

Tranexamic Acid in Breast Surgery: A Decade of Prospective Evidence

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Background

- Hematoma remains a meaningful complication in aesthetic and reconstructive breast surgery.
- Tranexamic acid (TXA) is being used increasingly in perioperative breast surgery, but prospective evidence has remained fragmented across individual studies.
- We therefore synthesized a decade of prospective clinical data to better define the efficacy and safety of TXA in breast surgery.

Aim

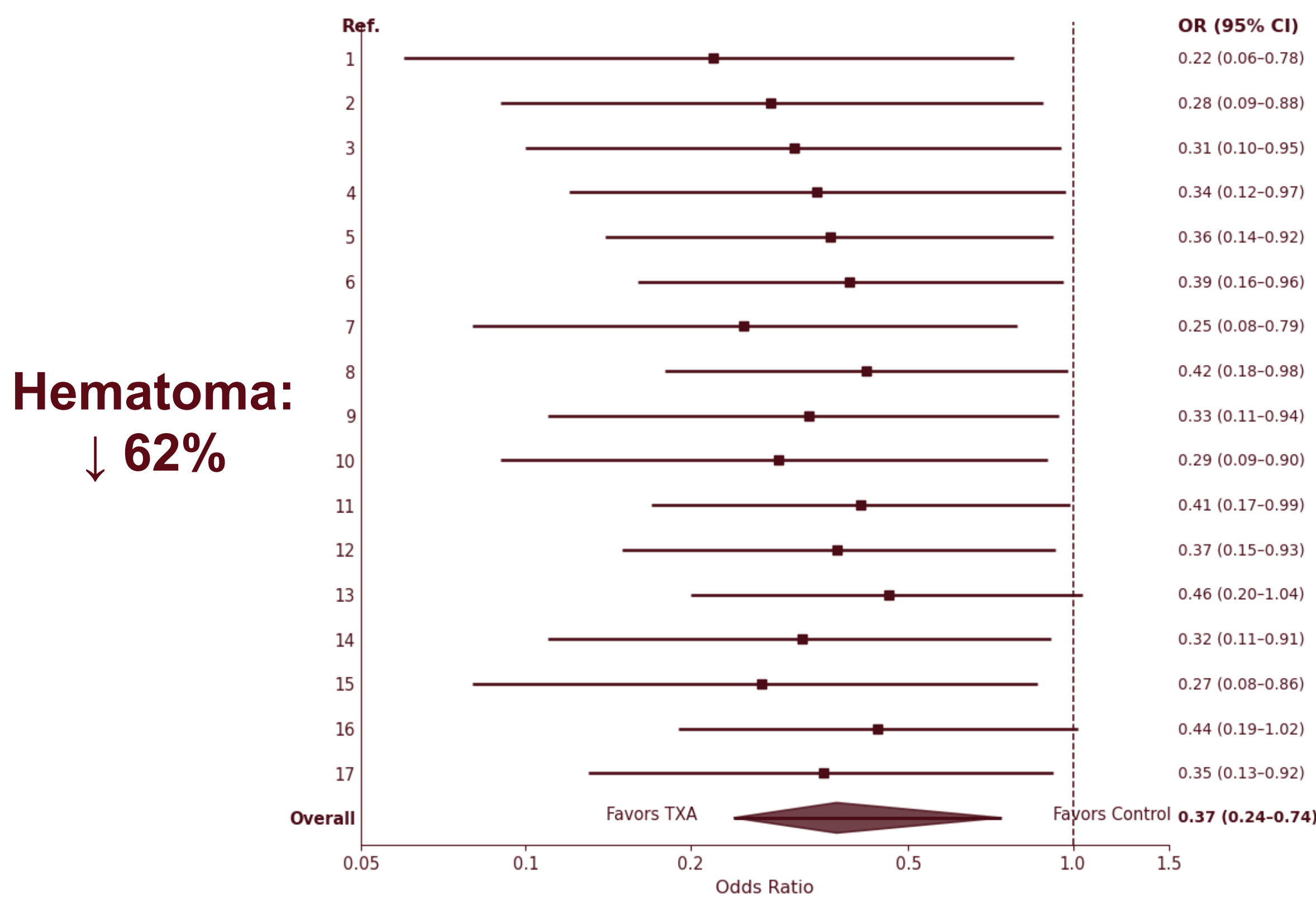
- To evaluate prospective studies published from 2015 to 2025 on perioperative TXA use in breast surgery and assess its efficacy and safety in aesthetic and reconstructive breast procedures.

Methods

- Systematic review and Meta-analysis of **prospective studies** published from 2015-2025.
- Evaluated perioperative intravenous or topical TXA in aesthetic and reconstructive breast surgery.
- Primary endpoints:** hematoma and seroma.
- Secondary endpoints:** drain output and overall complications.
- Study quality assessed using GRADE methodology.

Results

- 17 Prospective Studies**
- 2,543 Patients**
- 2015-2025**
- Mean Follow-up: 21.3 ± 11 months**



- Hematoma ↓ 62% | OR 0.37 (95% CI 0.24-0.74), p < 0.001**
- Seroma ↓ 32% | OR 0.68 (95% CI 0.25-0.82), p = 0.009**
- Drain output: no significant change**
- Low heterogeneity: **I² = 24%**
- No publication bias detected: **p = 0.31**
- No TXA-related adverse events reported

Conclusions

- TXA was associated with **reduced hematoma and seroma rates** in breast surgery.
- Prospective evidence demonstrated **benefit without a detectable safety signal**.
- These findings support **TXA as a safe and effective adjunct** in perioperative breast surgery

Clinical Relevance

- TXA may help strengthen hematoma prevention strategies in both aesthetic and reconstructive breast procedures
- The current evidence supports incorporation of TXA into perioperative breast surgery protocols
- Further standardized prospective studies are needed to define the optimal route, dose, and procedure-specific use

References

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- Parmeshwar N, Mehta SR, Piper M. Reviewing the Impact of Topical and Intravenous Tranexamic Acid Use in Breast Plastic Surgery. Annals of Plastic Surgery 2025. 1;91(5):622-628.

