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Tranexamic Acid for Preventing Obstetric Haemorrhage in Vaginal and Emergency Caesareans Births

1. **Tranexamic Acid in Postpartum Hemorrhage Management: A Multinational Systematic Review of Efficacy and Safety in Both Vaginal and Cesarean Births**

   Item Type: Journal Article

   Authors: Ali, Nisreen

   Publication Date: Jun ,2025

   Journal: Cureus 17(6), pp. e85712

   Abstract: Postpartum hemorrhage (PPH) is a major cause of maternal mortality worldwide, and there is an urgent need for adjuncts to uterotonic therapy. Tranexamic acid (TXA), an agent that inhibits fibrinolysis, has shown promise in surgical and trauma settings, but its role in postpartum hemorrhage prevention and treatment remains unclear. We systematically reviewed six randomized, placebo-controlled trials (total of 54934 participants) in both vaginal and cesarean delivery. Among women with postpartum hemorrhage, tranexamic acid was observed to lower the risk of bleeding-related mortality and reduce the need for additional surgical intervention. When administered prophylactically at cesarean delivery, tranexamic acid appeared to lessen intraoperative bleeding and the

likelihood of severe hemorrhage or transfusion. In vaginal delivery settings, although mean blood loss was reduced, no substantial impact on the incidence of postpartum hemorrhage was noted in large-scale investigations. Overall, transfusion rates and all-cause mortality were not significantly changed. Thromboembolic events remained rare and comparable to placebo, and no maternal deaths were attributed to tranexamic acid. These findings underscore the safety and effectiveness of early administration for postpartum hemorrhage treatment. While prophylactic use at cesarean delivery confers modest reductions in severe bleeding, its role in routine prophylaxis after vaginal birth warrants further investigation. Integrating tranexamic acid into obstetric protocols may help mitigate the global burden of postpartum hemorrhage. Copyright © 2025, Ali et al.

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2. **The use of tranexamic acid in prophylaxis of postpartum haemorrhage.**

Item Type: Journal Article

Authors: Banerjee Y. and Mukherjee, T.

Publication Date: 2025

Journal: International Journal of Clinical Obstetrics and Gynaecology 9(3), pp. 1–5

Abstract: Background: Postpartum Haemorrhage (PPH) is one of the leading causes of maternal mortality claiming upto 700,000 lives globally each year. WHO recommends early use of intravenous Tranexamic acid as soon as possible after diagnosis of PPH (preferably within 3 hours of birth) for women with presenting PPH after vaginal birth or caesarean section. Objective(s): To evaluate the efficacy and safety of intravenous Tranexamic acid (TXA) for preventing PPH after vaginal and caesarean births and to record any adverse effects following its administration. Material(s) and Method(s): This study was conducted as a randomized, double-blind, placebo controlled trial on patients at risk for PPH who delivered vaginally or by caesarean section at our institute. The participants were randomly categorized into two groups study group (receiving tranexamic acid) and control group. The two groups were compared with respect to effectiveness (volume of blood loss and incidence of PPH) and safety (vitals and adverse drug reactions). Result(s): Average blood loss measured from the delivery of placenta till 2 hours post-partum was significantly lower in study group as compared to control group (p0.05). There was no incidence of any adverse drug reaction reported in the study group. Conclusion(s): Tranexamic acid can be used safely and effectively for prophylactic management of PPH regardless of the mode of delivery. Tranexamic acid was not associated with major complications or maternal or perinatal mortality and morbidity.Copyright © Gynaecology Journal.

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ee&pid=%3Cauthor%3EBanerjee+Y.%3BMukherjee+T.%3C%2Fauthor%3E%3CAN%3E2036456050%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

3. **Is prophylactic tranexamic acid effective in preventing postpartum hemorrhage? almost certainly no.**

Item Type: Journal Article

Authors: Bouthors A.S.;Hureau M. and Butwick, A.

Publication Date: 2025

Journal: International Journal of Obstetric Anesthesia 62(pagination), pp. Article Number: 104356. Date of Publication: 01 May 2025

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:40187036&id=doi:10.1016%2Fj.ijoa.2025.104356&issn=0959-289X&isbn=&volume=62&issue=&spage=104356&pages=&date=2025&title=International+Journal+of+Obstetric+Anesthesia&atitle=Is+prophylactic+tranexamic+acid+effective+in+preventing+postpartum+hemorrhage%3F+almost+certainly+no&aulast=Bouthors&pid=%3Cauthor%3EBouthors+A.-S.%3BHureau+M.%3BButwick+A.%3C%2Fauthor%3E%3CAN%3E2038185268%3C%2FAN%3E%3CDT%3EEditorial%3C%2FDT%3E

4. **A STUDY ON EFFECT OF PARENTERAL TRANEXAMIC ACID IN PREVENTING PPH FOLLOWING VAGINAL DELIVERY.**

Item Type: Journal Article

Authors: Rathinakumar A.;Samiyappa D. and Shanmugam, A.

Publication Date: 2025

Journal: International Journal of Academic Medicine and Pharmacy 7(2), pp. 88–92

Abstract: Background: Labor is defined as regular painful uterine contractions that lead to cervical dilation and effacement. PPH remains the leading cause of maternal death and is often avoidable. Therefore, tranexamic acid may be an effective treatment for high-risk women with PPH. This study aimed to assess the role of TXA in reducing blood loss after vaginal delivery. Material(s) and Method(s): This prospective case-control study included 200 pregnant women categorised into two groups: study (n=100) and control (n=100). The study group received oxytocin and tranexamic acid, whereas the control group received oxytocin and placebo. Vital parameters, blood loss, Apgar scores, and maternal outcomes were also recorded. Blood loss was measured using drapes and preweighed pads at delivery and 2 h postpartum. Result(s): Blood loss was significantly lower in the study group than in the control group at all time points (pConclusion(s): Tranexamic acid administered prophylactically via the intravenous route significantly reduced blood loss after vaginal delivery without major complications. It is safe, with no adverse effects on foetal outcomes, although nausea and vomiting are more frequent.

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=doi:10.47009%2Fjamp.2025.7.2.19&issn=2687-5365&isbn=&volume=7&issue=2&spage=88&pages=88-92&date=2025&title=International+Journal+of+Academic+Medicine+and+Pharmacy&atitle=A+STUDY+ON+EFFECT+OF+PARENTERAL+TRANEXAMIC+ACID+IN+PREVENTING+PPH+FOLLOWING+VAGINAL+DELIVERY&aulast=Rathinakumar&pid=%3Cauthor%3ERathinakumar+A.%3BSamiyappa+D.%3BShanmugam+A.%3C%2Fauthor%3E%3CAN%3E2038069205%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

5. **Tranexamic acid for preventing postpartum haemorrhage after vaginal birth.**

Item Type: Journal Article

Authors: Rohwer C.;Rohwer A.C.;Cluver C.;Ker K. and Hofmeyr, G. J.

Publication Date: 2025

Journal: Cochrane Database of Systematic Reviews 2025(1) (pagination), pp. Article Number: CD007872. Date of Publication: 15 Jan 2025

