR3 TCR Repertoire After Hematopoietic Stem Cell Transplantation in Two Clinical Cohorts Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.01.020. Epub 2020 Feb 17. Impact factor: 3.9.

39. Hsu JW, Shaw BE, Kim S, et al. Collection of peripheral blood progenitor cells in one day is associated with decreased donor toxicity compared to two days in unrelated donors. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.02.011. Epub 2020 Feb 20. Impact factor: 3.9.

40. Farhadfar N, Hsu JW, Logan BR, et al. Weighty choices: Selecting optimal G-CSF doses for stem cell mobilization to optimize yield. Blood Advances. 2020 Feb 25; 4(4):706-716. doi:10.1182/bloodadvances.2019000923. Epub 2020 Feb 25. PMC7042992. Impact factor: 4.6.

41. Weisdorf D, Cooley S, Wang T, et al. KIR B donors improve the outcome for AML patients given reduced intensity conditioning and unrelated donor transplantation. Blood Advances. 2020 Feb 25; 4(4):750-754. doi:10.1182/bloodadvances.2019001053. Epub 2020 Feb 25. PMC7042994. Impact factor: 4.6.

42. Epperla N, Li A, Logan B, et al. Incidence, risk factors for and outcomes of transplant?associated thrombotic microangiopathy. British Journal of Haematology. doi:10.1111/bjh.16457. Epub 2020 Mar 2. Impact factor: 5.5.

43. Mau L-W, Preussler JM, Burns LJ, et al. Generalized additive modeling of cost trajectories from healthcare claims data: Costs of treating privately-insured patients with acute myeloid leukemia in the United States 2004-2014. PharmacoEconomics. doi:https://doi.org/10.1007/s40273-020-00891-w. Epub 2020 Mar 4. Impact factor: 3.33

44. Kuxhausen M, Burns L, Chitphakdithai P, et al. Clonal Hematopoiesis in related allogeneic transplant donors: Implications for screening and management. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.02.022. Epub 2020 Mar 5. Impact factor: 3.9.

45. Hamadani M, Khanal M, Ahn KW, et al. Higher total body irradiation dose-intensity in fludarabine/TBI-based reduced-intensity conditioning regimen is associated with inferior survival in non-Hodgkin lymphoma patients undergoing allogeneic transplantation: Flu/2Gy TBI vs Flu/4Gy TBI in NHL. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.02.025. Epub 2020 Mar 9. Impact factor: 3.9.

46. Curatis RN, Tecca HR, D'Souza A, et al. Prevalence of decisional regret among patients who underwent allogeneic hematopoietic stem cell transplantation and associations with quality of life and clinical outcomes. Cancer. doi:10.1002/cncr.32808. Epub 2020 Mar 10. Impact factor: 5.74.

47. Lee CJ, Kim S, Tecca HR, et al. Late effects after ablative allogeneic stem cell transplantation for adolescent and young adult acute myeloid leukemia. Blood Advances. 2020 Mar 24; 4(6):983-992. doi:10.1182/bloodadvances.2019001126. Epub 2020 Mar 13. PMC7094022. Impact factor: 4.6.

48. Hamadani M, Zhang MJ, Tang X-Y, et al. Graft cryopreservation does not impact overall survival allogeneic hematopoietic cell transplantation using post-transplant cyclophosphamide for GVHD prophylaxis. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.04.001. Epub 2020 Apr 10. Impact factor: 3.9.

49. Costa LJ, Iacobelli S, Pasquini MC, et al. Long-term survival of 1338 MM patients treated with tandem autologous vs. autologous-allogeneic transplantation Bone Marrow Transplantation. doi:10.1038/s41409-020-0887-4. Epub 2020 Apr 14. Impact factor: 4.7.

50. Ahmed S, Ghosh N, Ahn KW, et al. Impact of type of reduced?intensity conditioning regimen on the outcomes of allogeneic haematopoietic cell transplantation in classical Hodgkin lymphoma. British Journal of Haematology. doi:10.1111/bjh.16664. Epub 2020 Apr 21. Impact factor: 5.5.

