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POSTER ABSTRACTS

732.ALLOGENEIC TRANSPLANTATION: DISEASE RESPONSE AND COMPARATIVE TREATMENT STUDIES

MRD Positivity Was the Poor Prognostic Factor for Adverse-Risk AML Patients with Allogeneic Hematopoietic Stem Cell Transplantation: A Multicenter Trohpy Study

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Background: Allogeneic hematopoietic stem cell transplantation (allo-HSCT) is recommended for acute myeloid leukemia (AML) patients with adverse-risk. However, when patients within this group would proceed to allo-HSCT is controversial. We aimed to identify the optimal timepoint for allo-HSCT for adverse-risk AML patients.
Methods: This is a multicenter, retrospective designed study, based on the transplant database of Wuhan Tongji Hospital, Shanghai Ruijin Hospital, and Peking University Institute of Hematology (PUIH) (TROPHY group). Consecutive AML patients receiving allo-HSCT from January 2017 to June 2022 were screened, and the eligibility criteria were as followed: (1) aged ≥ 16 years; (2) adverse-risk AML based on ELN 2022 criteria; (3) achieving CR1 before allo-HSCT. The last follow-up was June 30, 2023. MRD status was monitored after the first consolidation chemotherapy ($MRDc_1$), after the second consolidation chemotherapy ($MRDc_2$), before allo-HSCT (MRD_{bft}), and at 1, 2, 3, 4.5, 6, 9, and 12 months after allo-HSCT and at 6-month intervals thereafter. 0.1% was used as a threshold to distinguish MRD-positivity detected by multiparameter flow cytometry (MFC). The study was approved by the institutional review board of each participated hospital and was conducted in accordance with the Declaration of Helsinki.
Results: A total of 391 adverse-risk AML patients were enrolled. 114 patients showed MRDc1 positivity. The 2-year probability of relapse, leukemia-free survival (LFS), and overall survival (OS) after allo-HSCT was 26.9% (95% CI: 18.1%-35.7%) *vs.* 9.4% (95% CI: 5.2%-13.6%) ($P < 0.001$), 60.7% (95% CI: 51.7%-71.1%) *vs.* 81.5% (95% CI: 76.3%-87.1%) ($P < 0.001$), and 74.4% (95% CI: 66.3%-83.3%) *vs.* 88.6% (95% CI: 84.4%-93.0%) ($P < 0.001$), respectively, for patients with $MRDc_1$ positivity and $MRDc_1$ negativity. Among patients with $MRDc_1$ positivity (n = 69), 24 (34.8%) turned MRD negativity after second consolidation therapy ($MRDc_2$ negativity). The similar trends were observed in patients with $MRDc_2$ positivity. The 2-year probability of relapse, LFS, and OS after allo-HSCT was 26.4% (95% CI: 18.1%-34.7%) *vs.* 9.4% (95% CI: 5.4%-13.3%) ($P < 0.001$), 61.2% (95% CI: 52.8%-71.0%) *vs.* 81.6% (95% CI: 76.6%-87.0%) ($P < 0.001$), and 75.6% (95% CI: 68.3%-83.8%) *vs.* 87.6% (95% CI: 83.3%-92.0%) ($P < 0.001$), respectively, for patients with MRD_{bft} positivity and MRD_{bft} negativity. Maintenance therapy provided better protection from relapse than preemptive therapy. In multivariate analysis, $MRDc_1$ positivity was associated with poorer LFS, $MRDc_2$ positivity was associated with a higher risk of relapse, and MRD_{bft} positivity was associated with worse EFS after allo-HSCT.
Conclusion: For the adverse-risk AML patients according to ELN2022 criteria, MRD is still the most important prognostic index for survival. Patients who achieved MRD negativity after the first consolidation chemotherapy could get similar clinical outcomes compared with those who achieved MRD negativity after the additional rounds of consolidation.

Disclosures No relevant conflicts of interest to declare.

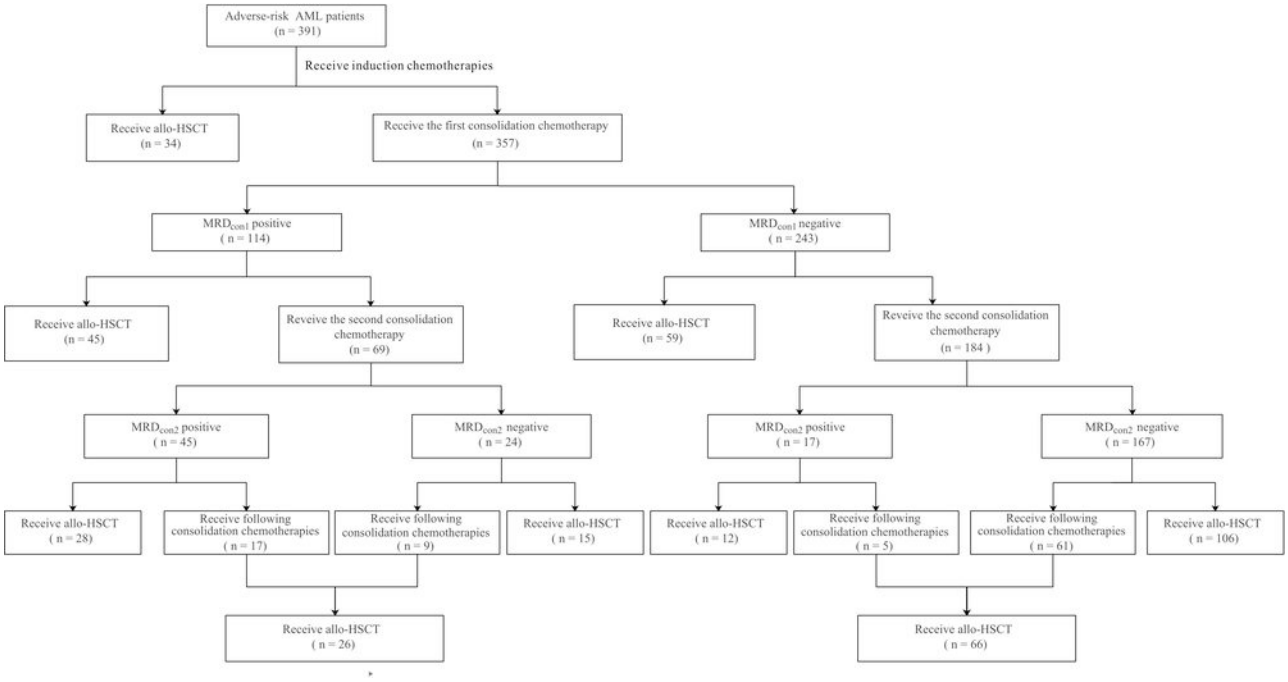

Figure 1

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