中文題目：引導治療和基因突變影響伴骨髓增生異常相關改變的急性骨髓性白血病之移植預後

英文題目：Impact of cytoreduction strategy and prognostic mutations on post-transplantation outcome in acute myeloid leukemia with myelodysplastic-related changes

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Background

Acute myeloid leukemia with myelodysplastic-related changes (AML-MRC) has a poor prognosis, and allogeneic stem cell transplantation (Allo-SCT) is the only method for cure. However, the best pre-SCT cytoreduction strategy remains to be elucidated. Besides, no studies have evaluated the effect of prognostic mutations on post-SCT outcome.

Methods

In this study, we aim to investigate the impact of pretransplantation induction chemotherapy (IC) or Azacitidine (AZA) on post-SCT outcome. The post-SCT outcome was also evaluated by incorporating a comprehensive mutation panel of 22 relevant genes.

Results

We recruited a total of 223 AML-MRC patients. The most frequent mutation was *U2AF1*, followed by *RUNX1, ASXL1, SF3B1, NRAS and TET2* mutations. Pre-SCT IC and AZA had a response rate of 38.1% and 28.6%, respectively.

83 patients proceeded to allo-SCT: 56 received IC before HCT, 19 patients had AZA and 8 received upfront SCT directly. Post-SCT relapse rate was 58.9% in IC group and 63.2% in AZA group. With a median follow up of 65.5 months, 3-year outcomes in the IC, AZA and upfront SCT groups were 50%, 23%, and 25% for overall survival (OS), 35%, 9%, 25% for GVHD-free/relapse-free survival (GRFS). The OS and GRFS were significantly better in IC than AZA group (*P*=0.032, P=0.019). Presence of *FLT3-ITD* and P53 mutation correlated with a trend of worse GRFS (P=0.115, P=0.159). After adjustment for age, cytogenetic risk, donor, conditioning regimen and mutation status, IC group still had better OS (P=0.01, HR 0.337), GRFS (P=0.028, HR 0.399) compared to AZA group.

Conclusion

In conclusion, pre-SCT therapy with IC has benefits for post-SCT outcome in AML-MRC patients. Presence of *FLT3-ITD* and P53 mutation negatively affect the post-SCT outcome.

Key words: acute myeloid leukemia, transplantation, intensive chemotherapy, myelodysplastic related change, mutation