Safety and Efficacy of Tranexamic Acid in Bariatric Surgery: A Systematic Review and Meta-analysis

Lily J Park, Hannah Polley, Meredith Poole, Karanbir Brar, Tyler McKechnie, Rahima Nenshi, Flavia Borges, Sandra Ofori, Maura Marcucci, David Conen, Dennis Hong, PJ Devereaux

Population Health Research Institute
HEALTH THROUGH KNOWLEDGE

McMaster University

Background

Current evidence supports perioperative tranexamic acid (TXA) use to reduce perioperative bleeding in non-cardiac surgery

Lack of evidence specific to subspecialties like bariatric surgery limit uptake in clinical practice

Objective

To determine safety and efficacy of TXA in bariatric surgery using updated evidence

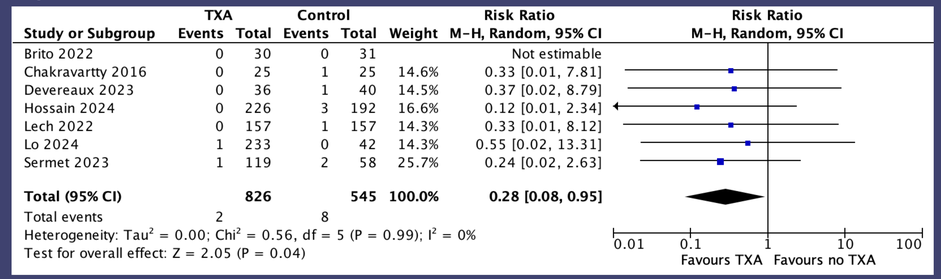
Methods

- PRISMA
- MEDLINE, EMBASE, CENTRAL from inception to August 2024
- Included comparative studies including bariatric surgery (sleeve, RYGB only)
- Risk of Bias assessment: ROB-2, ROBINS-I
- Certainty of Evidence: GRADE
- Meta-analysis: M-H for categorical, IV for continuous; RR with 95% CI

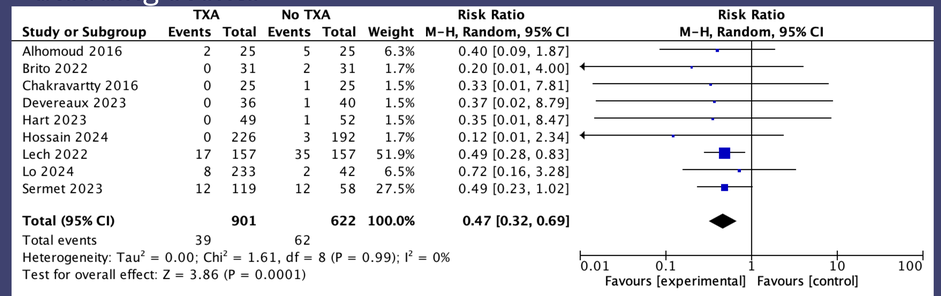
Results

Author	Year	Design	Total	Surgery
Devereaux	2023	RCT	76	RYGB + LSG
Alhomoud	2016	RCT	50	LSG
Brito	2022	prospective	61	LSG
Chakravartty	2016	prospective	50	LSG
Lech	2022	retrospective	314	LSG
Hart	2023	RCT	101	LSG
Sermet	2023	RCT	177	LSG
Hossain	2024	retrospective	400	LSG
Lo	2024	retrospective	275	RYGB

- packed red blood cell transfusion:



- bleeding events



Results cont.

- No deep venous thromboembolic events (DVT) across all studies

Limitations

- ROB – imprecision for safety outcome
- Mixed LSG and RYGB data with majority for LSG

Conclusion

- TXA use in bariatric surgery is associated with reduced perioperative transfusion rates, bleeding events, hemoglobin reduction, LOS, and operative time with no differences in intraoperative blood loss
- There were no DVTs across all included studies, suggesting TXA likely does not increase DVT risk
- However, larger RCTs are needed to corroborate these findings.