Abstract: Rationale: Postpartum haemorrhage (PPH) is common and potentially life-threatening. The antifibrinolytic drug tranexamic acid (TXA) is thought to be effective for treating PPH. There is growing interest in whether TXA is effective for preventing PPH after vaginal birth. In randomised controlled trials (RCTs), TXA has been associated with increased risk of seizures and unexplained increased mortality when given more than three hours after traumatic bleeding. Reliable evidence on the effects, cost-effectiveness and safety of prophylactic TXA is required before considering widespread use. This review updates one published in 2015. Objective(s): To assess the effects of TXA for preventing PPH compared to placebo or no treatment (with or without uterotonic co-treatment) in women following vaginal birth. Search Method(s): We searched MEDLINE, Embase, CENTRAL, and WHO ICTRP (to 6 September 2024). We also searched reference lists of retrieved studies. Eligibility criteria: We included RCTs evaluating TXA alone or in addition to standard care (uterotonics) for preventing PPH following vaginal birth. For this update, we required trials to be prospectively registered (before participant recruitment), and we applied a trustworthiness checklist. Outcome(s): Critical outcomes were blood loss >= 500 mL and blood loss >= 1000 mL. Important outcomes included maternal death, severe morbidity, blood transfusion, receipt of additional surgical interventions to control PPH, thromboembolic events, receipt of additional uterotonics, hysterectomy, and maternal satisfaction. Risk of Bias: We used the Cochrane risk of bias tool (RoB 1) to assess the risk of bias in the studies. Synthesis methods: Two review authors independently selected trials, extracted data, assessed risk of bias, and assessed trial trustworthiness. We used random-effects meta-analysis to combine data. We assessed the certainty of the evidence using GRADE. Included studies: We included three RCTs with 18,974 participants in total. The trials were conducted in both high- and low-resource settings and involved participants at both low and high risk of PPH. The trials compared intravenous TXA (1 g) and standard care versus placebo (saline) and standard care. After applying our trustworthiness checklist, we did not include any of the 12 trials in the previous version of this review. Synthesis of results: Prophylactic tranexamic acid in addition to standard care compared to placebo in addition to standard care. TXA results in little to no difference in blood loss >= 500 mL (risk ratio (RR) 0.93, 95% confidence interval (CI) 0.81 to 1.06; 2 studies, 18,897 participants; 5 fewer per 1000, 95% CI 15 fewer to 5 more; high-certainty evidence). TXA likely results in little to no difference in blood loss >= 1000 mL (RR 0.86, 95% CI 0.69 to 1.07; 2 studies, 18,897 participants; 3 fewer per 1000, 95% CI 6 fewer to 1 more; moderate-certainty evidence). TXA likely results in little to no difference in severe morbidity (RR 0.88, 95% CI

0.69 to 1.12; 1 study, 15,066 participants; 2 fewer per 1000, 95% CI 6 fewer to 2 more; moderate-certainty evidence). TXA results in little to no difference in receipt of blood transfusion (RR 1.00, 95% CI 0.95 to 1.06; 3 studies, 18,972 participants; 0 fewer per 1000, 95% CI 10 fewer to 12 more; high-certainty evidence). TXA may result in little to no difference in receipt of additional surgical interventions to control PPH (RR 0.63, 95% CI 0.32 to 1.23; 2 studies, 18,972 participants; 1 fewer per 1000, 95% CI 2 fewer to 1 more; low-certainty evidence). In women with anaemia, TXA results in little to no difference in receipt of additional uterotonics (RR 1.02, 95% CI 0.94 to 1.10; 1 study, 15,066 participants; 3 more women per 1000, 95% CI 8 fewer to 24 more; high-certainty evidence). In women with no anaemia, TXA results in a slight reduction in receipt of additional uterotonics (RR 0.75, 95% CI 0.61 to 0.92; 1 study, 3891 participants; 24 fewer women per 1000, 95% CI 38 fewer to 8 fewer; high-certainty evidence). TXA likely results in little to no difference in maternal satisfaction. The evidence is very uncertain about the effect of TXA on maternal death, thromboembolic events, and hysterectomy (very low-certainty evidence): maternal death (RR 0.99, 95% CI 0.39 to 2.49; 2 studies, 15,081 participants; 0 fewer per 1000, 95% CI 1 fewer to 2 more); thromboembolic events (RR 0.25, 95% CI 0.03 to 2.24; 3 studies, 18,774 participants; 3 fewer women per 10,000, 95% CI 4 fewer to 5 more); hysterectomy (RR 0.89, 95% CI 0.36 to 2.19; 1 study, 15,066 participants; 1 fewer women per 10,000, 95% CI 9 fewer to 16 more). Authors' conclusions: Adding prophylactic TXA to standard care of women during vaginal birth makes little to no difference to blood loss >= 500 mL and likely makes little to no difference to blood loss >= 1000 mL or the risk of severe morbidity, compared to placebo and standard care. TXA may result in little to no difference in additional surgical interventions to control PPH and results in little to no difference in blood transfusions. One trial found that TXA reduced the use of additional uterotonics in women without anaemia, whereas the largest trial found little to no difference in the use of additional uterotonics in women with anaemia. Although there were very few serious adverse events reported, the evidence is insufficient to draw conclusions about the effect of TXA on maternal death, thromboembolic events, hysterectomy, or seizures. TXA likely results in little to no difference in maternal satisfaction. These findings are based mainly on two large trials. In the smaller of these, less than 30% of study participants were at high risk of PPH. In the largest trial, all participants had moderate to severe anaemia. Those making decisions about routine administration of prophylactic TXA for all women having vaginal births should consider that current evidence does not show a benefit of TXA for blood loss outcomes and related morbidity, and the evidence is very uncertain about serious adverse events. Registration: Protocol (2009) DOI: 10.1002/14651858.CD007872Original review (2010) DOI: 10.1002/14651858.CD007872.pub2Review update (2015) DOI: 10.1002/14651858.CD007872.pub3.Copyright © 2025 The Authors. Cochrane Database of Systematic Reviews published by John Wiley & Sons, Ltd. on behalf of The Cochrane Collaboration.

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6. **Effect of Prophylactic Intravenous Tranexamic Acid on Blood Loss After Vaginal Delivery: A Randomized Control Study.**

Item Type: Journal Article

Authors: Shrestha S.;Uprety S.;Shah R. and Kharel, B.

Publication Date: 2025

Journal: Health Science Reports 8(2) (pagination), pp. Article Number: e70415. Date of Publication: 01 Feb 2025

Abstract: Background and Aim: To determine the effect of prophylactic intravenous tranexamic acid on blood loss after vaginal delivery in women at low risk of postpartum hemorrhage. Method(s): Prospective randomized controlled study (RCT registration: researchregistry10144). Over the study duration of 12 months, a total of 226 parous women with singleton vaginal delivery at term pregnancy with cephalic presentation participated in the study. Participants with pre-existing medical complications and obstetric complications were excluded from the study. Additionally, patients with a previous history of thromboembolism and allergy to tranexamic acid were also excluded from the study. The study participants were divided into two groups based on the intervention considered. This was done with a computer-based random table generator. Group A received an intervention of 10 mL (1 g) of intravenous tranexamic acid while the other group received 10 mL of normal saline as a placebo immediately after delivery of the fetus. Blood loss was calculated by measuring the weights of blood-soaked gauze, gowns, sheets, and tampons before and after delivery. Hemoglobin and hematocrit were done before and 12 h after delivery. Result(s): Total number of participants were 226. The mean calculated blood loss and the mean measured blood loss was significantly less in Group A in comparison to Group B (379.17 +/- 46.89 mL in Group A and 426.66 +/- 58.45 mL in Group B, p Conclusion(s): The use of prophylactic intravenous tranexamic acid is associated with reduced blood loss after vaginal delivery. Furthermore, research needs to be done.Copyright © 2025 The Author(s). Health Science Reports published by Wiley Periodicals LLC.

7. **Uptake of orally administered tranexamic acid in women during active labor: A pilot intervention study on prophylactic treatment of postpartum hemorrhage.**

Item Type: Journal Article

Authors: Strindfors G.;Lindqvist P.G. and Endler, M.

Publication Date: 2025

Journal: Acta Obstetricia Et Gynecologica Scandinavica 104(7), pp. 1347–1356

Abstract: Introduction: Postpartum hemorrhage is the leading cause of maternal mortality worldwide. Several studies have confirmed that tranexamic acid is effective in treating postpartum hemorrhage once started, but its prophylactic effect is under debate. As of now, most studies involve intravenous administration, and the uptake of tranexamic acid in women during active labor is unknown. This is a pilot study in preparation for a larger randomized controlled trial on the prophylactic effect of oral tranexamic acid on postpartum hemorrhage. The study aims to assess the uptake of oral tranexamic acid during active labor. Material(s) and Method(s): Our study is a pilot intervention study. The study population consisted of 51 women >=36 gestational weeks with planned vaginal delivery at Sodersjukhuset, Stockholm, from December 2022 through February 2023. The participants were randomized 1:1:1:1 to receive 2 g of tranexamic acid as an oral solution, tablets, effervescent tablets, or 1 g of intravenous tranexamic acid, near full cervical dilatation. Blood samples were taken before and 30, 60, 120, 240, 360, and 480 min after tranexamic acid administration. Plasma concentration of tranexamic acid was measured using liquid chromatography-tandem mass spectrometry. Mean values were compared between groups using analysis of variance. Our main outcome measures were time to therapeutic level, duration in therapeutic interval, and maximum plasma concentration of tranexamic acid. Result(s): Therapeutic level (5.0 mg/L) was reached at the 2-h time point for oral (7.11 +/- 3.31 mg/L) and the 30-min time point for intravenous forms (30.6 +/- 15.0 mg/L). Duration in therapeutic intervals for oral and intravenous forms was 6 and 3.5 h (p Conclusion(s): All oral forms of tranexamic acid show similar and adequate uptake when administered during labor. Uptake is lower and slower compared with intravenous administration, but the duration in the therapeutic interval is longer.Copyright © 2025 The Author(s). Acta Obstetricia et Gynecologica Scandinavica published by John Wiley & Sons Ltd on behalf of Nordic Federation of Societies of Obstetrics and Gynecology (NFOG).

