Real-World Outcomes of Acute Myeloid Leukemia Patients Undergoing Treatment With Tyrosine Kinase Inhibitor (TKI) Therapy Targeting FLT3, IDH1, or IDH2

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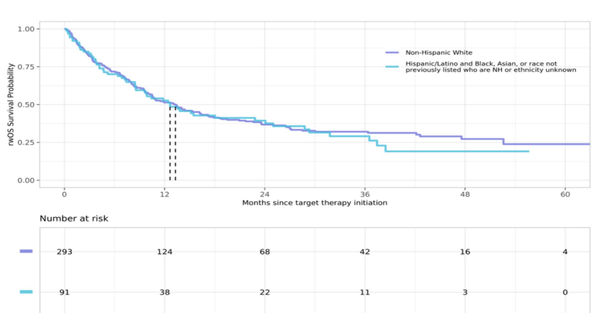
INTRODUCTION

- Acute myeloid leukemia (AML) is the most common and fatal acute leukemia in adults. Tyrosine kinase inhibitors (TKIs) have shown promise for certain patients in randomized clinical trials.
- This study evaluated real-world event-free (rwEFS) and overall survival (rwOS) across lines of therapy and by race/ethnicity.

METHODS

- 484 patients with AML (excluding promyelocytic and mixed phenotype leukemia) who were ≥18 years at diagnosis and treated with a TKI targeting FLT3, IDH1, or IDH2 as monotherapy or with a hypomethylating agent, on or after January 1, 2015 in the nationwide Flatiron Health electronic health record-derived de-identified database.
- We used crude Kaplan-Meier methods to estimate rwEFS and rwOS from treatment initiation and a Cox regression model to assess factors associated with outcomes, modeling stem cell transplant (SCT) as a time-varying covariate.

Fig 3. rwOS by race/ethnicity



RESULTS

Fig 1. rwEFS by Line of Treatment

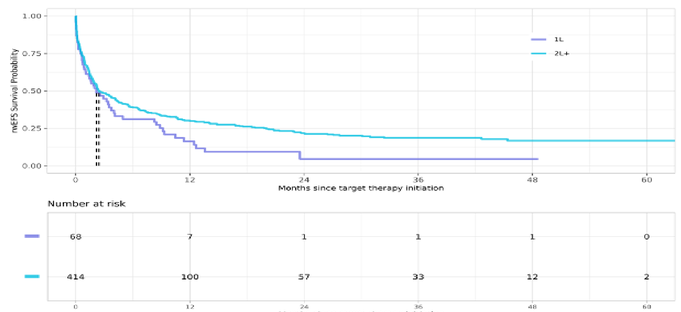
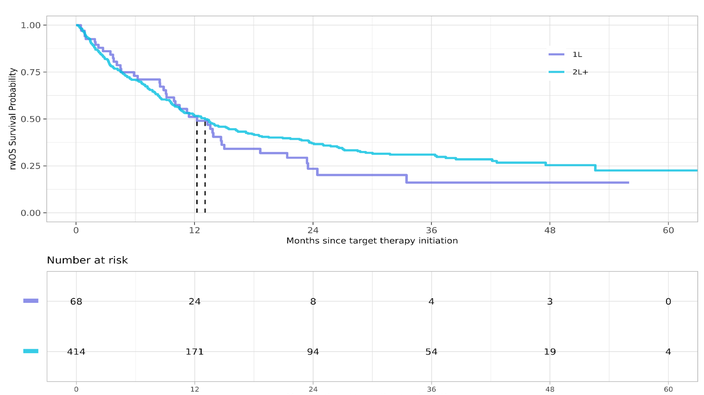


Fig 2. rwOS by Line of Treatment



RESULTS (CONTINUED)

- Targeted therapy was received in the first line (1L) setting for 14% (n=68) of patients and 86% (n=416) in second-line or beyond (2L+).
- Among 1L patients, the median age at TKI initiation was 77 years, 62% were non-Hispanic white (NHW), 15% had commercial health insurance, and 50% had prior MDS or MPN.
- Patients who received TKIs at 2L+ did so at a median age of 68 years, 71% were NHW, 29% had commercial health insurance, and 28% had prior MDS or MPN.
- Patients treated at 1L and 2L+ had similar duration of TKIs (3.7 vs. 3.4 months), rwEFS (2.2 vs. 2.4 months, Fig 1), and rwOS (12.3 vs. 13.1 months, Fig 2).
- There were no statistically significant differences in outcomes between NHW and non-white patients, though non-white patients were younger at diagnosis (median: 64 vs. 68 years, Fig 3).
- Among patients treated in 2L+, improved rwOS was associated with receiving a pre-TKI SCT ($p<0.001$), commercial insurance (vs. Medicaid; $p=0.045$), and favorable 2017 European LeukemiaNet risk classification (vs. adverse; $p=0.049$).

CONCLUSION

- In this large, real-world cohort of patients with AML receiving FLT3- or IDH-targeted TKI therapy, clinical outcomes remained poor regardless of timing of TKI initiation. However, several factors were associated with prognosis and may warrant further investigation.