COMPARATIVE EFFICACY AND SAFETY OF FRONTLINE FLT3 INHIBITOR REGIMENS FOR NEWLY DIAGNOSED FLT3-MUTATED ACUTE MYELOID LEUKEMIA

S. A. Reddy[1], Z. Sohail[2], D. Botlaguduru[3], R. Khan[4], H. D. Ramteke[5], D. Murugavel[6]
[1]Northwestern Medicine McHenry Hospital / Rosalind Franklin University, McHenry, IL, USA • [2]Rawalpindi Medical University, Pakistan • [3]Keck School of Medicine of USC, CA, USA • [4]Ayaan Institute of Medical Sciences, India • [5]Rhythm Heart and Critical Care Hospitals, India • [6]Ivane Javakhishvili Tbilisi State University, Georgia

SOHO 2026
Annual Meeting

INTRODUCTION

Frontline options for FLT3-mutated AML are expanding rapidly, but direct comparisons remain scarce. Clinicians must choose between intensive FLT3 inhibition and venetoclax-based combinations while balancing survival, molecular response, and toxicity.

OBJECTIVE

Establish a comparative efficacy and safety hierarchy of frontline FLT3 inhibitor-based regimens using Bayesian network meta-analysis.

METHODS

- **PubMed, EMBASE, ASCO, ASH, and SOHO proceedings**
- • 16 studies; newly diagnosed FLT3-mutated AML
- • Random-effects Bayesian network meta-analysis
- • Intensive and lower-intensity FLT3i regimens
- • OS, EFS, CR/CRi, MRD negativity, and key toxicities
- • Treatment ranking by SUCRA

CLINICAL TAKEAWAY

FIT PATIENTS

Quizartinib + 7+3 provided the strongest survival-safety balance.

RESPONSE DEPTH

Gilteritinib triplets achieved the deepest responses, but with more early mortality and myelosuppression.

RESULTS | WHAT CHANGES PRACTICE

SURVIVAL

Quizartinib + 7+3 improved OS versus 7+3 alone (HR 0.77) and ranked first for survival.

RESPONSE

Gilteritinib triplets led CR/CRi and MRD negativity, although early mortality reduced the net survival gain.

LOWER-INTENSITY THERAPY

VEN + FLT3i triplets improved EFS versus VEN + azacitidine.

SAFETY

Quizartinib increased grade >=3 QT prolongation; triplets caused the most prolonged myelosuppression.

16
STUDIES

0.77
OS HR

88%
SURVIVAL SUCRA

Quizartinib + 7+3: survival leader
Gilteritinib triplets: response leader

Regimen	Endpoint	Effect estimate	Comparator	Interpretation
Quizartinib + 7+3	OS	HR 0.77 (0.61–0.97)	7+3	Significant benefit
Quizartinib + 7+3	OS	HR 0.91 (0.75–1.09)	Midostaurin + 7+3	Favorable trend
Gilteritinib triplet	CR/CRi	OR 3.15 (2.10–4.72)	Midostaurin + 7+3	Highest response
Gilteritinib triplet	MRD negativity	OR 2.80 (1.65–4.75)	Midostaurin + 7+3	Deepest response
VEN + FLT3i triplet	EFS	HR 0.68 (0.49–0.94)	VEN + AZA	Improved EFS
Quizartinib	Grade ≥3 QT prolongation	OR 2.10 (1.15–3.84)	Other regimens	Higher risk
Triplet regimens	Prolonged myelosuppression	OR 4.25 (2.30–7.80)	Other regimens	Highest risk
Quizartinib + 7+3	Survival SUCRA	88%	Network	Rank 1
Gilteritinib triplet	Response SUCRA	84%	Network	Rank 1

ACKNOWLEDGMENTS

We thank the investigators and participants of the studies included in this network meta-analysis.

CONTACT

Sadhu Aishwarya Reddy, MD
Northwestern Medicine McHenry Hospital
Rosalind Franklin University • McHenry, Illinois

SOURCES

Systematic search: PubMed, EMBASE, ASCO, ASH, and SOHO proceedings.

Full study-level references available from the presenting author.