51. Salit RB, Lee SJ, Burns LJ, et al. Return-to-work guidelines and programs for post-hematopoietic cell transplant survivors: An initial survey. Biology of Blood and Marrow Transplantation:

Journal of the American Society for Blood and Marrow Transplantation. 2020 Aug 1; 26(8):1520-1526. doi:10.1016/j.bbmt.2020.04.022. Epub 2020 Apr 29. Impact factor: 3.9.

52. Farhadfar N, Murthy HS, Logan BR, et al. Impact of autologous blood transfusion after bone marrow harvest on unrelated donor?s health and outcome: A CIBMTR analysis. Bone Marrow Transplantation. doi:10.1038/s41409-020-0911-8. Epub 2020 Apr 30. Impact factor: 4.7.

53. Mehta RS, Holtan SG, Wang T, et al. Composite GRFS and CRFS outcomes after adult alternative donor HCT. Journal of Clinical Oncology. 2020 Jun 20; 38(18):2062-2076. doi:10.1200/JCO.19.00396. Epub 2020 May 4. PMC7302955. Impact factor: 32.9.

54. Eapen M, Zhang M-J, Tang X-Y, et al. Hematopoietic cell transplantation with cryopreserved grafts for severe aplastic anemia. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Jul 1; 26(7):e161-e166. doi:10.1016/j.bbmt.2020.04.027. Epub 2020 May 7. PMC7206419. Impact factor: 3.9.

55. Gowin K, Ballen K, Ahn KW, et al. Survival following allogeneic transplant in patients with myelofibrosis. Blood Advances. 2020 May 12; 4(9):1965-1973. doi:10.1182/bloodadvances.2019001084. Epub 2020 May 8. PMC7218417. Impact factor: 4.6.

56. D'Souza A, Fretham C, Lee SJ, et al. Current use and trends in hematopoietic cell transplantation in the United States. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Aug 1; 26(8):e177-182. doi:10.1016/j.bbmt.2020.04.013. Epub 2020 May 11. Impact factor: 3.9.

57. Kahn JM, Brazauskas R, Tecca HR, et al. Subsequent neoplasms and late mortality in children undergoing allogeneic transplantation for nonmalignant diseases. Blood Advances. 2020 May 12; 4(9):2084-2094. doi:10.1182/bloodadvances.2019000839. Epub 2020 May 12. PMC7218429. Impact factor: 4.6.

58. Myers K, Hebert K, Antin J, et al. Hematopoietic stem cell transplantation for Shwachman-Diamond syndrome. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Aug 1; 26(8):1446-1451. doi:10.1016/j.bbmt.2020.04.029. Epub 2020 May 16. PMC7371524. Impact factor: 3.9.

59. Im A, Rashidi A, Wang T, et al. Risk factors for graft-versus-host disease in haploidentical hematopoietic cell transplantation using post-transplant cyclophosphamide. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. 2020 Aug 1; 26(8):1459-1468. doi:10.1016/j.bbmt.2020.05.001. Epub 2020 May 17. Impact factor: 3.9.

60. Nikiforow S, Mansour M, Hu Z-H, et al. Tocilizumab not associated with increased infection risk after CAR T-cell therapy: implications for COVID-19? Blood. 2020 Jul 2; 136(1):137-139. doi:10.1182/blood.2020006216. Epub 2020 May 25. PMC7332891. Impact factor: 17.5.

61. Arnold SD, Brazauskas R, He N, et al. The impact of donor type on outcomes and cost of allogeneic hematopoietic cell transplant for pediatric leukemia: a merged CIBMTR and PHIS analysis: Pediatric acute leukemia transplant risks and utilization. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.05.016. Epub 2020 May 25. Impact factor: 3.9.

