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723.ALLOGENEIC TRANSPLANTATION: LONG-TERM FOLLOW-UP AND DISEASE RECURRENCE

Risk Factors for Positive Posttransplantation Measurable Residual Disease in Patients with Acute Lymphoblastic Leukemia

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Background: The level of MRD before and after transplantation is related to inferior transplant outcomes, and post-hematopoietic stem cell transplantation measurable residual disease (post-HSCT MRD) has higher prognostic value in determining risk than pre-HSCT MRD. However, no work has been devoted to the risk factors for positive post-HSCT MRD in patients with ALL. This study evaluated the risk factors for post-HSCT MRD positivity in patients with acute lymphoblastic leukemia (ALL) who underwent allogeneic HSCT (allo-HSCT).
Methods: A total of 1683 ALL patients were enrolled. Cox proportional hazard regression models were built for time-to-event outcomes. Multivariate analysis was performed to determine independent influencing factors from the univariate analysis.
Results: Both in total patients and in T-ALL or B-ALL, pediatric or adult, HLA-matched sibling donor transplantation or haploidentical HSCT subgroups, positive pre-HSCT MRD was a risk factor for post-HSCT MRD positivity ($P < 0.001$ for all). Disease status was also a risk factor for post-HSCT MRD positivity in all patients and in the B-ALL, pediatric, or haploidentical SCT subgroups ($P = 0.003$; $P = 0.035$; $P = 0.003$, respectively). A risk score for post-HSCT MRD positivity was developed using the variables pre-HSCT MRD and disease status. The cumulative incidence of post-HSCT MRD positivity was 12.3%, 25.1%, and 38.8% for subjects with scores of 0, 1, and 2-3, respectively ($P < 0.001$). Multivariate analysis confirmed the association of the risk score with the cumulative incidence of post-HSCT MRD positivity and relapse as well as LFS and OS.
Conclusion: Our results indicated that positive pre-MRD and disease status were two independent risk factors for post-HSCT MRD positivity in patients with ALL who underwent allogeneic HSCT.

Disclosures No relevant conflicts of interest to declare.

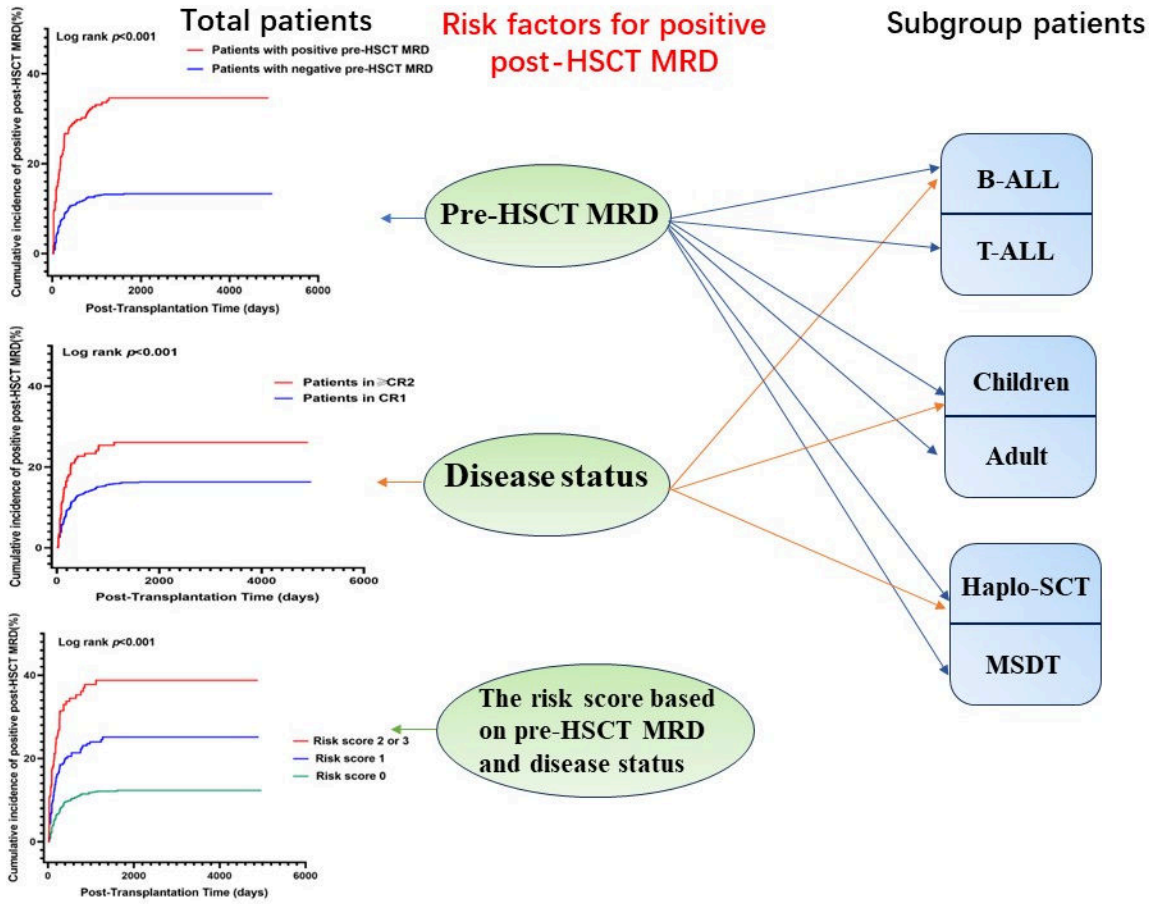

Figure 1

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