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THE IMPACT OF MDS-RELATED GENETIC MUTATIONS ON CLINICAL OUTCOMES IN PATIENTS WITH NPM1-MUTATED ACUTE MYELOID LEUKEMIA

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INTRODUCTION

Acute myeloid leukemia (AML) with *NPM1* mutation carries a favorable prognosis[1]. However, multiple clinical trials showed that the presence of co-mutations can affect this favorable outcome. Prognosis in patients with *NPM1* and MDS related genetic mutations *(ASXL1, BCOR, EZH2, RUNX1, SF3B1, SRSF2, STAG2, U2AF1,* and *ZRSR2*), is controversial.[2]

AIM

To assess clinical features and outcomes in patients with *NPM1-mutated* acute myeloid leukemia (AML) with MDS-related mutations, compared to *NPM-1* mutated AML patients without these specific genetic alterations.

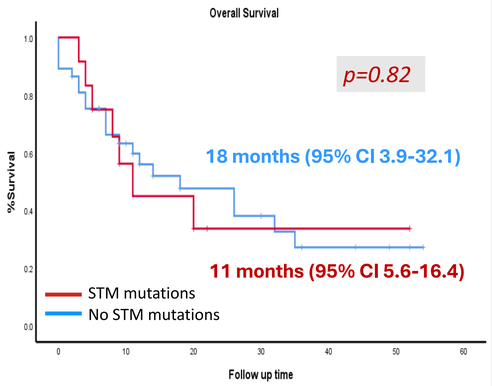
METHODS

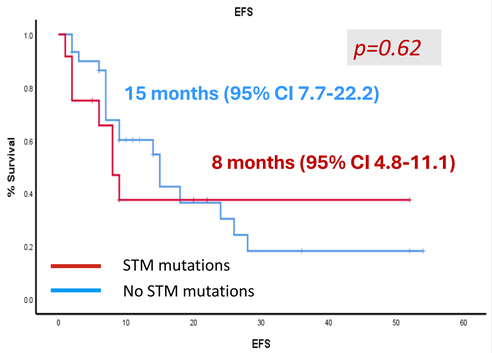
Medical records of adult AML patients (≥18 years) diagnosed and treated at King Hussein Cancer Center between 2017 and 2023 were reviewed.

- CR, RFS, EFS, and OS were defined according to ELN 2022 guidelines.
- Patients' characteristics were compared using Fisher's exact test and the Mann-Whitney test.
- Survival outcomes were evaluated by the Kaplan-Meier method.

RESULTS

Characteristics	Total (Evaluable) pts	STM group		P-Value
		STM mutations	No STM mutations	
Number of patients(%)	49	12 (24.5%)	37 (75.5%)	
Age in years (Median, Range)		53 (32-69)	46(29-61)	0.68
WBC in 1000s (Median, Range)		14(5.3-136)	33.5(7-198)	0.8
LDH mg/dl (median, range)		628 (128-843)	505(182-1491)	0.8
FLT3 mutation (ITD) present (Num, %)	26 (53.1%)	5 (19%)	21 (81%)	0.5
NPM1 VAF (% ,range)		39% (22%-41%)	39.5%(6%-69%)	0.18
DiNovo AML (Num, %)	45 (91.8%)	9(75%)	36(97%)	***0.04***
AML/MRC (Num, %)	4 (8.2%)	3(25%)	1(3%)	
Normal Cytogenetics (Num,%)	44 (94%)	10 (91%)	34 (97%)	0.42
Extra medullary disease (Num,%)	18 (36.7%)	6(50%)	12 (32.4%)	0.32
Complete remission at EOI (Num,%)	42(85.7%)	9(75%)	27(90%)	0.33
MRD negative by MFC at EOI (Num,%)	32 (65%)	7 (78%)	20 (87%)	0.6
Relapse after frontline CTX (Num,%)	36 (73.5%)	2 (22%)	10 (37%)	0.68
AlloSCT (Num,%)	22 (45%)	6 (50%)	16 (43.2%)	0.74
Indication for AlloSCT (Num,%)	High/Int risk (16, 73%) Relapse/Refractory (6, 27%)	5 (83%) 1 (17%)	11 (69%) 5 (31%)	0.63
Outcome (Num, %)	CR (26, 62%) Relapse (16, 38%)	7 (58%) 5 (42%)	19 (63%) 11 (37%)	1





CONCLUSION

In adult patients with NPM1-mutated AML, the presence of concurrent MDS-Related genetic mutations doesn't appear to have an impact on clinical outcomes.

REFERENCES

1. Hartmut Döhner,; Diagnosis and management of AML in adults: 2022 recommendations from an international expert panel on behalf of the ELN. Blood 2022; 140 (12): 1345–1377.
2. Eckardt, JN., Bill, M., Rausch, C. et al. Secondary-type mutations do not impact outcome in NPM1-mutated acute myeloid leukemia – implications for the European LeukemiaNet risk classification. Leukemia 37, 2282–2285 (2023).

CONTACT INFORMATION

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