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8. **The effect of tranexamic acid on postpartum bleeding in women with moderate and severe anaemia (WOMAN-2): an international, randomised, double-blind, placebo-controlled trial.**

Item Type: Journal Article

Publication Date: 2024

Journal: The Lancet 404(10463), pp. 1645–1656

Abstract: Background: Tranexamic acid, given within 3 h of birth, reduces bleeding deaths in women with postpartum haemorrhage. We examined whether giving tranexamic acid shortly after birth can prevent postpartum haemorrhage in women with moderate or severe anaemia. Method(s): This international, randomised, double-blind, placebo-controlled trial was done in 34 hospitals across four countries (Nigeria, Pakistan, Tanzania, and Zambia). We recruited women of any age in active labour with moderate or severe anaemia (haemoglobin Method(s): This international, randomised, double-blind, placebo-controlled trial was done in 34 hospitals across four countries (Nigeria, Pakistan, Tanzania, and Zambia). We recruited women of any age in active labour with moderate or severe anaemia (haemoglobin Finding(s): From Aug 24, 2019, to Sept 19, 2023, 16 586 women aged 14-50 years were invited to take part and 1518 were excluded. 7580 women were randomly assigned to receive tranexamic acid and 7488 to receive placebo. Primary outcome data were unavailable for one woman in each group. The median time interval from the start of the administration of the trial treatment to the diagnosis of postpartum haemorrhage was 18.5 min (IQR 5-58); 20 min (8-64) in women with moderate anaemia and 13 min (7-44) in women with severe anaemia. 358 (35%) of 1024 with postpartum haemorrhage for whom time data were available were diagnosed before the trial treatment had been fully administered. Clinically diagnosed postpartum haemorrhage occurred in 530 (7.0%) of 7579 in the tranexamic acid group and in 497 (6.6%) of 7487 in the placebo group (risk ratio [RR] 1.05, 95% CI 0.94-1.19). There was no strong evidence against the null hypothesis of homogeneity of effects for any of the prespecified subgroup analyses: severity of anaemia (p=0.44), antepartum haemorrhage (p=0.044), birth canal trauma (p=0.37), use of pain control (p=0.37), and baseline risk of postpartum haemorrhage (p=0.31). There were no vascular occlusive events (pulmonary embolism, deep vein thrombosis, stroke, and myocardial infarction) reported in either group. There were no adverse events related to the treatment and no treatment-related deaths. Interpretation(s): In women with moderate and severe anaemia, giving tranexamic acid within 15 min of the umbilical cord being clamped did not reduce the risk of clinically diagnosed postpartum haemorrhage. Funding(s): The Bill & Melinda Gates Foundation and the Wellcome Trust.

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9. **Tranexamic acid in preventing postpartum blood loss in vaginal delivery: a double-blinded randomized controlled trial.**

Item Type: Journal Article

Authors: Arya P.;Yadav G.;Singh P.;Ghuman N.K.;Sharma C.;Gothwal M. and Kathuria, P.

Publication Date: 2024

Journal: American Journal of Obstetrics and Gynecology MFM 6(9) (pagination), pp. Article Number: 101450. Date of Publication: 01 Se 2024

Abstract: BACKGROUND: Postpartum hemorrhage (PPH) is an obstetrical emergency that occurs in 1% to 10% of all deliveries and contributes to nearly one-quarter of all maternal deaths worldwide. Tranexamic acid has been established as an adjunct in the treatment of PPH but its role in its prevention of PPH following vaginal delivery has not been widely studied. OBJECTIVE(S): This study aimed to assess the effect of prophylactic tranexamic acid (1 g) along with active management of the third stage of labor in reducing postpartum blood loss and the incidence of postpartum hemorrhage after vaginal delivery. STUDY DESIGN: In this randomized controlled trial, 650 women with singleton pregnancies at >=34 weeks of gestation who were undergoing vaginal delivery were included. Eligible women were randomly assigned to receive either 1 g of tranexamic acid or placebo intravenously along with active management of the third stage of labor. Calibrated blood collection bags were used to measure postpartum blood loss during the third and fourth stages of labor. RESULT(S): Of 886 women approached for the study, 650 who met the inclusion criteria were enrolled, and 320 in group A and 321 in group B were analyzed. The maternal characteristics were similar between the groups. The mean blood loss did not differ significantly between the intervention and placebo groups (378.5+/-261.2 mL vs 383.0+/-258.9 mL; P=.93). The incidence of primary postpartum hemorrhage was comparable in both groups (15.9% in group A and 15.3% in group B; P=.814). The median quantitative decreases in hemoglobin levels within 12 to 24 hours after delivery were 0.60 g% (interquartile range, 0.40-0.90) in group A and 0.60 g% (interquartile range, 0.40-0.80) in group B, which were comparable in both groups (P=.95). The most common adverse effect reported was dizziness, and there was no thromboembolic event at 3 months follow-up in either group. Conclusion(s): The use of tranexamic acid as a prophylactic measure along with active management of the third stage of labor does not provide additional benefit in reducing the postpartum blood loss and incidence of postpartum hemorrhage after vaginal delivery.Copyright © 2024 Elsevier Inc.

10. **EFFECTIVENESS OF INTRAVENOUS TRANEXAMIC ACID IN REDUCING BLOOD LOSS DURING AND AFTER EMERGENCY CAESAREAN SECTION - A PROSPECTIVE RANDOMISED DOUBLE-BLIND PLACEBO-CONTROLLED STUDY.**

Item Type: Journal Article

Authors: Boksi T.;Neogi M.;De S. and Paul, S.

Publication Date: 2024

Journal: International Journal of Academic Medicine and Pharmacy 6(2), pp. 859–864

Abstract: Background: Maternal mortality from postpartum haemorrhage after lower segment caesarean sections (LSCS) is one of the common causes. As an antifibrinolytic medication, tranexamic acid injection lowers blood loss during and after surgery. The primary goals of this trial were to determine if tranexamic acid, at a dosage of 15 mg/kg body weight, is useful in reducing blood loss during and following emergency caesarean sections and can able to prevent serious side effects to a pregnant mother. Material(s) and Method(s): One hundred pregnant women were randomly assigned to two groups: placebo (5% dextrose) and injectable tranexamic acid (15mg/kg). ANOVA was used to compare the means of three or more numerical samples (using the F distribution). The Z2 test was employed to see whether the proportions differed significantly. Pearson correlation analysis was used to calculate the correlation. Result(s): In this study we found that there was no change in blood pressure and heart rate before and after operation. But there was decrease in haemoglobin percentage as well as haematocrit value in post-operative period. But these two values (haemoglobin percentage & haematocrit) were more decrease in placebo group than other group. In tranexamic acid group, two hours after surgery the haemoglobin percentage was 31.6980+/-1.1494. In placebo, two hours after surgery the haemoglobin percentage was 30.7551+/-3.2236. These changes in haemoglobin percentage and haematocrit were statistically significant. But we did not find any serious side effect. Conclusion(s): We achieved from our study that tranexamic acid @15 mg /kg body weight given before 15 minute of skin incision reduced obstetric blood loss during LUCS without any serious side effects.