62. Petersdorf EW, Stevenson P, Bengtsson M, et al. HLA-B leader and survivorship after HLA-mismatched unrelated donor transplantation. Blood. 2020 Jul 16; 136(3):362-369. doi:10.1182/blood.2020005743. Epub 2020 Jun 1. Impact factor: 17.5.

63. Petersdorf EW, Bengtsson M, De Santis D, et al. Role of HLA-DP expression in graft-versus-host disease after unrelated donor transplantation. Journal of Clinical Oncology. doi:10.1200/JCO.20.00265. Epub 2020 Jun 1. Impact factor: 32.9.

64. Solomon SR, Martin AS, Zhang MJ, et al. Optimal donor for African Americans with hematologic malignancy: HLA-haploidentical relative or umbilical cord blood transplant. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.06.029. Epub 2020 Jul 7. Impact factor: 3.9.

65. Chhabra S, Visotcky A, Pasquini MC, et al. Ixazomib for chronic graft-versus-host disease prophylaxis following allogeneic hematopoietic cell transplantation. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.07.005. Epub 2020 Jul 9. Impact factor: 3.9.

66. Zhou Z, Nath R, Cerny J, et al. Reduced intensity conditioning for acute myeloid leukemia using melphalan- vs busulfan-based regimens: A CIBMTR report. Blood Advances. 2020 Jul 14; 4(13):3180-3190. doi:10.1182/bloodadvances.2019001266. Epub 2020 Jul 14. PMC7362362. Impact factor: 4.6.

67. Hu B, Lin X, Lee HC, et al. Timing of allogeneic hematopoietic cell transplantation (alloHCT) for chronic myeloid leukemia (CML) patients. Leukemia & Lymphoma. doi:10.1080/10428194.2020.1783444. Epub 2020 Jul 14. 32662346. Impact factor: 2.8.

68. Algwaiz G, Aljurf M, Koh M, et al. Real-world issues and potential solutions in HCT during the COVID-19 pandemic: Perspectives from the WBMT and the CIBMTR's Health Services and International Studies Committee. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.07.021. Epub 2020 Jul 24. PMC7380217. Impact factor: 3.9.

69. Nazha A, Hu Z-H, Wang T, et al. A personalized prediction model for outcomes after allogeneic hematopoietic cell transplant in myelodysplastic syndromes patients. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.08.003. Epub 2020 Aug 8. Impact factor: 3.9.

70. Costa LJ, Derman BA, Bal S, et al. International harmonization in performing and reporting minimal residual disease assessment in multiple myeloma trials. Leukemia. doi:10.1038/s41375-020-01012-4. Epub 2020 Aug 11. Impact factor: 8.6.

71. Myllymäki M, Redd R, Reilly CR, et al. Short telomere length predicts non-relapse mortality after stem cell transplantation for myelodysplastic syndrome. Blood. doi:10.1182/blood.2020005397. Epub 2020 Aug 17. Impact factor: 17.5.

72. George G, Martin AS, Chhabra S, et al. The effect of G-CSF use on hospital length of stay after an allogeneic hematopoietic cell transplantation: A retrospective multicenter cohort study. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.08.013. Epub 2020 Aug 18. Impact factor: 3.9.

73. Switzer GE, Bruce JG, Kiefer D, et al. Health-related quality-of-life comparison of adult related and unrelated HSC donors: An RDSafe study. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.08.016. Epub 2020 Aug 20. Impact factor: 3.9.

74. Cowan AJ, Baldomero H, Atsuta Y, et al. The global state of hematopoietic cell transplantation for multiple myeloma: An analysis of the Worldwide Network of Blood and Marrow Transplantation (WBMT) Database and the Global Burden of Disease Study. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.08.018. Epub 2020 Aug 23. Impact factor: 3.9.

