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Conference Abstract A11

Outcomes of Allogeneic Hematopoietic Stem Cell Transplantation in Patients with Myelodysplastic Syndromes

N. Tsvetkov[1], M. Krivitskaya[1], T. Rudakova[1], K. Tsvirko[1], T. Gindina[1], Yu. Vlasova[1], E. Morozova[1]

[1]*R.M. Gorbacheva Research Institute of Pediatric Oncology, Hematology and Transplantation, Pavlov First Saint Petersburg State Medical University, Saint Petersburg, Russia*

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Corresponding author's email: zhabagin99@gmail.com

Introduction

Myelodysplastic syndromes are a heterogeneous group of malignant disorders of the hematopoietic system. Allogeneic hematopoietic stem cell transplantation remains, to date, the only curative treatment option. This study presents the experience with allogeneic hematopoietic stem cell transplantation in adult patients with myelodysplastic syndromes at our institution.

Materials and Methods

We performed a retrospective analysis of data from 151 patients with various subtypes of myelodysplastic syndromes according to the 2016 World Health Organization classification. All patients received treatment at our institution between 2008 and 2024. Risk stratification was performed using the Revised International Prognostic Scoring System. Response to therapy was assessed according to the 2006 IWG criteria. We analyzed two-year overall survival, relapse incidence, and non-relapse mortality after allogeneic hematopoietic stem cell transplantation.

Results

A total of 151 patients (81 men and 70 women) were included in the study. The median age at diagnosis was 48 years (range 18–81). High-risk myelodysplastic syndromes were identified in 86 of 135 patients. Eighty-four of 124 patients received treatment with hypomethylating agents. No response to therapy was observed in 49% (61/124) of patients. Twenty-three patients (15%) were unable to undergo transplantation because of disease progression (n = 14) or significant comorbidities (n = 9). The median time from diagnosis to allogeneic transplantation was 11 months (range, 1–112), and the median follow-up after transplantation was 10 months (range, 1–65). Bone marrow blast count before transplantation was below 10% in 94 of 128 patients. Pre-transplantation cytogenetic clonal evolution was observed in 29 of 128 patients. The donor was human leukocyte antigen-matched in 77% of patients, unrelated in 63%, and haploidentical in 7%. Post-transplant cyclophosphamide for graft-versus-host disease prophylaxis was used in 78% of patients. Peripheral blood was used as the stem cell source in 70% of patients. Reduced-intensity conditioning with fludarabine and busulfan was administered to 93% of patients. Two-year overall survival was 49.5%, relapse incidence was 33%, and non-relapse mortality was 24%. Overall survival in patients with a pre-transplantation bone marrow blast count above 10% was 29% compared with 57% ($p < 0.01$) in those with a blast count below 10%. Overall survival in patients with pre-transplantation cytogenetic evolution was 23% compared with 61% ($p < 0.001$) in those without cytogenetic evolution.

Conclusions

Allogeneic hematopoietic stem cell transplantation remains the basic method of therapy for myelodysplastic syndromes, although a substantial proportion of patients experience treatment failure before or after transplantation. There is an urgent need for precise prognostic tools and effective treatment options. Within the context of allogeneic transplantation, issues such as optimal pre-transplant therapy, timing of transplantation, and prevention of post-transplant relapse remain unresolved.