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AML-316: Clinical Outcomes of Adults with Core Binding Factor Acute Myeloid Leukemia (CBF-AML): A Single-Center Experience

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INTRODUCTION

- ❑ CBF-AML is characterized by the presence of either t(8;21) (q22;q22) or inv(16) (p13q22)/t(16;16).
- ❑ CBF-AML is associated with high rates of complete remission (CR) in patients who receive cytarabine-based induction chemotherapy (IC).
- ❑ 30%–40% of these patients relapse after standard cytarabine-based IC.

AIMS

- ❑ To identify the incidence of CBF-AML at our institution.
- ❑ To analyze the clinical outcomes of patients with CBF-AML undergoing IC at our institution:
  - ✓ Number of patients achieving CR, measurable residual disease (MRD) negativity, and median overall survival (mOS)

METHODS

- ❑ Design: Single-center retrospective study evaluating the clinical outcomes of patients with CBF-AML from 01/2013 to 12/2020.
- ❑ Setting: General community, academic hospital.
- ❑ Study participants: Adults with CBF-AML undergoing IC.
- ❑ Methodology: Baseline clinical characteristics, demographics, laboratory data, imaging, pathology reports, treatment regimens, and clinical outcomes were retrieved and analyzed.
- ❑ Main outcome measures: CR, MRD, and mOS

RESULTS

- ❑ 120 patients with AML were analyzed.
- ❑ 6 patients received IC with fludarabine, idarubicin, and cytarabine (FIA).
  - ❑ Other regimens included:
    - ❑ **C**ladribine, idarubicin, and cytarabine (CLIA, n=1),
    - ❑ **F**ludarabine, cytarabine, and gemtuzumab ozogamicin (FLAG-GO, n=1),
    - ❑ Idarubicin and cytarabine (3+7 regimen, n=1),
    - ❑ **D**ecitabine, venetoclax, and GO (n=1).
- ❑ Consolidation therapy included 6 cycles of FIA in young and fit patients; unfit patients received decitabine plus venetoclax. Two cycles of GO were added in consolidation.
- ❑ Non-and mutant C-KIT patients received dasatinib for at least 12 months.
- ❑ The patient who received 3+7 induction was treated with 10 cycles of decitabine maintenance.

	n=10
Age, years (median)	**33**
Sex	
Male, n (%)	**3 (30)**
Female, n (%)	**7 (70)**
Cytogenetics	
t(8,21), n (%)	**5 (50)**
inv16, n (%)	**4 (40)**
t(16,16), n (%)	**1 (10)**
C-KIT mutation, n (%)	**3 (30)**
Induction regimen	
FIA, n (%)	**6 (60)**
CLIA, n (%)	**1 (10)**
FLAG-GO, n (%)	**1 (10)**
3+7 regimen	**1 (10)**
Decitabine/venetoclax/GO, n (%)	**1 (10)**
Outcome	
CR after induction, n (%)	**9 (90)**
MRD negative, n (%)	**7 (50)**
Median OS	**Not reached**

- ❑ Only one patient died during induction, from multiorgan failure likely related to progression of leukemia.
- ❑ 9 patients achieved CR.
- ❑ 7 patients achieved a molecular CR and were MRD negative.
- ❑ No treatment-related mortalities.
- ❑ 2 patients relapsed at 3.5 and 11 months, respectively, and received salvage chemotherapy.
  - ❑ One achieved a second CR that lasted for 11 months.
  - ❑ Both patients were unable to proceed to hematopoietic stem cell transplant given severe comorbidities.
  - ❑ Both patients with relapsed CBF-AML eventually died
- ❑ mOS from relapse was 13 months, and it was not reached for the entire cohort.

CONCLUSIONS

- ❑ Although CBF-AML is considered a favorable-risk AML, outcomes for relapsed disease remain poor.
- ❑ The mOS from relapse in our study cohort was 13 months; it was not reached for the entire cohort.
- ❑ Incorporation of GO and CD117 tyrosine kinase inhibitors (e.g., dasatinib) into induction and consolidation regimens may mitigate the relapse risk and improve long-term outcomes.

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