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11. **Comparison of Tranexamic Acid Versus Placebo for Prevention of Postpartum Hemorrhage in Females Undergoing Delivery at Term.**

Item Type: Journal Article

Authors: Fehmida;Liaqat Z. and Fateh, R.

Publication Date: 2024

Journal: Medical Forum Monthly 35(12), pp. 67–70

Abstract: Objective: The objective of the present study was to compare the mean blood loss with intravenous tranexamic acid versus placebo in pregnant females presenting at term for delivery. Study Design: Randomized control trial study. Place and Duration of Study: This study was conducted at the Department of Obstetrics and Gynecology, Saidu group of Hospital, Swat, from January 2023 to June 2023. Method(s): Through non-probability consecutive sampling, a Sample size of 250 women (Group A-TXA group n=125, Group B-Placebo n=125). In group A, females were given intravenous tranexamic acid. In group B, females were given an injection of normal saline. All females were followed till delivery. After delivery, the female was shifted to the ward and blood loss was measured. Result(s): Mean+/- S. D of the pre-operative hemoglobin (HB) of the participants in groups A and B was 11.99 +/- 0.72 and 12.44 +/- 0.86 g/dL, respectively (P Conclusion(s): The research emphasized the importance of tranexamic acid in the management of post-partum hemorrhages, the enhancement of post-partum hemoglobin levels, and the potential reduction in the need for blood transfusions.Copyright © 2024, Medical Academic Foundation. All rights reserved.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:&id=doi:10.60110%2Fmedforum.351214&issn=1029-385X&isbn=&volume=35&issue=12&spage=67&pages=67-70&date=2024&title=Medical+Forum+Monthly&atitle=Comparison+of+Tranexamic+Acid+Versus+Placebo+for+Prevention+of+Postpartum+Hemorrhage+in+Females+Undergoing+Delivery+at+Term&aulast=Liaqat&pid=%3Cauthor%3EFehmida%3BLiaqat+Z.%3BFateh+R.%3C%2Fauthor%3E%3CAN%3E2035901667%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

12. **Injection Tranexamic Acid in Preventing Postpartum Hemorrhage Following Vaginal Delivery: A One-year Hospital-based Randomized Placebo-controlled Trial.**

Item Type: Journal Article

Authors: Hinchigeri K.;Patil K.P.;Patil A. and Metgud, M. C.

Publication Date: 2024

Journal: Journal of South Asian Federation of Obstetrics and Gynaecology 16(3), pp. 239–242

Abstract: Introduction: Tranexamic acid (TXA) injections, known for their antifibrinolytic properties, are gaining wider acceptance as a treatment for postpartum hemorrhage (PPH) on a global scale. Aims and objectives: The purpose of this study was to evaluate the effectiveness of TXA and its potential side effects in preventing PPH following vaginal birth. Material(s) and Method(s): This randomized controlled trial, conducted in a multispecialty hospital in Belagavi, India, involved 210 term patients over 1 year from January to December 2019. Subjects were randomly assigned into two cohorts using computer-based randomization. Each cohort received 10 prophylactic units of oxytocin. One group received 1 gm of intravenous TXA, while the other received 10 mL of normal saline intravenously within 2 minutes after delivery. Blood loss was measured using calibrated drapes, and mean changes in hemoglobin (Hb) and packed cell volume (PCV) were assessed from pre-delivery to postnatal day 2. Data assessment was carried out using the statistical program R i386 3.6.3. Result(s): Patients in the research had an average age of 23.43 years with a standard deviation (SD) of 3.26 years. The occurrence of PPH was observed in 5 individuals (4.85%) in the TXA group and 12 individuals (11.21%) in the placebo group (p = 0.0912). Furthermore, the mean blood loss was significantly lesser in the TXA group, measuring 250.10 mL with an SD of 133.54 mL, compared to 334.2 mL with an SD of 141.78 mL in the placebo group (p Conclusion(s): Tranexamic acid can serve as a supplementary treatment alongside uterotonics during the third stage of labor, given its demonstrated clinical effectiveness and safety in preventing PPH.Copyright © The Author(s). 2024 Open Access.

13. **Evaluating tranexamic acid for the prevention and treatment of obstetric hemorrhage.**

Item Type: Journal Article

Authors: Kowalczyk J.J.;Cecconi M. and Butwick, A. J.

Publication Date: 2024

Journal: Current Opinion in Obstetrics and Gynecology 36(2), pp. 88–96

Abstract: Purpose of review: Tranexamic acid (TXA) has emerged as a promising pharmacological adjunct to treat and prevent postpartum hemorrhage (PPH). We provide an overview of TXA, including its pharmacology, key findings of randomized trials and observational studies, and critical patient safety information. Recent findings Pharmacokinetic data indicate that TXA infusions result in peak plasma concentration within 3min (range: 1-6.6min). Ex-vivo pharmacodynamic data suggest that low-dose TXA (5mg/kg) inhibits maximum lysis for at least 1h. In predominantly developing countries, TXA has demonstrated a 19% reduction in the risk of bleeding-related death among patients with PPH. Based on high-quality randomized trials, TXA prophylaxis does not effectively reduce the risk of PPH during vaginal delivery and is likely ineffective in reducing the PPH risk during cesarean delivery. TXA exposure does not increase the risk of maternal thrombotic events. Maternal deaths have occurred from accidental intrathecal TXA injection from look-alike medication errors. Summary TXA has shown promise as an important adjunct for PPH treatment, especially in low-resource settings. However, TXA is not recommended as PPH prophylaxis during vaginal or cesarean delivery. Patient safety initiatives should be prioritized to prevent maternal death from accidental intrathecal TXA injection.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:38170626&id=doi:10.1097%2FGCO.0000000000000935&issn=1040-872X&isbn=&volume=36&issue=2&spage=88&pages=88-96&date=2024&title=Current+Opinion+in+Obstetrics+and+Gynecology&atitle=Evaluating+tranexamic+acid+for+the+prevention+and+treatment+of+obstetric+hemorrhage&aulast=Kowalczyk&pid=%3Cauthor%3EKowalczyk+J.J.%3BCecconi+M.%3BButwick+A.J.%3C%2Fauthor%3E%3CAN%3E2030822143%3C%2FAN%3E%3CDT%3EReview%3C%2FDT%3E

14. **Tranexamic acid to reduce blood loss in women at high risk of postpartum hemorrhage undergoing cesarean delivery-a randomized controlled trial.**

Item Type: Journal Article

Authors: Neumann B.G.;Metgud M.C.;Hoffman M.K.;Patil K.;Savanur M.;Hanji V.;Ganachari M.S.;Somannavar M. and Goudar, S. S.

Publication Date: 2024

Journal: AJOG Global Reports 4(1) (pagination), pp. Article Number: 100316. Date of Publication: 01 Feb 2024

Abstract: BACKGROUND: Postpartum hemorrhage is a leading cause of maternal morbidity and mortality. Tranexamic acid has proven to be useful in treating hemorrhage from acute blood loss. However, its role in preventing blood loss in women at high risk of postpartum hemorrhage undergoing cesarean delivery is not well studied. OBJECTIVE(S): This study aimed to assess the role of tranexamic acid in reducing blood loss during elective and unscheduled cesarean deliveries in women at high risk of postpartum hemorrhage. STUDY DESIGN: This was a prospective, placebo-controlled, randomized controlled trial from March 2021 to February 2022 at the Karnatak Lingayat Education Society Dr. Prabhakar Kore Hospital and Medical Research Centre, Belagavi, India. Women at a high risk of postpartum hemorrhage undergoing cesarean delivery were recruited and randomized to receive either tranexamic acid or placebo (1:1) at least 10 minutes before skin incision. High-risk factors for postpartum hemorrhage included obesity, hypertension, multiparity, previous cesarean delivery, multiple pregnancy, abnormally implanted placenta, placenta previa, abruption, uterine leiomyomas, polyhydramnios, and fetal macrosomia. The primary outcome was blood loss, calculated by a formula using pre- and postoperative hematocrit levels. In addition, gravimetrically measured blood loss was measured and compared between the 2 groups. RESULT(S): A total of 212 women met the inclusion criteria and were randomized (tranexamic acid [n=106] and placebo [n=106]). The mean blood loss estimates were 400.9 mL in the tranexamic acid group and 597.9 mL in the placebo group (PCONCLUSION(S): High-risk women receiving tranexamic acid had significantly less blood loss than women receiving placebo during cesarean delivery.Copyright © 2024 The Authors

15. **Tranexamic acid versus oxytocin prophylaxis in reducing post-partum blood loss, in low-risk pregnant women: TRANOXY STUDY, a phase III randomized clinical trial.**

Item Type: Journal Article

Authors: Ragusa A.;Ficarola F.;Ferrari A.;Spirito N.;Ardovino M.;Giraldi D.;Stuzziero E.;Rinaldo D.;Procaccianti R.;Larciprete G.;De Luca C.;D'Avino S.;Principi G.;Angioli R. and Svelato, A.

