ACUTE MYELOID LEUKEMIA OUTCOMES IN A REFERRAL ONCOLOGY HOSPITAL: SPOTLIGHT ON THERAPY-RELATED AML

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Introduction

Acute myeloid leukemia (AML) is an aggressive hematologic malignancy associated with high morbidity and mortality. Therapy-related AML (t-AML), arising as a consequence of cytotoxic treatments, presents with especially poor outcomes. In resource-constrained settings, real-world data on t-AML outcomes remain limited.

Objectives

To evaluate clinical characteristics and outcomes of AML patients in a referral oncology hospital, with a focused analysis on therapy-related AML cases.

Methods

Retrospective analysis of AML and MDS/AML cases admitted to Hospital Aristides Maltez from Jan/2020 to Feb/2025. Data included demographics, cytogenetics, treatment, and survival. Risk stratification followed European LeukemiaNet (ELN) 2022 guidelines. Acute promyelocytic leukemia cases were excluded from risk stratification. Given the referral pattern of our institution, we performed a focused analysis of t-AML cases. Mortality, 60-day death, and causes of death were reviewed.

Results

Patients' and disease characteristics (table 1):
Among 64 patients diagnosed with AML or SMD/AML, 36 (56%) were female. Then mean age was 51y. 23 patients (36%) were over 60y.
The most frequent subtype was *de novo* (33 patients), followed by secondary from MPN (n=11) and secondary from MDS (n=10).

Baseline characteristics	Number
Mean age	51y (range 20 – 91)
Sex	
Male	28 (44%)
Female	36 (56%)
Subtype	
de novo	33 (51%)
s-AML from MPN	11 (17%)
s-AML from MDS	10 (16%)
APL	5 (8%)
MDS/AML	5 (8%)
Risk stratification (ELN 2022)	
Adverse	15 (26%)
Intermediate	31 (52%)
Favorable	3 (5%)
Unknown	10 (17%)

Table 1

Outcomes (table 2)
Overall mortality was 72% (n=46); 26 patients died within 60 days (median survival: 53 days). Among 31 intermediate-risk patients, 18 (55%) died. Septic shock was the leading cause of death (n=22, 48%), followed by disease progression, and bleeding. Notably, all favorable-risk patients died of septic shock.

Mortality	Number
Overall mortality	46 patients(73%)
Median survival	53 days
Mortality < 60 days	26 patients (40%)
Risk stratification	
Favorable	3 patients (100%)
Intermediate	18 patients (58%)
Adverse	15 patients (100%)
Causes of death	
Septic shock	22 patients
Disease progression	11 patiens
Bleeding	4 patients

Table 2

t-AML subgroup:
Among 11 (17%) t-AML cases, 2 were MDS/AML, 2 APL, and 1 secondary to MPN. Eight (73%) had prior chemotherapy and 10 (90%) had radiotherapy . The most frequent prior malignancy was breast cancer (n=5), followed by prostate cancer (n=2). Other previous cancers included gastric adenocarcinoma, endometrial cancer, skin cancer, sarcoma, and one prior AML (each n=1). Mean age was 55 years; 7 were female. Seven (63%) died, six within 60 days. One APL patient is in remission; three receive low-dose cytarabine as palliative care.

Conclusion

AML management in real-world oncology hospitals is often limited by late presentation, infectious complications, and restricted access to intensive care. Our findings emphasize the high mortality of AML in a real-world oncology setting, with septic shock as a predominant cause of death, reinforcing the need for enhanced supportive care and earlier intervention strategies.

References

Khoury JD, Solary E, Abla O, et al. The 5th edition of the World Health Organization Classification of Haematolymphoid Tumours: Myeloid and Histiocytic/Dendritic Neoplasms. Leukemia. 2022;36(7):1703–1719.

Döhner H, Estey E, Grimwade D, et al. Diagnosis and management of AML in adults: 2022 ELN recommendations from an international expert panel. Blood. 2022;140(12):1345–1377..

Kayser S, Döhner K, Krauter J, et al. The impact of therapy-related acute myeloid leukemia (t-AML) on outcome in 2853 adult patients with newly diagnosed AML. Haematologica. 2011;96(2):179–186.

Almeida AM, Ramos F. Acute myeloid leukemia in the real world: why population-based registries are needed. Hematol Transfus Cell Ther. 2019;41(2):107–112.