

Blood and Marrow Transplant

Five Things Clinicians and Patients Should Question

by

American Society for Transplantation and Cellular Therapy

Cell Therapy Transplant Canada

Last updated: January 2020



1 Don't routinely use peripheral blood stem cells for patients with aplastic anemia when a suitable bone marrow donor is available due to a higher risk of graft-versus-host disease.

While faster engraftment with filgrastim-mobilized peripheral blood stem cells results in quicker recovery of peripheral blood counts compared to bone marrow in patients with aplastic anemia, the higher rate of graft-versus-host disease may be detrimental.

2 Don't use greater than 2 mg/kg/day of methylprednisolone (or equivalent) for the initial treatment of graft-versus-host disease.

Published studies have shown no advantage to using methylprednisolone-equivalent doses higher than 2 mg/kg/day in acute graft-versus-host disease. In addition, using higher doses increases risks of corticosteroid related toxicity. Furthermore, at least in patients with grade I-II acute graft-versus-host disease, initial therapy with lower-dose corticosteroids at 1 mg/kg/day may be equivalent.

3 Don't routinely use two cord blood units for standard umbilical cord blood transplantation when a single unit of adequate size is available, recognizing that higher cell doses are preferred when using units with greater HLA mismatch.

Randomized trials demonstrate similar clinical outcomes after single-unit and double-unit umbilical cord blood transplantation, including comparable rates of relapse, engraftment failure, overall survival, and transplantation related mortality. Moreover, graft-versus-host disease may be more frequent after double-cord blood transplantation.

4 Don't routinely use peripheral blood stem cells for matched unrelated donor transplantation using myeloablative conditioning and standard graft-versus-host disease prevention regimens when a suitable bone marrow donor is available.

Patients undergoing myeloablative matched unrelated donor hematopoietic cell transplantation with standard graft-versus-host disease prophylaxis (calcineurin inhibitor and methotrexate) with a peripheral blood stem cell graft experience more symptomatic chronic graft-versus-host disease than those receiving bone marrow, without affecting relapse rates or overall survival. Peripheral blood stem cells may be considered in cases with substantial recipient/donor size discrepancy, donor preference, and for malignant diseases with high risk for graft failure.

5 Don't routinely give immunoglobulin replacement to adult hematopoietic cell transplantation recipients in the absence of recurrent infections regardless of the IgG level.

Meta-analyses of controlled trials conclude that immunoglobulin replacement offers no advantage for infection prevention and overall survival, and may predispose to a higher risk of hepatic sinusoidal obstruction syndrome, venous thromboembolism, and impair the efficacy of post-transplant vaccinations. There may be subsets of patients where prophylactic immunoglobulin replacement may be considered, such as in umbilical cord blood transplant recipients, in children undergoing transplantation for inherited or acquired disorders associated with B-cell deficiency, and in chronic graft-versus-host disease patients with recurrent sino-pulmonary infections.

How the list was created

The American Society for Transplantation and Cellular Therapy (ASTCT) and Cell Therapy Transplant Canada (CTTC) established a Choosing Wisely BMT Task Force whose objective was to create a list of top five practices in blood and marrow transplantation to be questioned. The Task Force consisted of representatives from ASTCT's Quality Outcomes, Education, and Practice Guidelines Committees, ASTCT's Pharmacy Special Interest Group, CTTC Program Directors, and Center for International Blood and Marrow Transplant Research (CIBMTR). Suggestions for current transplantation practices to question were elicited from the CTTC Program Directors, members of ASTCT's Quality Outcomes, Practice Guidelines and Education committees, and chairs of the CIBMTR scientific working committees. Suggestions were ranked based on their potential impact on harm reduction, cost reduction, necessity of the test or practice, and the strength of available evidence. Through a modified Delphi process, suggestions were narrowed down to six, which were then subjected to systematic reviews. After further discussion by the Task Force, the final five recommendations were generated.

Sources

- 1 Killick SB, et al. Guidelines for the diagnosis and management of adult aplastic anaemia. *Br J Haematol*. 2016 Jan; 172(2):187-207. PMID: [26568159](#).
Barone A, et al. Diagnosis and management of acquired aplastic anemia in childhood. Guidelines from the Marrow Failure Study Group of the Pediatric Haemato-Oncology Italian Association (AIEOP). *Blood Cells Mol Dis*. 2015 Jun;55(1):40-7. PMID: [25976466](#).
- 2 Martin PJ, et al. First- and second-line systemic treatment of acute graft-versus-host disease: recommendations of the American Society of Blood and Marrow Transplantation. *Biol Blood Marrow Transplant*. 2012 Aug;18(8):1150-63. PMID: [22510384](#).
- 3 Wagner JE, et al. One-unit versus two-unit cord-blood transplantation for hematologic cancers. *N Engl J Med*. 2014 Oct 30;371(18):1685-94. PMID: [25354103](#).
Hough R, et al. Recommendations for a standard UK approach to incorporating umbilical cord blood into clinical transplantation practice: an update on cord blood unit selection, donor selection algorithms and conditioning protocols. *Br J Haematol*. 2016 Feb;172(3):360-70. PMID: [26577457](#).
- 4 Anasetti C, et al. Peripheral-blood stem cells versus bone marrow from unrelated donors. *N Engl J Med*. 2012 Oct 18;367(16):1487-96. PMID: [23075175](#).
Lee SJ, et al. Comparison of Patient-Reported Outcomes in 5-Year Survivors Who Received Bone Marrow vs Peripheral Blood Unrelated Donor Transplantation: Long-term Follow-up of a Randomized Clinical Trial. *JAMA Oncol*. 2016 Dec 1;2(12):1583-1589. PMID: [27532508](#).
- 5 Tomblyn M, et al. Guidelines for preventing infectious complications among hematopoietic cell transplantation recipients: a global perspective. *Biol Blood Marrow Transplant*. 2009 Oct;15(10):1143-238. PMID: [19747629](#).
Raanani P, Gafter-Gvili A, Paul M, Ben-Bassat I, Leibovici L, Shpilberg O. Immunoglobulin prophylaxis in hematopoietic stem cell transplantation: systematic review and meta-analysis. *J Clin Oncol*. 2009 Feb 10;27(5):770-81. PMID: [19114702](#).

About the American Society for Transplantation and Cellular Therapy

The American Society for Transplantation and Cellular Therapy (ASTCT) is an international professional membership association of physicians, investigators and other healthcare professionals involved in blood and marrow transplantation and novel cellular therapies. The ASTCT represents the interests of transplant clinicians and investigators and the patients they serve in eight broad areas: research, representation, clinical standards, regulation, communications, accreditation, reimbursement, and recruiting and training clinical personnel.



About Cell Therapy Transplant Canada

Cell Therapy Transplant Canada (CTTC), formerly Canadian Blood and Marrow Transplant Group, is a member-led, national, multidisciplinary organization providing leadership and promoting excellence in patient care, research and education in the field of hematopoietic stem cell transplant and cellular therapy.



About Choosing Wisely Canada

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care. One of its important functions is to help clinicians and patients engage in conversations that lead to smart and effective care choices.

🌐 ChoosingWiselyCanada.org | ✉ info@ChoosingWiselyCanada.org | 🐦 [@ChooseWiselyCA](https://twitter.com/ChooseWiselyCA) | 📺 [/ChoosingWiselyCanada](https://www.facebook.com/ChoosingWiselyCanada)