Publication Date: 2024

Journal: eClinicalMedicine 73(pagination), pp. Article Number: 102665. Date of Publication: 01 Jul 2024

Abstract: Background: To assess the equivalence of tranexamic acid (TRAN) versus synthetic oxytocin (OXY) in reducing post-partum blood loss, in full-term patients (37-42 weeks), at low risk of post-partum hemorrhage, with vaginal childbirth. Method(s): Phase III, randomized (1:1), open-label, longitudinal, multi-center, prospective clinical trial (Prot. n 63209, ClinicalTrials.gov Identifier: NCT02775773). From January 7, 2020, to June 30, 2023, a total of 256 women were enrolled at two general urban community hospitals in Italy, serving a multi-ethnic patient population with National Health Insurance. The primary outcome was to explore a potential equivalence between the two treatments (OXY and TRAN) in preventing total blood loss. Therefore, we randomized 231 women into two groups: Group A (OXY), 127 women who were administered 10UI intramuscularly within 5 min from childbirth; Group B (TRAN), 104 women to whom 1-g slow intravenous infusion was administered within 5 min from childbirth. Finding(s): At the time of delivery, mean blood loss for OXY group versus TRAN group was 269.12 mL versus 263.88 mL, respectively, with equivalence between the two groups. Similarly, there was equivalence in total blood loss between the OXY and the TRAN group (397.66 mL versus 405.64 mL, respectively. No statistical differences between Hb levels at admission and discharge in the two groups were reported. No difference was found in terms of additional uterotonic and surgical therapies between the two groups of patients. Neither group showed thrombotic complications at check-up performed after 7 days or after a questionnaire regarding adverse effects, subjected after 40 days. Interpretation(s): The study shows the equivalence of tranexamic acid versus synthetic oxytocin in post-partum blood loss prophylaxis in term patients at low risk of PPH with vaginal childbirth. The safety profiles of OXY and TRAN were similar. Funding(s): None.Copyright © 2024 The Author(s)

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:&id=doi:10.1016%2Fj.eclinm.2024.102665&issn=2589-5370&isbn=&volume=73&issue=&spage=102665&pages=&date=2024&title=eClinicalMedicine&atitle=Tranexamic+acid+versus+oxytocin+prophylaxis+in+reducing+post-partum+blood+loss%2C+in+low-risk+pregnant+women%3A+TRANOXY+STUDY%2C+a+phase+III+randomized+clinical+trial&aulast=Ragusa&pid=%3Cauthor%3ERagusa+A.%3BFicarola+F.%3BFerrari+A.%3BSpirito+N.%3BArdovino+M.%3BGiraldi+D.%3BStuzziero+E.%3BRinaldo+D.%3BProcaccianti+R.%3BLarciprete+G.%3BDe+Luca+C.%3BD%27Avino+S.%3BPrincipi+G.%3BAngioli+R.%3BSvelato+A.%3C%2Fauthor%3E%3CAN%3E2032545577%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

16. **Tranexamic acid for preventing postpartum haemorrhage after caesarean section.**

Item Type: Journal Article

Authors: Rohwer C.;Rohwer A.;Cluver C.;Ker K. and Hofmeyr, G. J.

Publication Date: 2024

Journal: Cochrane Database of Systematic Reviews 2024(11) (pagination), pp. Article Number: CD016278. Date of Publication: 13 Nov 2024

Abstract: Rationale: Postpartum haemorrhage (PPH) is common and potentially life-threatening. The antifibrinolytic drug tranexamic acid (TXA) is recommended for treating PPH; it reduces the risk of death from haemorrhage by one-third when given soon after bleeding onset, but not overall risk of death. Interest in whether TXA may be effective in preventing PPH is growing. Evidence indicates that TXA given more than three hours after injury to bleeding trauma patients increases mortality. Potential harm becomes critical in prophylactic use of TXA. Reliable evidence of the effect and safety profile of TXA is required before widespread prophylactic use can be considered. Objective(s): To assess the effects of TXA for preventing PPH compared to placebo or no treatment (with or without uterotonic co-treatment) in women during caesarean birth. Search Method(s): We searched CENTRAL, MEDLINE, Embase, and WHO ICTRP to 20 February 2024 and searched reference lists of retrieved studies. Eligibility criteria: We included randomised controlled trials (RCTs) evaluating the use of TXA alone or plus uterotonics during caesarean birth for preventing PPH. Trials needed to be prospectively registered (i.e. before starting recruitment). We applied a trustworthiness checklist. Outcome(s): The critical outcome was blood loss >= 1000 mL, measured using estimated or calculated methods. Important outcomes included maternal death, severe morbidity, blood transfusion, the use of additional surgical interventions to control PPH, thromboembolic events, use of additional uterotonics, hysterectomy, maternal satisfaction, and breastfeeding at discharge. Risk of Bias: We assessed risk of bias in the included studies using Cochrane's RoB 1 tool. Synthesis methods: Two review authors independently selected trials, extracted data, and assessed risk of bias and trial trustworthiness. We pooled data using random-effects meta-analysis. We assessed the certainty of the evidence using GRADE. Included studies: We included six RCTs with 15,981 participants. All 12 trials in the previous version of this review were not included after review of trial registrations and trustworthiness checklists. Most included studies involved women at low risk of PPH and were conducted in high-resource settings. Synthesis of results: Prophylactic TXA in addition to standard care compared to placebo in addition to standard care or standard care alone. TXA results in little to no difference in estimated blood loss >= 1000 mL (risk ratio (RR) 0.94, 95% confidence interval (CI) 0.79 to 1.11; 4 RCTs; n = 13,042; high certainty evidence), resulting in 8 fewer per 1000 women having estimated blood loss >= 1000 mL (from 30 fewer to 16 more). TXA likely results in a slight reduction in calculated blood loss >= 1000 mL (RR 0.83, 95% CI 0.76 to 0.92; 2 RCTs; n = 4327; moderate certainty evidence), resulting in 53 fewer per 1000 having calculated blood loss >= 1000 mL (from 75 fewer to 25 fewer). The evidence is very uncertain about the effect of TXA on maternal death (one event in placebo group, none in TXA group). No trials measured severe morbidity. TXA likely results in little to no difference in blood transfusion (RR 0.88, 95% CI 0.72 to 1.08; 5 RCTs; n = 15,740; moderate certainty evidence), resulting in 4 fewer per 1000 women requiring a blood transfusion (from 10 fewer to 3 more). TXA results in little to no difference in additional surgical interventions to control PPH (RR 1.02, 95% CI 0.86 to 1.22; 4 RCTs; n = 15,631; high certainty evidence), resulting in 1 more per 1000 women requiring additional surgical intervention (from 4 fewer to 7 more). The evidence is very uncertain about the effect of TXA on thromboembolic events (RR 1.40, 95% CI 0.22 to 8.90; 4 RCTs; n = 14,480; very low certainty evidence), resulting

