

Tranexamic acid for the prevention of postpartum hemorrhage: a cost-effectiveness analysis

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Abstract

Objectives: To estimate the cost-effectiveness of alternative risk-dictated strategies utilizing prophylactic tranexamic acid (TXA) for the prevention of postpartum hemorrhage (PPH).

Study Design: We constructed a microsimulation-based Markov decision-analytic model estimating the cost-effectiveness of three alternative risk-dictated strategies for TXA prophylaxis versus the status quo (no TXA) in a cohort of 3.8 million pregnant women delivering in the United States. Each strategy differentially modified risk-specific hemorrhage probabilities by preliminary estimates of TXA's prophylactic efficacy. Outcome measures included incremental costs, quality-adjusted life-years (QALYs), and adverse maternal outcomes averted. Costs and benefits were considered from the healthcare system and societal perspectives over a lifetime time horizon.

Results: All TXA strategies were dominant versus the status quo, implying that they were more effective while also being cost-saving. Providing TXA to all delivering women irrespective of hemorrhage risk produced the most favorable results overall, with estimated cost savings greater than \$670 million and up to 149,505 PPH cases, 2,933 hysterectomies, and 70 maternal deaths averted, per annual cohort. Threshold analysis suggested that TXA is likely to be cost-saving for health systems at costs below \$184 per gram.

Conclusions: Our findings suggest that routine prophylaxis with TXA would likely result in substantial cost-savings and reductions in adverse maternal outcomes in this context. The integrity of this conclusion is maintained across all risk-dictated strategies, even when the cost of TXA is significantly higher than what is supported in the literature.

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