Prophylactic vs Therapeutic Tranexamic Acid for Cesarean Delivery with PPH and Hemorrhage Outcomes: A Multicenter Retrospective Cohort Study

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Postpartum hemorrhage (PPH)
4-5% deliveries
1-2% req. transfusion[1]

Evidence for routine prophylactic TXA administration for Cesarean delivery is mixed[3,4]

Real-world data comparing these timing strategies are limited

Prophylactic
immediately after delivery

VS

Therapeutic
in response to hemorrhage

Aim: Evaluate the association of prophylactic vs therapeutic TXA administration with blood loss and hemorrhage interventions among Cesarean deliveries complicated by PPH

1.Bienstock JL. N Engl J Med. 2021.
2.WOMAN Trial Collaborators. Lancet. 2017.
3.Pacheco LD. N Engl J Med. 2023.
4.Sentilhes L. N Engl J Med. 2021.
5.Gillisen A. PLoS One. 2017.

Methods

Inclusion Criteria:

Cesarean deliveries with PPH who received TXA within 3 days of delivery
Nov 2017 – May 2025

Exclusion Criteria:

Patients who received TXA prior to delivery

Comparison Groups:

Prophylactic
*< 6 min following delivery**

VS

Therapeutic
≥ 6 min following delivery

Outcomes:

- EBL
- Products transfused
- Uterotonics
- Bakri balloon
- Jada
- O'Leary
- B-Lynch suture
- Dilation and curettage (D&C)
- Uterine artery embolization (UAE)
- Hysterectomy

**Cut-off defined based off prior RCT[3,4] and the time duration typically entailed for two bolus doses of oxytocin to be administered*

Results

N = 921
Cesarean deliveries
with PPH
who received TXA

Prophylactic TXA
N = 164 (18%)
Median time: 4 min

Therapeutic TXA
N = 757 (82%)
Median time: 18.0 min

Compared to the therapeutic TXA group, the prophylactic TXA group had:

↓ Intrapartum Cesarean deliveries, 73.8% vs 83.36% *
↑ Magnesium sulfate usage, 20.7% vs 12.4% *
↑ Baseline coagulation disorder, 12.0% vs 5.5% *

After adjusting for baseline covariates, prophylactic TXA administration was **NOT** significantly associated with:

↓ QBL, adjusted estimate 51.72 (55.33), p=0.3500
↓ Transfusion, aOR 0.95 [0.58-1.56], p=0.8477
↓ Composite PPH intervention, aOR 0.96 [0.55-1.67], p=0.889

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Prophylactic vs Therapeutic TXA for Cesarean Delivery with PPH and Hemorrhage Outcomes: A Multicenter Retrospective Cohort Study.
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Conclusion

N = 921
Cesarean deliveries with PPH that received TXA

Prophylactic TXA
N = 164 (18%)
Median time: 4 min

Therapeutic TXA
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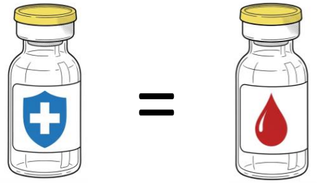

No Outcome Differences
- QBL
- Transfusion
- Composite PPH intervention

Limitations:
- Single institution
- Retrospective, cannot account for confounding

Consistent with prior retrospective studies examining early TXA administration[5], prophylactic TXA administration (<6 min from delivery time) for Cesarean deliveries may have limited efficacy in reducing blood loss and subsequent interventions during PPH