75. Hagen P, D'Souza A, Hari P, et al. Busulfan, melphalan, and bortezomib compared to melphalan as a high dose regimen for autologous hematopoietic stem cell transplantation in multiple myeloma: Long term follow up of a novel high dose regimen. Leukemia & Lymphoma. doi:10.1080/10428194.2020.1811275. Epub 2020 Aug 31. Impact factor: 2.8.

76. Fuchs E, O'Donnell P, Eapen M, et al. Double unrelated umbilical cord blood versus HLA-haploidentical bone marrow transplantation (BMT CTN 1101) Blood. doi:10.1182/blood.2020007535. Epub 2020 Aug 31. Impact factor: 17.5.

77. Dhakal B, Wang T, Kuxhausen M, et al. Prognostic Impact of Serum CXC Chemokine Ligands 4 and 7 on Myelodysplastic Syndromes Post Allogeneic Hematopoietic Cell Transplant Leukemia & Lymphoma. doi:10.1080/10428194.2020.1817446. Epub 2020 Sep 13. Impact factor: 2.8.

78. Bal S, Costa LJ, Sauter C, et al. Outcomes of autologous hematopoietic cell transplantation in diffuse large B-cell lymphoma refractory to first line chemoimmunotherapy. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.09.004. Epub 2020 Sep 16. Impact factor: 3.9.

79. Epperla N, Ahn KW, Khanal M, et al. Impact of reduced-intensity conditioning regimens on outcomes in diffuse large B-cell lymphoma undergoing allogeneic transplantation. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.09.014. Epub 2020 Sep 19. Impact factor: 3.9.

80. Badar T, Hari P, Dávila O, et al. African Americans with translocation t(11;14) have superior survival after autologous hematopoietic cell transplantation for multiple myeloma in comparison with Whites in the United States. Cancer. doi:10.1002/cncr.33208. Epub 2020 Sep 23. Impact factor: 5.7.

81. Munshi PN, Vesole D, Jurczyszyn A, et al. Age no bar: A CIBMTR analysis of elderly patients undergoing autologous hematopoietic cell transplantation for multiple myeloma. Cancer. doi:10.1002/cncr.33171. Epub 2020 Sep 23. Impact factor: 5.7.

82. Bejanyan N, Zhang M, Bo-Subait K, et al. Myeloablative conditioning for allogeneic transplantation results in superior disease-free survival for acute myeloid leukemia and myelodysplastic syndromes with low/intermediate, but not high disease risk index: A CIBMTR study: Superior DFS with MAC compared to RIC HCT in AML/MDS with low/intermediate risk DRI. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.09.026. Epub 2020 Oct 1. Impact factor: 3.9

83. Gadalla SM, Wang Y, Wang T, et al. Association of donor IFNL4 genotype and non-relapse mortality after unrelated donor myeloablative haematopoietic stem-cell transplantation for acute leukaemia: A retrospective cohort study. The Lancet Haematology. 7(10):e715-e723. doi:10.1016/S2352-3026(20)30294-5. Epub 2020 Oct 1. PMC7735535. Impact factor: 10.4

84. Gupta V, Kim S, Hu Z-H, et al. Comparison of outcomes of HCT in blast phase of BCR-ABL1-MPN with de novo AML and with AML following MDS. Blood Advances. 2020 Oct 13; 4(19):4748-4757. doi:10.1182/bloodadvances.2020002621. Epub 2020 Oct 2. PMC7556156. Impact factor: 4.6

85. Kim S, Logan B, Riches M, et al. Tatistical methods for time-dependent variables in hematopoietic cell transplantation studies. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.09.034. Epub 2020 Oct 2. Impact factor: 4.7

86. Fahadfar N, Burns LJ, Mupfudze T, et al. Hematopoietic Cell Transplantation Predictions for the Year 2023 Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.10.006. Epub 2020 Oct 9. PMC7546661. Impact factor: 3.9

87. Roe D, Williams J, Ivery K, et al. Efficient sequencing, assembly, and annotation of human KIR haplotypes. Frontiers in Immunology. 11:582927. doi:10.3389/fimmu.2020.582927. Epub 2020 Oct 9. PMC7581912. Impact factor: 6.4