in 1 more per 1000 women having a thromboembolic event (from 2 fewer to 17 more). TXA results in little to no difference in the need for additional uterotonics (RR 0.88, 95% CI 0.78 to 1.00; 4 RCTs; n = 15,728; high certainty evidence), resulting in 15 fewer per 1000 women requiring additional uterotonics (from 27 fewer to 0 fewer). The evidence is very uncertain about the effect of TXA on hysterectomy (RR 0.80, 95% CI 0.20 to 3.29; 2 RCTs; n = 4546; very low certainty evidence), resulting in 3 fewer per 10,000 women requiring a hysterectomy (from 11 fewer to 31 more). One trial measuring maternal satisfaction reported no difference between groups at day two postpartum. No data were available on breastfeeding. Overall, studies had low risk of bias. We downgraded the certainty of evidence mainly for imprecision. Authors' conclusions: Prophylactic TXA in addition to standard care during caesarean birth results in little to no difference in estimated blood loss >= 1000 mL and likely results in a slight reduction in calculated blood loss >= 1000 mL compared to placebo. There were no data for severe morbidity due to PPH. Event rates for further interventions to control PPH were low and similar across groups. Prophylactic TXA thus results in little to no difference between groups for additional surgical interventions (32 versus 31 per 1000), and likely results in little to no difference between groups for blood transfusions (31 versus 36 per 1000) and use of additional uterotonics (107 versus 121 per 1000). There were very few events for the outcomes maternal death (1 in placebo group), thromboembolic events (2 versus 3 per 1000), and hysterectomy (1 per 1000 in each group). Evidence for these serious adverse events is therefore very uncertain. Decisions about implementing routine prophylactic TXA during caesarean birth should not only consider outcomes related to blood loss, but also the relatively low rates of PPH morbidity and uncertainty of serious adverse events. Most studies included women at low risk of PPH, thereby precluding any conclusions about women at high risk of PPH. Cost associated with routine use of an additional drug for all caesarean births needs to be considered. Registration: The published protocol and updates to the review can be accessed:. Protocol (2009) DOI: 10.1002/14651858.CD007872. Original Review (2010) DOI: 10.1002/14651858.CD007872.pub2. Review Update (2015) DOI: 10.1002/14651858.CD007872.pub3.

17. **Use of Tranexamic Acid in Preventing Postpartum Hemorrhage Following Vaginal Delivery.**

Item Type: Journal Article

Authors: Shah H.N.;Raghavan V.;Shukla J. and Sandeepti, K. P.

Publication Date: 2024

Journal: International Journal of Pharmaceutical and Clinical Research 16(7), pp. 300–304

Abstract: Introduction: Tranexamic acid (TXA) injections due to its antifibrinolytic properties can be used as a treatment for postpartum hemorrhage (PPH) on a global scale along with uterotonics. Aims and Objectives: The purpose of this study was to evaluate the safety and effectiveness of TXA and to identify potential side effects if any in preventing PPH following vaginal delivery. Material(s) and Method(s): This randomized controlled trial, conducted in a multispecialty Dhiraj hospital in Vadodara, India, involved 300 term patients over one year from February 2023 to March 2024. Subjects were randomly assigned into two groups. Each cohort received 10 prophylactic units of oxytocin. One group received 1 gm of intravenous TXA, while the other received 10 mL of normal saline intravenously within 2-3 minutes after delivery. Blood loss was measured using calibrated drapes, and mean changes in hemoglobin (Hb) and packed cell volume (PCV) were assessed from pre-delivery to postnatal day 2. Data analysis was done using SPSS (Statistical Package for the Social Sciences) software. Result(s): Patients in the research had an average age of 23.43 years with a standard deviation (SD) of 3.26 years. The occurrence of PPH was observed in 10 individuals (6.66%) in the TXA group and 17 individuals (11.33%) in the placebo group (p = 0.226). Furthermore, the mean blood loss was significantly lesser in the TXA group, measuring 250.10 mL with an SD of 133.54 mL, compared to 334.2 mL with an SD of 141.78 mL in the placebo group (p Conclusion(s): Tranexamic acid can serve as a supplementary treatment alongside uterotonics during the third stage of labor, as demonstrated in this study.

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18. **Efficacy of Tranexamic Acid on Blood Loss in Normal Vaginal Delivery.**

Item Type: Journal Article

Authors: Sumathi G.;Sridevi A. and Aparna, B.

Publication Date: 2024

Journal: International Journal of Pharmaceutical and Clinical Research 16(12), pp. 331–336

Abstract: Introduction: Postpartum hemorrhage (PPH) is a substantial cause of maternal death, particularly in underdeveloped countries. Identifying safe, user-friendly, and cost-effective regimens is critical for managing postpartum hemorrhage (PPH). People often use Tranexamic acid (TA), an antifibrinolytic drug, to prevent and treat hemorrhage. It should be evaluated to ensure that it meets these requirements. This study sought to determine the efficacy of tranexamic acid in reducing postpartum blood loss following normal vaginal birth. Material(s) and Method(s): We randomly assigned 104 pregnant women with singleton term pregnancies intended for vaginal delivery to one of two groups: tranexamic acid (group A) or control (group B). We measured blood pressure, respiration rate, pulse rate, oxygen saturation, urine output (ml/hr), hemoglobin (gm), and PCV (%) before and after delivery. We collected data on the need for additional uterotonics and the length of hospital stay. Result(s): The mean blood loss from delivery to 30 minutes post-delivery was 92.15 ml in group A and 178.9 ml in group B. The volume of blood loss decreased significantly from 30 minutes to 120 minutes post-delivery, measuring 25.78 ml in group A and 54.92 ml in group B. Yang H et al. (22.3%). Group A had considerably higher mean levels of SBP, DBP, pulse rate, respiratory rate, and SpO2 than group B. Conclusion(s): Tranexamic acid, when administered prophylactically as an antifibrinolytic medication, appears to diminish blood loss during normal labor, reduce the necessity for extra uterotonics, shorten hospital stays, and effectively lower the risk of postpartum haemorrhage.

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19. **Effects of tranexamic acid preconditioning on the incidence of postpartum haemorrhage in vaginal deliveries with identified risk factors in China: a prospective, randomized, open-label, blinded endpoint trial.**

Item Type: Journal Article

Authors: Zhang P.;Jia Y.J.;Lv Y.;Fan Y.F.;Geng H.;Zhao Y.;Song H.;Cui H.Y. and Chen, X.

Publication Date: 2024

Journal: Annals of Medicine 56(1) (pagination), pp. Article Number: 2389302. Date of Publication: 2024

Abstract: Objective: This study aimed to evaluate the effects of tranexamic acid (TXA) in preventing postpartum haemorrhage (PPH) among women with identified risk factors for PPH undergoing vaginal delivery in China. Method(s): This prospective, randomized, open-label, blinded endpoint (PROBE) trial enrolled 2258 women with one or more risk factors for PPH who underwent vaginal delivery. Participants were randomly assigned in a 1:1 ratio to receive an intravascular infusion of 1 g TXA or a placebo immediately after the delivery of the infant. The primary outcome assessed was the incidence of PPH, defined as blood loss >=500 mL within 24 h after delivery, while severe PPH was considered as a secondary outcome and defined by total blood loss >=1000 mL within 24 h. Result(s): 2245 individuals (99.4%) could be followed up to their primary outcome. PPH occurred in 186 of 1128 women in the TXA group and in 215 of 1117 women in the placebo group (16.5% vs. 19.2%; RR, 0.86; 95% CI, 0.72 to 1.02; p = 0.088). Regarding secondary outcomes related to efficacy, women in the TXA group had a significant lower rate of severe PPH than those in the placebo group (2.7% vs. 5.6%; RR, 0.49; 95% CI, 0.32 to 0.74; p = 0.001; adjusted p = 0.002). Similarly, there was a significant reduction in the use of additional uterotonic agents (7.8% vs. 15.6%; RR, 0.50; 95% CI, 0.39 to 0.63; p Conclusion(s): In total population with risk factors for PPH, the administration of TXA following vaginal delivery did not result in a statistically significant reduction in the incidence of PPH compared to placebo; however, it was associated with a significantly lower incidence of severe PPH.Copyright © 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:39129492&id=doi:10.1080%2F07853890.2024.2389302&issn=0785-3890&isbn=&volume=56&issue=1&spage=2389302&pages=&date=2024&title=Annals+of+Medicine&atitle=Effects+of+tranexamic+acid+preconditioning+on+the+incidence+of+postpartum+haemorrhage+in+vaginal+deliveries+with+identified+risk+factors+in+China%3A+a+prospective%2C+randomized%2C+open-label%2C+blinded+endpoint+trial&aulast=Zhang&pid=%3Cauthor%3EZhang+P.%3BJia+Y.-J.%3BLv+Y.%3BFan+Y.-F.%3BGeng+H.%3BZhao+Y.%3BSong+H.%3BCui+H.-Y.%3BChen+X.%3C%2Fauthor%3E%3CAN%3E2030957586%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

