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Haploidentical SCT as a salvage therapy in hematological malignancies: A single center experience

Olesya V. Paina, Yulia A. Stankevich, Ilya V. Kazantsev, Natalia V. Stancheva, Alla A. Golovacheva, Elena V. Babenko, Alexander L. Alyanskiy, Natalia E. Ivanova, Elena V. Semenova, Petr V. Krugliakov, Dmitriy G. Polyntsev, Ludmila S. Zubarovskaya, Boris V. Afanasyev

Memorial R.M. Gorbacheva Institute of Children Hematology and Transplantation, St. Petersburg
Pavlov State Medical University, St. Petersburg, Russia

Correspondence: Olesya V. Paina, Memorial R.M. Gorbacheva Institute of Children Hematology and Transplantation, St. Petersburg Pavlov State Medical University, 6/8, Tolstoy str., St. Petersburg, 199044, Russia, Phone: +7 (812) 232-8120, E-mail: bmt-registry@spmu.rssi.ru

Abstract

Background: The usage of haploidentical donors is one curative option for patients (pts) with acute leukemias without a donor—related or unrelated—match.

Patients and methods: Twenty-four very high-risk pts underwent haploidentical SCT: ALL – 10 (42%) pts, AML – 11 (44%) pts, JMML – 1pt, CML – 1pt, and resistant neuroblastoma – 1pt. The total number of resistant/in progression pts was 16 (66%), while 8 (33%) pts were in remission. Nineteen (79%) pts were children (aged 1–18), and 5 (21%) were adults (aged 21–47). In each case reduced intensity conditioning regimens (RIC) were used: Flu and ATG with the addition of different alkylating agents (busulphan, melphalan or thiotepa). Sources of HSC-PBSC and bone marrow. For PBSC CD34+ positive selection was performed with CliniMACS. The mean CD34+ count was $12.8x10^6$ /kg (1.6–30.7). In 20 pts aGVHD prophylaxis consisted of CsA and a short course of MTX with or without MMF. In 4 pts tacrolimus and MMF were used. In 2 pts in D-1, mesenchymal stem cells (MSC) from third–party donors were used to prevent aGVHD; while in 3pts, MSC was used for the treatment of aGVHD

Results: The incidence and severity of aGVHD were no greater than in other types of allo-HSCT: 6 (25%) pts had grade III–IV aGVHD with skin and gut involvement and 1 pt died. In the case of MSC usage in the conditioning regimen only aGVHD stage I was observed. The treatment of aGVHD with MSC was successful: of 3pts, 2 achieved CR. The toxicity of the conditioning regimen was acceptable: 6 (25%) developed grade II–III organ toxicity, 5 (21%) pts had invasive aspergillosis, and 8 (33%) pts had CMV reactivation. The 1-year OS was 62%, with median observation terms of 4.6 months (1 to 12 months). Five pts died of relapse and 3 in CR (1pt from infection and another from engraftment and aGVHD of the gut).

Conclusions: Haploidentical HSCT with RIC is characterized by acceptable toxicity, aGVHD control, and stable engraftment. It proved to be a good option for the group of pts with poor prognosis. Randomized clinical trials are necessary for an estimation of the therapeutic effect of MSCs in haploidentical HSCT pts.

Keywords: haplo-SCT, alternative donor source, salvage therapy