



Mismatched Unrelated Donor Transplantation with Ptcy-Based Gvhd Prophylaxis Is Associated with Better Survival Than Double Unit Umbilical Cord Blood Transplantation in Patients with AML in First CR: A Study from the ALWP of the EBMT

Frederic Baron MD PhD¹, Myriam Labopin^{2 3}, Jurjen Versluis MD PhD⁴, Jan Vydra⁵, Peter A. Von Dem Borne MD PhD⁶, Emma Nicholson MD PhD⁷, Didier Blaise⁸, Robinson Stephen Jr.⁹, Kulagin Aleksandr Sr.¹⁰, Claude-Éric Bulabois MD¹¹, Montserrat Rovira MD PhD¹², Patrice Chevallier MD¹³, Édouard Forcade¹⁴, Jenny Louise Byrne MD PhD¹⁵, Jaime Sanz Caballer MDPHD¹⁶, Annalisa Ruggeri MD PhD¹⁷, Mohamad Mohty MDPHD¹⁸, Fabio Ciceri¹⁹

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Disclosures

Baron: ExCellThera Inc: Consultancy; Takeda: Honoraria; Incyte Biosciences: Consultancy. **Versluis:** AbbVie: Honoraria; ExCellThera: Consultancy. **Nicholson:** Kite-Gilead: Honoraria, Membership on an entity's Board of Directors or advisory committees, Research Funding; Novartis: Honoraria, Membership on an entity's Board of Directors or advisory committees. **Blaise:** Jazz Pharmaceuticals: Honoraria. **Bulabois:** ASTELLAS: Speakers Bureau; BMS: Consultancy. **Chevallier:** Incyte: Honoraria, Research Funding; Sanofi: Honoraria; Mallinckrodt Pharmaceuticals: Honoraria; Takeda: Honoraria; Immedica Pharma: Honoraria; Servier: Honoraria. **Forcade:** Sanofi: Speakers Bureau; GSK: Speakers Bureau; Alexion: Other: Travel support, Speakers Bureau; Jazz: Other: Travel support; Gilead Sciences: Other: Travel support, Speakers Bureau; Novartis: Consultancy, Other: Travel support, Speakers Bureau; MSD: Other: Travel support; Astellas: Speakers Bureau. **Mohty:** JAZZ PHARMACEUTICALS: Honoraria, Research Funding. **Ciceri:** ExCellThera: Other: Scientific Advisory Board .

Background: The best donor option for acute myeloid leukemia (AML) patients lacking an HLA-matched donor has remained unknown. The recently reported BNT CTN 1101 trial observed higher non-relapse mortality (NRM) and lower overall survival (OS) in patients randomized to double-unit unrelated umbilical cord blood transplantation (dCBT) in comparison to those randomized to HLA-haploidentical bone marrow transplantation with post-transplant cyclophosphamide (PTCy)-based graft-versus-host disease (GVHD) prophylaxis¹. In addition, recent registry studies observed at least as good transplantation outcomes in AML patients given grafts from 9/10 HLA-matched unrelated donor (UD 9/10) with PTCy-based GVHD prophylaxis as those given grafts from HLA-haploidentical donors^{2,3}. These observations prompted us to perform a retrospective registry study comparing hematopoietic cell transplantation (HCT) outcomes between UD 9/10 and dCBT. **Methods:** Inclusion criteria consisted of adult patient, AML in CR1 at transplantation, either peripheral blood stem cells (PBSC) from UD 9/10 with PTCy as GVHD

prophylaxis or dCBT, transplantation between 2013 and 2021, and no *in vivo* T-cell depletion. **Results:** A total of 208 dCBT patients and 270 UD 9/10 allo-HCT were included. The 180-day cumulative incidence of grade II-IV acute GVHD was 29% in UD 9/10 versus 44% in dCBT recipients ($P=0.001$). The 2-year cumulative incidences of relapse and of NRM were 23.5% and 12.5%, respectively, in UD 9/10 recipients versus 27% ($P=0.39$) and 18% ($P=0.07$), respectively in dCBT recipients. Two-year OS and LFS were 70% and 64%, respectively, in UD 9/10 recipients versus 60% ($P=0.016$) and 55% ($P=0.028$), respectively in dCBT recipients. In multivariate analyses, in comparison with UD 9/10 recipients, dCBT patients had a higher non-relapse mortality ($HR=2.35$, 95% CI: 1.23-4.48; $P=0.01$), comparable relapse incidence ($HR=1.12$, 95% CI: 0.67-1.86; $P=0.66$), lower leukemia-free survival ($HR=1.5$, 95% CI: 1.01-2.23; $P=0.047$), and lower overall survival ($HR=1.66$, 95% CI: 1.08-2.55; $P=0.02$).

Conclusions: In summary, our results suggest that transplantation outcomes are better with UD 9/10 with PTCy-based GVHD prophylaxis than with dCBT for AML patients in CR1. These data might support the use of UD 9/10 with PTCy-based GVHD prophylaxis in AML patients lacking an HLA-matched donor.

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