20. **Tranexamic acid for the prevention of postpartum haemorrhage: the TAPPH-1 pilot randomized trial and lessons learned for trials in Canadian obstetrics.**

Item Type: Journal Article

Authors: Alam, Asim Q.;Barrett, Jon;Callum, Jeannie;Kaustov, Lilia;Au, Shelly;Fleet, Andrew;Kiss, Alex and Choi, Stephen

Publication Date: 2023

Journal: Scientific Reports 13(1), pp. 4512

Abstract: Postpartum haemorrhage (PPH) is a leading cause of maternal morbidity and mortality. While tranexamic acid (TXA) reduces bleeding and transfusion requirements in established PPH, we sought to determine the feasibility of conducting a fully powered trial assessing the effect of prophylactic tranexamic acid, prior to PPH onset, in a Canadian Obstetric setting. With institutional and Health Canada approval, consenting, eligible parturients (singleton, > 32 weeks gestation, vaginal or caesarian delivery) were randomly assigned to receive TXA (1 g intravenously) or placebo (0.9% saline) prior to delivery. Participants , investigators, data collectors/adjudicators, and analysis was blinded. The primary outcome was administration of study intervention to > 85% of randomized individuals. Secondary outcomes included recruitment rate (feasibility) and safety outcomes. Over 8 months, 611 were approached, 35 consented, and 27 randomized (14 TXA, 13 placebo). 89% of randomized participants received the assigned intervention. Recruitment fell below feasibility (23% target). No serious adverse outcomes occurred. Our pilot trial in a Canadian Obstetric setting was unable to demonstrate feasibility to conduct a large, multicentre trial to examine prophylactic use of tranexamic for PPH secondary to the complex regulatory requirements associated with a trial for an off-label, but commonly utilized intervention. These challenges should inform stakeholders on the resources and challenges of conducting future trials using off-label interventions.Trial registration: www.clinicaltrials.gov , NCT03069859 (03/03/2017).

21. **Efficacy and safety of tranexamic acid in prevention of postpartum hemorrhage: a systematic review and meta-analysis of 18,649 patients.**

Item Type: Journal Article

Authors: Aldardery N.M.;Abdelwahab O.A.;Abouzid M.;Albakri K.;Elkhadragy A.;Katamesh B.E.;Hamamreh R.;Mohd A.B.;Abdelaziz A. and Khaity, A.

Publication Date: 2023

Journal: BMC Pregnancy and Childbirth 23(1) (pagination), pp. Article Number: 817. Date of Publication: 01 Dec 2023

Abstract: Background: In this meta-analysis, we aimed to update the clinical evidence regarding the efficacy and safety of TXA in the prevention of PPH. Method(s): A literature search of PubMed, Scopus, Web of Science, Google Scholar, and Cochrane Library from inception until December 2022 was conducted. We included randomized controlled trials (RCTs) comparing TXA with a placebo among pregnant women. All relevant outcomes, such as total blood loss, the occurrence of nausea and/or vomiting, and changes in hemoglobin, were combined as odds ratios (OR) or mean differences (MD) in the meta-analysis models using STATA 17 MP. Result(s): We included 59 RCTs (18,649 patients) in this meta-analysis. For cesarean birth, TXA was favored over the placebo in reducing total blood loss (MD= -2.11 mL, 95%CI [-3.09 to -1.14], P Conclusion(s): This meta-analysis suggested that TXA administration is effective among women undergoing cesarean birth or vaginal birth in lowering total blood loss and limiting the occurrence of PPH. Further clinical trials are recommended to test its efficacy on high-risk populations.Copyright © 2023, The Author(s).

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22. **Tranexamic Acid, a Trivial in Preventing Postpartum Blood Loss in Vaginal Delivery- a Double Blinded, Randomized Controlled Trial.**

Item Type: Journal Article

Authors: Arya P.;Yadav G.;Singh P.;Ghuman N.K.;Sharma C.;Gothwal M. and Kathuria, P.

Publication Date: 2023

Journal: American Journal of Obstetrics and Gynecology (pagination), pp. Date of Publication: 25 Dec 2023

Abstract: OBJECTIVE: To assess the effect of intravenous tranexamic acid (1 g) in reducing blood loss during the 3rd and 4th stages of labor following vaginal delivery, in addition to active management of the third stage of labor. METHOD(S): This double-blinded randomized controlled trial included 650 women with singleton pregnancies of >= 34 weeks gestation undergoing vaginal delivery. Eligible women were randomly assigned to receive 1 g of tranexamic acid or placebo intravenously in addition to active management of the third stage of labor. Calibrated blood collection bags were used to measure postpartum blood loss during the 3rd and 4th stages of labor. RESULT(S): Out of 886 expectant women who were approached, 650 instances that met the study's inclusion criteria were enrolled and a total of 320 women in group A and 321 in group B were analyzed. Maternal characteristics did not differ between the two groups. Mean blood loss did not differ significantly among the intervention and placebo groups (378.5+/-261.2 ml vs. 383+/-258.9 ml; p = 0.93). The incidence of primary postpartum hemorrhage was comparable in both groups (Group A: 15.9%, Group B: 15.3%, p = 0.814). The median fall in haemoglobin within 12-24 hours following delivery in both groups was comparable (group A: 0.60 g% with interquartile range (IQR) 0.4-0.9 g %; group B: 0.6 g% with IQR 0.4-0.8 g %; p = 0.95). The most common adverse effect reported was dizziness. No thromboembolic events were reported at the follow-up of three months in both groups. CONCLUSION(S): Prophylactic use of tranexamic acid in addition to active management of the third stage of labor does not help further reduce postpartum blood loss following vaginal delivery.

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23. **Analysis of the efficacy of prophylactic tranexamic acid in preventing postpartum bleeding: systematic review with meta-analysis of randomized clinical trials.**

Item Type: Journal Article

Authors: Assis I.D.C.;Goveia C.S.;Miranda D.B.;Ferreira R.S. and Riccio, L. G. C.

Publication Date: 2023

Journal: Brazilian Journal of Anesthesiology (English Edition) 73(4), pp. 467–476

Abstract: Background: Postpartum Hemorrhage (PPH) is one of the main causes of maternal mortality, mainly in the poorest regions of the world, drawing attention to the need for strategies for preventing it. This study aims to evaluate the efficacy of prophylactic administration of Tranexamic Acid (TXA) in decreasing blood loss in pregnant women in delivery, preventing PPH. Method(s): Systematic review of randomized clinical trials. We searched for publications in PubMed, EMBASE and Cochrane Library databases, with the uniterms "postpartum, puerperal hemorrhage" and "tranexamic acid", published between January of 2004 and January of 2020. The eligibility criteria were trials published in English with pregnant women assessed during and after vaginal or cesarean delivery about the effect of prophylactic use of TXA on bleeding volume. The random-effects model was applied with the DerSimonian-Laird test and the Mean Difference (MD) was calculated for continuous variables together with each 95% CI. This systematic review was previously registered in the PROSPERO platform under the registration ndegree CRD42020187393. Result(s): Of the 630 results, 16 trials were selected, including one with two different doses, performing a total of 6731 patients. The intervention group received a TXA dose that varied between 10 mg.kg-1 and 1g (no weight calculation). The TXA use was considered a protective factor for bleeding (MD: -131.07; 95% CI: -170.00 to -92.78; p = 0.000) and hemoglobin variation (MD: -0.417; 95% CI: -0.633 to -0.202; p = 0.000). In the subgroup analysis related to the cesarean pathway, the effect of TXA was even greater. Conclusion(s): The prophylactic use of tranexamic acid is effective in reducing the post-partum bleeding volume. PROSPERO registration ID: CRD42020187393.Copyright © 2022 Sociedade Brasileira de Anestesiologia

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24. **Tranexamic acid by the intramuscular or intravenous route for the prevention of postpartum haemorrhage in women at increased risk: a randomised placebo-controlled trial (I'M WOMAN).**

Item Type: Journal Article

Authors: Brenner A.;ShakurStill H.;Chaudhri R.;Muganyizi P.;Olayemi O.;Arribas M.;Kayani A.;Javid K.;Bello A. and Roberts, I.

