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POSTER ABSTRACTS

613.ACUTE MYELOID LEUKEMIAS: CLINICAL AND EPIDEMIOLOGICAL

Comparison of Autologous, Matched Sibling, and Alternative Donor Stem Cell Transplant Outcomes for Acute Myeloid Leukemia Patients in First Remission: A Propensity Score Matching Study

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Introduction
Autologous hematopoietic stem cell transplantation (auto-HSCT), matched sibling donor HSCT (MSD-HSCT), and alternative donor HSCT (AD-HSCT) are viable post-remission treatment options for acute myeloid leukemia (AML). Auto-HSCT is more commonly administered in favorable- and intermediate-risk AML with good remission, while MSD-HSCT and AD-HSCT are suggested for patients with high-risk factors. In the present study, we aim to retrospectively compared auto-HSCT with MSD-HSCT and AD-HSCT in de novo AML patients who are in first complete remission (CR1) with favorable or intermediate risk, according to 2022 ELN criteria.
Methods
We conducted a single-center retrospective comparative analysis, comparing auto-HSCT and allo-HSCT for favorable and intermediate-risk de novo AML in CR1. Patients with secondary AML, acute promyelocytic leukemia, poor-risk AML, those receiving syngeneic HSCT, those not in CR1 before HSCT, or those who achieved CR1 with $\geq$ 3 cycles of induction chemotherapy were excluded from the study. A total of 283 de novo favorable- and intermediate-risk AML patients, based on the ELN 2022 criteria, in first complete remission were initially included for propensity score matching. Persistent undetectable MRD (uMRD) was defined as uMRD after one course of chemotherapy without recurrent positive MRD before HSCT, while non-persistent uMRD was characterized by the presence of detectable MRD at least once before HSCT. The variables used for propensity score matching included induction chemotherapy cycles, consolidation chemotherapy cycles, and measurable residual disease (MRD) measurement by flow cytometer before HSCT. A caliper width of 0.2 was used. Following the matching process, 126 patients were selected for further analysis, with 42 patients in each of the auto-HSCT, MSD-HSCT, and AD-HSCT groups.
Results
After applying propensity score matching, a final cohort of 126 patients was available for analysis. This cohort consisted of 42 patients in each group: auto-HSCT, MSD-HSCT, and AD-HSCT. Among the AD-HSCT group, 38 of 42 (90.5%) patients received haploidentical HSCT (haplo-HSCT). All patients received myeloablative conditioning regimen. There were no significant differences observed in the 3-year overall survival (OS) and disease-free survival (DFS) among the auto-HSCT, MSD-HSCT, and AD-HSCT groups [3-year OS: 79.5% (95% CI, 67.8-93.3%), 83.0% (95% CI, 72.2-95.3%), and 65.7% (95% CI, 50.5-85.5%), respectively; P=0.21. 3-year DFS: 72.6% (95% CI, 59.9-87.9%), 83.0% (95% CI, 72.2-95.3%), and 67.5% (95% CI, 54.2-84.1%), respectively; P=0.32]. The cumulative incidence of 3-year NRM was 2.7% (95% CI, 2.0-12.5%), 7.3% (95% CI, 1.8-17.9%), and 21.9% (95% CI, 10.7-35.6%), respectively (P=0.008). The 1-year probability of OS after relapse was higher in the auto-HSCT group (44.4%; 95% CI, 21.4-92.3%) compared with MSD-HSCT (0.0%) and AD-HSCT (37.5%; 95% CI, 8.4-99.9%) (P=0.0017).
The MRD status before HSCT had an impact on DFS (persistent uMRD versus non-persistent uMRD: HR=0.29; 95% CI 0.09-0.94, P=0.04) and relapse (persistent uMRD versus non-persistent uMRD: HR=0.17; 95% CI 0.05-0.66, P=0.01) following auto-HSCT. The subgroup analysis was then performed based on MRD status before HSCT. In patients with uMRD before transplant (n=83), OS was similar across the groups. However, auto-HSCT showed a trend of increased DFS compared to AD-HSCT (HR 2.85, P=0.09), resulting in a 3-year DFS and OS of 79.1% and 82.8%, respectively. In the non-persistent uMRD group (n=38), auto-HSCT exhibited a tendency to increase the risk of relapse, particularly when compared to AD-HSCT (HR 0.24, P=0.07),

but this did not result in inferior OS. The monthly direct medical cost per patient within the first two years after HSCT was significantly lower in auto-HSCT compared to MSD-HSCT (P=0.015) and AD-HSCT (P<0.001).

Conclusions

Our results provide evidence for the use of auto-HSCT as a viable therapeutic option for favorable- and intermediate-risk de novo AML patients in first complete remission with persistent uMRD. Additionally, our findings demonstrated a notable cost advantage associated with auto-HSCT compared to MSD-HSCT and AD-HSCT.

Disclosures No relevant conflicts of interest to declare.

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