(PS1481) SECOND INDUCTION CYCLE BEFORE ALLOHSCT DOES NOT IMPROVE SURVIVAL IN ADVERSE-RISK AML PATIENTS IN COMPLETE REMISSION AFTER FIRST INDUCTION

Topic: 04. Acute myeloid leukemia - Clinical

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Background

Patients with adverse risk acute myeloid leukemia (AML) have poor prognosis, mainly due to the high rate of relapse. Allogeneic stem cell transplantation (alloHSCT) is considered the only curative treatment for these patients. However, the optimal number of chemotherapy induction cycles before transplantation remains under debate. While two cycles are considered standard of care in many European countries, for patients achieving morphologic complete remission (CR) after the first induction cycle (C1), a second course (C2) may increase morbidity and delay time to transplant with higher risk of relapse.

Aims

We aim to investigate whether adverse risk AML patients achieving CR after C1 have different outcomes when receiving immediate alloHSCT (C1Allo) compared to a second induction cycle (C2Allo) prior to alloHSCT.

Methods

We conducted a retrospective study comparing two cohorts by propensity score matched (PSM) analysis, including adult patients (≥18 years) with adverse risk AML according to ELN2017/2022 guidelines at the time of treatment. The treatment cohort (C1Allo) consisted of patients from multiple European centers who were transplanted in CR after C1. These patients were matched to the control group (C2Allo) consisting of patients from the HOVON102 and HOVON132 trials, who were also in CR after C1 and received a second course of induction chemotherapy, with the intent to proceed to alloHSCT. One-to-one nearest neighbor PSM matching was based on age, TP53 mutation, complex karyotype, and estimated HCT-CI score based on comorbidities, all of which are associated with survival outcomes. Primary endpoints were overall survival (OS), cumulative incidence of relapse (CIR), and non-relapse mortality (NRM). We used the Kaplan-Meier method, log-rank test, and Fine-Gray method for survival analyses, and the Chi-squared test or Fisher's exact test for between-group comparisons.

Results

A total of 76 patients from C1Allo and 139 from C2Allo met the inclusion criteria with available baseline characteristics for propensity score matching. A caliper of 0.2 was applied, achieving a good balance between the groups, resulting in an overall standardized mean difference (SMD) of 0.03 and an acceptable SMD of <0.2 for individual covariables. After matching, 35 patients per cohort remained. The distribution of matched baseline characteristics between the cohorts is visualized in Figure 1A. Of the 35 patients from the C2Allo cohort, 5 (15%) died shortly after C2 and before transplant; only one of these deaths was attributable to relapse. In the C1Allo cohort, 40% had an HLA-identical sibling donor, compared to 26% in C2Allo (p=0.2). Additionally, 7% in C1Allo received myeloablative conditioning, compared to 14% in C2Allo (p=0.5). While CIR analysis suggested a trend towards a difference in favor of C1Allo (p = 0.056; Figure 1B), there were no significant differences between C1Allo and C2Allo for OS (p = 0.38) and NRM (p = 0.28).

