SURVIVAL BENEFIT OF FLT3 INHIBITOR MAINTENANCE AFTER ALLO-HSCT IN FLT3-ITD AML: A SYSTEMATIC REVIEW AND RECONSTRUCTED IPD META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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INTRODUCTION

- Post-transplant FLT3 inhibitor maintenance has emerged as a promising strategy to reduce relapse and improve long-term survival.

AIM

- To evaluate the effect of FLT3 inhibitor maintenance after allo-HSCT on Relapse-Free Survival (RFS) and Overall Survival (OS) using reconstructed individual patient data from randomized controlled trials involving adults with FLT3-ITD AML.

METHODS

Reporting Standard
PRISMA 2020 Guidelines

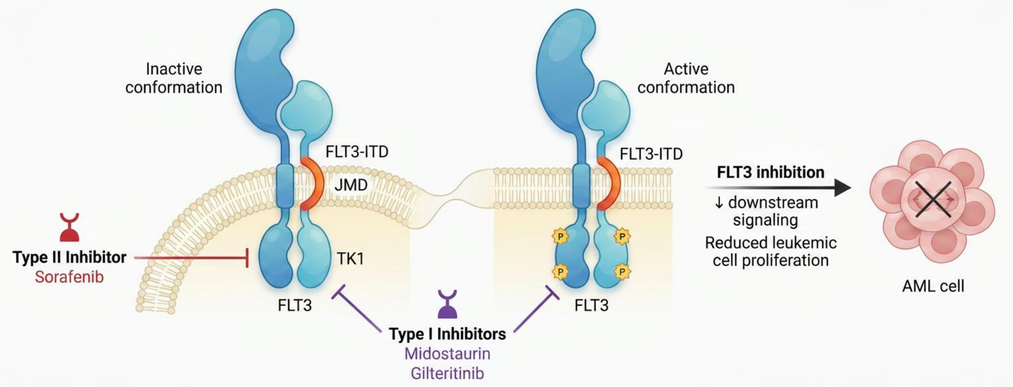
Literature Search
PubMed, Embase and Scopus
Database inception through April 2026

Included Studies

4 RCTs	701 Patients	351 FLT3i	350 Control

FLT3 inhibitors Included
Sorafenib, Midostaurin, Gilteritinib

Statistical Analysis
- Kaplan–Meier curves digitized and IPD reconstructed
- One-stage Cox proportional hazards models stratified by study
- Restricted Mean Survival Time
- 48-month landmark survival analyses



Outcome	HR (95% CI)	P value	48-mo FLT3i	48-mo Control	ΔRMST (48 mo)
Relapse-free survival	0.53 (0.40–0.70)	<0.001	74.9%	61.6%	+6.5 months
Overall survival	0.65 (0.48–0.89)	0.006	76.3%	69.3%	+3.9 months

Figure 1. *Reconstructed Kaplan–Meier curve demonstrating improved relapse-free survival with FLT3 inhibitor maintenance.*

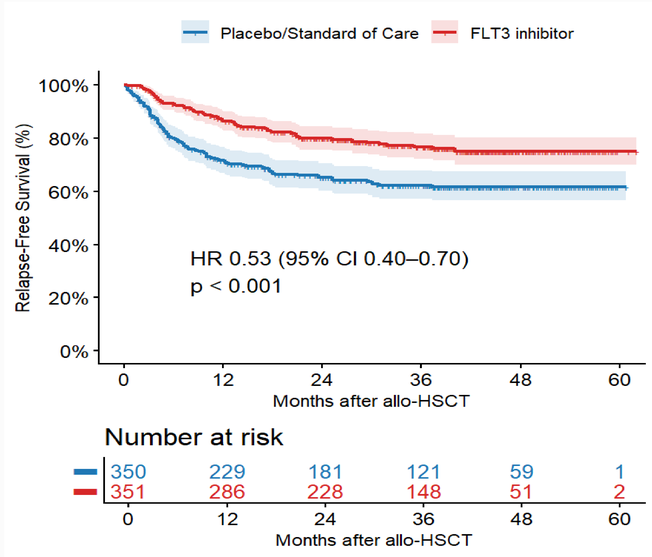
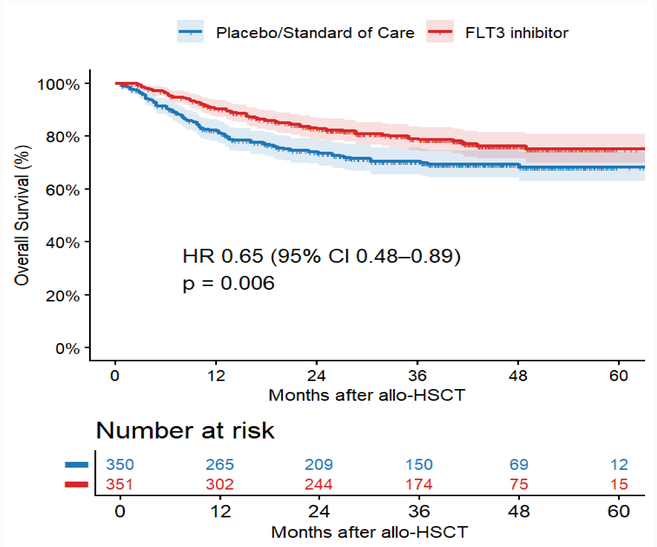


Figure 2. *Reconstructed Kaplan–Meier curve demonstrating improved overall survival with FLT3 inhibitor maintenance.*



RESULTS

- 4 randomized controlled trials
- 701 patients (FLT3 inhibitor, n = 351; control, n = 350)
- Significant improvement in relapse-free survival and overall survival with FLT3 inhibitor maintenance
- Benefit observed across pooled reconstructed individual patient data

CONCLUSION

- FLT3 inhibitor maintenance after allo-HSCT improves relapse-free and overall survival.
- Maintenance therapy increased 48-month survival and restricted mean survival.
- Findings support post-transplant FLT3 inhibitor maintenance in eligible FLT3-ITD AML patients.
- Further prospective studies should define the optimal agent, duration, and MRD-guided approach.

REFERENCES

- Access Full References and additional study details via QR code.

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Abbreviations: FLT3: FMS-like tyrosine kinase 3; FLT3-ITD: FLT3 internal tandem duplication; allo-HSCT: allogeneic hematopoietic stem cell transplantation; AML: acute myeloid leukemia; RFS: relapse-free survival; OS: overall survival; CI: confidence interval; RMST: restricted mean survival time; MRD: measurable residual disease