

COMPARISON OF THE OUTCOMES OF ABO BLOOD GROUP COMPATIBLE AND ABO BLOOD GROUP INCOMPATIBLE ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION IN ACUTE MYELOID LEUKEMIA AND MYELODYSPLASTIC SYNDROME PATIENTS

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Introduction: The impact of ABO blood type incompatibility on allo-HSCT outcomes is controversial. In our study, we aimed to compare the post-transplant outcomes of ABO-compatible and ABO-incompatible patients undergoing allo-HSCT with acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS).

Method: 55 adult patients diagnosed with AML or MDS who underwent allo-HSCT at our center between January 2017 and May 2023 were included in the study. All statistical analyses were performed using SPSS version 22.0 software (Chicago, USA). Survival analysis was performed using the Kaplan-Meier method. $P < 0.05$ was considered statistically significant.

Results: Of the 55 patients, 34 (61.8%) were male and 21 (38.2%) were female. The median age at transplantation was 50 years. 49 (89.1%) patients were diagnosed with AML, and 6 (10.9%) were diagnosed with MDS. At the time of transplantation, 46 (83.6%) patients had a complete response, 7 (12.8%) patients had a partial response, and 2 (3.6%) patients had an active disease. Of 41 (74.6%) patients had HLA 10/10 compatible, 10 (18.2%) patients had HLA 9/10 compatible, and 4 (7.2%) patients had haploidentical donors. The median amount of infused CD34-positive stem cells was $4.9 \times 10^6/\text{kg}$. A myeloablative conditioning regimen (MAC) was used in 43 (78.2%) patients, while a reduced-intensity conditioning regimen (RIC) was used in 12 (21.8%) patients. When the ABO-compatible and incompatible groups were compared, there were no significant differences in terms of gender, age, disease diagnosis, pre-transplant disease response status, donor diversity, amount of infused stem cells, and conditioning regimen. When the two groups were compared in terms of post-transplant outcomes, the time to platelet engraftment was significantly longer in the ABO-incompatible group ($P=0.032$). The rate of patients developing CMV viremia was significantly higher in the ABO-compatible group ($P=0.016$). There were no statistically significant differences between the two groups in terms of neutrophil engraftment time, length of hospital stays, acute GVHD, or survival rate. The 5-year OS rate was higher in the ABO blood type compatible group but did not reach statistical significance (47.1% vs 23.8, $P=0.216$).

Discussion: The ABO-incompatible group had a longer platelet engraftment time, and CMV viremia was less common in this group. While the 5-year OS rate was longer the ABO-compatible group, it did not reach statistical significance.