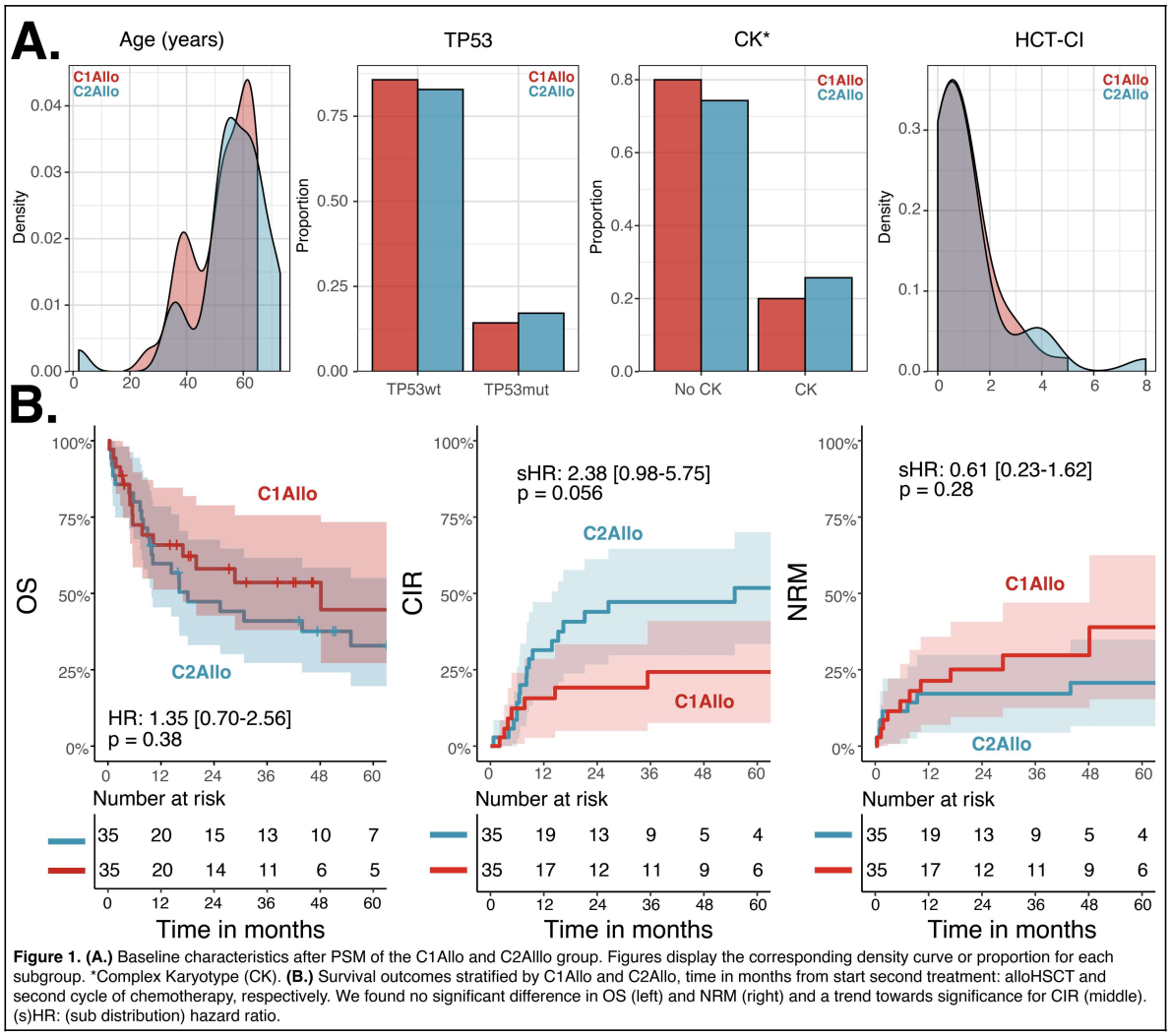

Figure 1. (A.) Baseline characteristics after PSM of the C1Allo and C2Alllo group. Figures display the corresponding density curve or proportion for each subgroup. *Complex Karyotype (CK). **(B.)** Survival outcomes stratified by C1Allo and C2Allo, time in months from start second treatment: alloHSCT and second cycle of chemotherapy, respectively. We found no significant difference in OS (left) and NRM (right) and a trend towards significance for CIR (middle). (s)HR: (sub distribution) hazard ratio.

Summary/Conclusion

Our findings suggest that adverse risk AML patients who achieve CR after C1 and proceed directly to alloHSCT do not appear to have different outcomes compared to those who receive a second induction cycle before transplant. However, given the retrospective nature and limited sample size of this study, our results should be interpreted with caution and warrant further investigation in a larger cohort.