88. Dehn J, Chitphakdithai P, Shaw BE, et al. Likelihood of proceeding to allogeneic hematopoietic cell transplantation in the United States after search activation in the National Registry: Impact of patient age, disease and search prognosis. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.10.004. Epub 2020 Oct 10. Impact factor: 3.9

89. Camacho-Bydume C, Wang T, Sees JA, et al. Specific class I HLA supertypes but not HLA zygosity or expression are associated with outcomes following HLA-matched allogeneic hematopoietic cell transplant: HLA supertypes impact allogeneic HCT outcomes. Biology of Blood and Marrow Transplantation: Journal of the American Society for Blood and Marrow Transplantation. doi:10.1016/j.bbmt.2020.10.010. Epub 2020 Oct 11. Impact factor: 4.7

90. Hong S, Brazauskas R, Hebert KM, et al. Community health status and outcomes after allogeneic hematopoietic cell transplantation in the United States. Cancer. doi:10.1002/cncr.33232. Epub 2020 Oct 21. Impact factor: 5.7

91. Dhakal B, D'Souza A, Callander N, et al. Novel prognostic scoring system for autologous hematopoietic cell transplantation in multiple myeloma. British Journal of Haematology. 2020 Nov 20; 191(3):442-452. doi:10.1111/bjh.16987. Epub 2020 Oct 23. Impact factor: 5.5

92. Bona K, Brazauskas R, He N, et al. Neighborhood-poverty and pediatric allogeneic hematopoietic cell transplantation outcomes: A CIBMTR analysis. Blood. doi:10.1182/blood.2020006252. Epub 2020 Oct 26. Impact factor: 17.5

93. Shah NN, Ahn KW, Litovich C, et al. Is autologous transplant in relapsed DLBCL patients achieving only a PET+ PR appropriate in the CAR-T cell era? Blood.

doi:10.1182/blood.2020007939. Epub 2020 Oct 29. Impact factor: 17.5

94. Pasquini MC, Hu Z-H, Curran K, et al. Real-world evidence of tisagenlecleucel for pediatric acute lymphoblastic leukemia and non-Hodgkin lymphoma. Blood Advances. 2020 Nov 10; 4(21):5414-5424. doi:10.1182/bloodadvances.2020003092. Epub 2020 Nov 4. PMC7656920. Impact factor: 4.6

95. Single RM, Meyer D, Nunes K, et al. Demographic history and selection at HLA loci in Native Americans. PLoS One. 15(11):e0241282. doi:10.1371/journal.pone.0241282. Epub 2020 Nov 4. PMC7641399. Impact factor: 2.7

96. Qayed M, Ahn KW, Kitko CL, et al. A validated pediatric disease risk index for allogeneic hematopoietic cell transplantation. Blood. doi:10.1182/blood.2020009342. Epub 2020 Nov 18. Impact factor: 17.5

97. Martens, MJ, Logan, B. A unified approach to sample size and power determination for testing parameters in generalized linear and time-to-event regression models. Statistics in Medicine. doi:10.1002/sim.8823. Epub 2020 Nov 18. Impact factor: 1.8

98. Roe D, Vierra-Green C, Pyo C-W, et al. A detailed view of KIR haplotype structures and gene families as provided by a new motif-based multiple sequence alignment. Frontiers in Immunology. 11:585731. doi:10.3389/fimmu.2020.585731. Epub 2020 Nov 18. PMC7708349. Impact factor: 6.4

99. Gupta V, Kennedy JA, Capo-Chichi J-M, et al. enetic factors rather than blast reduction determine outcomes of allogeneic HCT in BCR-ABL?negative MPN in blast phase. Blood Advances. 2020 Nov 20; 4(21):5562-5573. doi:10.1182/bloodadvances.2020002727. Epub 2020 Nov 20. PMC7656913. Impact factor: 4.6