Efficacy and Safety of Intravenous Tirofiban as an adjunct to Endovascular thrombectomy in Ischemic Stroke; A Systematic Review and Meta-Analysis

Ayesha Altaf[1]; Abdullah Afridi[2], Fatima Imran[3], Tahya Nazir[1]

Introduction

Background: Acute ischemic stroke (AIS) due to large vessel occlusion (LVO) is a leading cause of disability and mortality. While endovascular thrombectomy (EVT) is the standard of care, challenges with microvascular reperfusion and re-occlusion persist.

Objective: This meta-analysis aims to to determine the effect of pre-procedural intravenous Tirofiban on functional outcomes and safety in patients with LVO stroke undergoing EVT.

Materials And Methods

Data Sources: PubMed, Embase, and Cochrane till July 2025.

Population: Adult patients with AIS due to LVO undergoing EVT.

Intervention & Comparison: Intravenous Tirofiban administered prior to EVT vs. EVT alone.

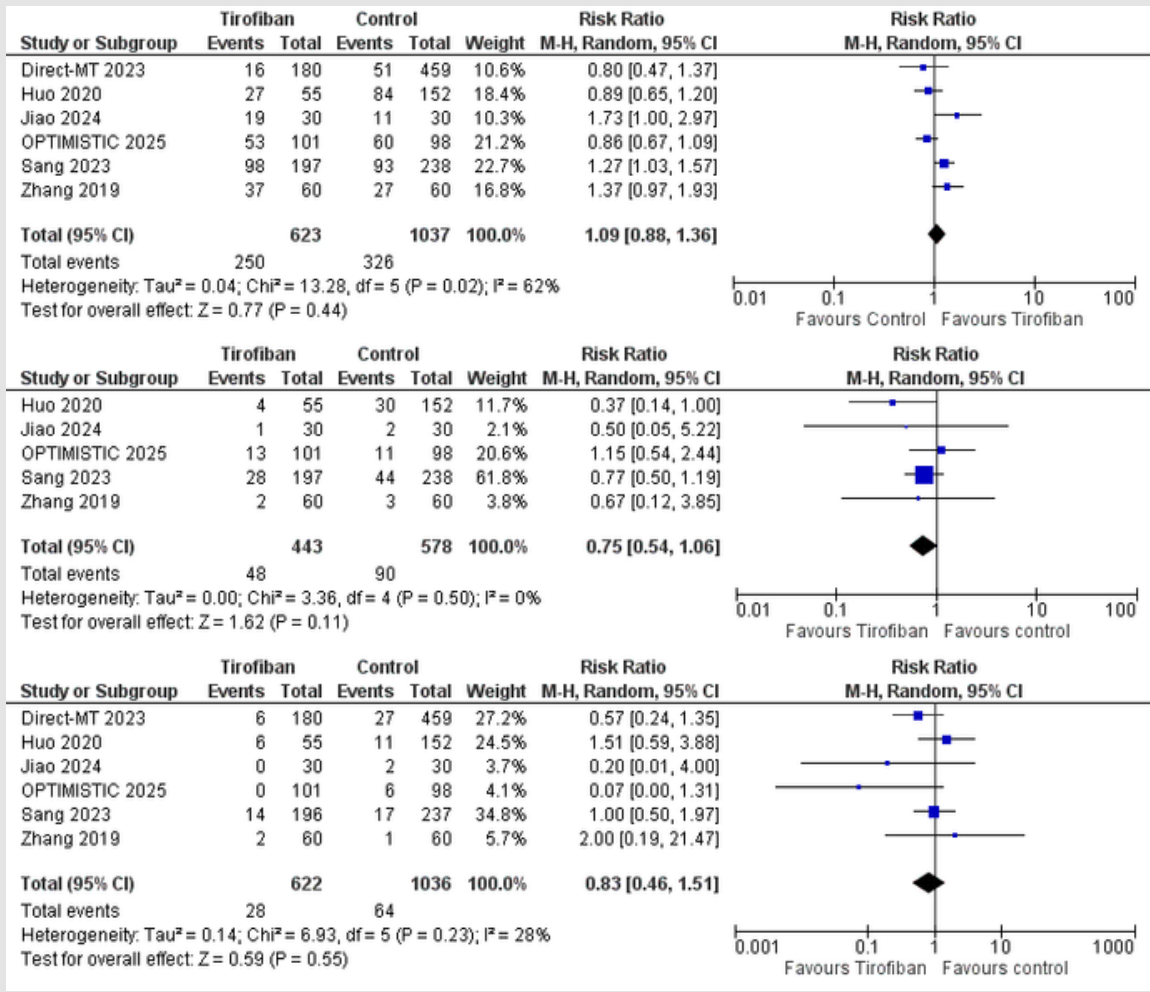
Six studies comprising **1,664 patients** were included in the final analysis.

Results

Functional Independence (mRS 0-2): Didnot significantly improve this outcome,RR: 1.09, 95% CI: 0.88–1.36; p = 0.44; I^2 = 62%).

90 Day Ordinal mRS: No sig. difference was found;MD=0.06,95% CI: -0.15 to 0.27; p = 0.58; I^2 = 0%). **Mortality:** Tirofiban group showed non signif. reduction in it;RR: 0.75, 95% CI: 0.54–1.06; p = 0.11; I^2 = 0%.

sICH: Its risk was comparable between both groups; RR: 0.83, 95% CI: 0.46–1.51; p = 0.55; I^2 = 28%



Conclusion

Pre-procedural Tirofiban did not improve 90-day functional outcomes but demonstrated an acceptable safety profile. Findings do not support its routine use outside of clinical trials.