Publication Date: 2023

Journal: Trials 24(1) (pagination), pp. Article Number: 782. Date of Publication: 01 Dec 2023

Abstract: Background: Postpartum haemorrhage (PPH) causes about 70,000 maternal deaths every year. Tranexamic acid (TXA) is a life-saving treatment for women with PPH. Intravenous (IV) TXA reduces deaths due to PPH by one-third when given within 3 h of childbirth. Because TXA is more effective when given early and PPH usually occurs soon after childbirth, giving TXA just before childbirth might prevent PPH. Although several randomised trials have examined TXA for PPH prevention, the results are inconclusive. Because PPH only affects a small proportion of births, we need good evidence on the balance of benefits and harms before using TXA to prevent PPH. TXA is usually given by slow IV injection. However, recent research shows that TXA is well tolerated and rapidly absorbed after intramuscular (IM) injection, achieving therapeutic blood levels within minutes of injection. Method(s): The I'M WOMAN trial is an international, multicentre, three-arm, randomised, double-blind, placebo-controlled trial to assess the effects of IM and IV TXA for the prevention of PPH in women with one or more risk factors for PPH giving birth vaginally or by caesarean section. Discussion(s): The trial will provide evidence of the benefits and harms of TXA for PPH prevention and the effects of the IM and IV routes of administration. The IM route should be as effective as the IV route for preventing bleeding. There may be fewer side effects with IM TXA because peak blood concentrations are lower than with the IV route. IM TXA also has practical advantages as it is quicker and simpler to administer. By avoiding the need for IV line insertion and a slow IV injection, IM administration would free up overstretched midwives and doctors to focus on looking after the mother and baby and expand access to timely TXA treatment. Trial registration: ClinicalTrials.gov NCT05562609. Registered on 3 October 2022. ISRCTN Registry ISRCTN12590098. Registered on 20 January 2023. Pan African Clinical Trial Registry PACTR202305473136570. Registered on 18 May 2023.Copyright © 2023, The Author(s).

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25. **Efficacy of Preoperative Intravenous Tranexamic Acid before Cesarean Section in Placenta Previa: A Randomized Double Blind Control Trial.**

Item Type: Journal Article

Authors: Chaiyakarn S. and Lerthiranwong, T.

Publication Date: 2023

Journal: Journal of the Medical Association of Thailand 106(3), pp. 235–243

Abstract: Background: Placenta previa is a common cause of postpartum hemorrhage (PPH) that contributes substantively to maternal morbidity and mortality rates. Tranexamic acid is an antifibrinolytic drug that is useful for the treatment of PPH. The recommendation from many guidelines is to start giving tranexamic acid as soon as PPH is diagnosed to reduce postpartum blood loss. Furthermore, some studies report the beneficial use of tranexamic acid given as a prophylactic before Cesarean section to decrease intraoperative blood loss and prevent PPH. To the authors' knowledge, in high-risk obstetrics case such as placenta previa, there was insufficient data to support recommendations of the use of tranexamic acid for prevent PPH. Objective(s): To evaluate the efficacy of supplementary intravenous tranexamic acid before cesarean section versus prophylactic intravenous oxytocin after placenta delivery alone to decrease intraoperative blood loss and prevent PPH in placenta previa. Material(s) and Method(s): The present study conducted a double blinded placebo control trial comparing adjunct 1 g tranexamic acid given intravenously before skin incision with prophylactic intravenous oxytocin after placenta delivery alone before cesarean section for placenta previa. The study recruited 60 women who were diagnosed with placenta previa at gestational age (GA) of more than 28 completed weeks undergoing emergency cesarean section due to active bleeding or scheduled for elective cesarean section at 37 completed weeks at Chonburi Hospital between July 2021 and July 2022. The primary outcome was intraoperative blood loss. Result(s): Sixty diagnosed placenta previa women were recruited, with 30 patients per group. Group I patients were given 1 g tranexamic acid and Group II were given a placebo of 100 ml NSS before skin incision. Both groups received intravenous oxytocin 20 units after placenta delivery. The main outcome showed that preoperative tranexamic acid intravenous reduced intraoperative blood loss significantly compared with the placebo at 349.5 ml (range of 168 to 2,200) versus 619 ml (range of 288 to 3,243), pConclusion(s): Prophylactic supplementary 1 g tranexamic acid intravenously before cesarean section to prophylactic intravenous oxytocin after placental delivery was found to effectively reduce intraoperative blood loss and PPH.Copyright © 2023 JOURNAL OF THE MEDICAL ASSOCIATION OF THAILAND.

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26. **A ROLE OF TRANEXAMIC ACID IN REDUCING BLOOD LOSS IN NORMAL LABOUR.**

Item Type: Journal Article

Authors: Devi V.C.;Sangeetha V. and Devi, K. A.

Publication Date: 2023

Journal: International Journal of Academic Medicine and Pharmacy 5(4), pp. 306–312

Abstract: Background: Though labour is a physiological process it is associated with maternal morbidity and mortality. A life-threatening obstetric hemorrhage occurs in around 1 in 1000 deliveries. Efforts to prevent and minimize maternal morbidity and death related to PPH may help to close the gap in maternal health outcomes that exists throughout the world. Thus, this study was aimed to determine the efficacy of Tranexamic acid in reducing postpartum blood loss after normal vaginal delivery. The changes in the fibrinolytic components during and immediately after placental delivery are consistent with fibrinolysis which occurs as a response to local fibrin deposition which in turn occurs as a result of tisssue damage. Hence there occurs a decrease in fibrinogen level and increase in fibrinogen degradation products. Tranexamic acid is a Competitive inhibitor of plasminogen activator.It prevents Fibrin degradation & preserving the framework of fibrin matrix structure. Hence Tranexamic acid, an anti fibrinolytic agent is used to reduce blood loss after normal delivery with an aim to decrease the incidence of excessive blood loss after delivery. Material(s) and Method(s): This study is conducted among patients admitted in labour ward of Government Villupuram Medical College and Hospital for normal vaginal delivery.Study population are divided into 2 groups as follows, each having 60. The study group and the control group are treated as per Standard AMTSL protocol with along with Inj. Tranexamic acid 1gm iv infusion in 100 ml NS over 15 minutes period after delivery of baby in study group alone. In each case, the parameters like pre delivery vitals, blood loss during delivery, po st-partum vitals. pre and post delivery hemoglobin, PCV along with the need for post-partum blood transfusion and their duration of hospital stay were noted. Result(s): 120 patients were selected for the study,60 as study group and 60 as control group.50% Of the cases belonged to the age group 20- 24.75% of the cases belonged to class V socioeconomic Status. 30% Of the cases were primi gravida and 70% Of the cases were 2nd gravida 80% Of the cases were booked cases. Among the study population, in study group the mean height was 154.28 +/- 1.9, the mean weight was 55.27 +/- 1.83, the mean BMI was 23.21 +/- 0.63 and in control group the mean height was 153.78 +/- 1.74, the mean weight was 55.18 +/- 1.71, the mean BMI was 23.33 +/- 0.64. Among the study population, in study group 46 (76.67%) of them parity were 2nd gravida, 14 (23.33%) of them parity were primi and in control group, 43 (71.67%) of them parity were 2nd gravida, 17 (28.33%) of them parity were primi. The difference in proportion between 2 groups with respect to anthropometry, parity, induction of labour, mode of delivery were not statistically significant. Tranexamic acid significantly reduced the blood loss, need for additional uterotonics and maternal blood transfusion in the study group compared to the control group. The duration of stay was found to be reduced in the study group when compared to control group. The incidence of vomiting, shivering, fever were statistically insignificant .There was statistically significant fall in systolic blood Pressure and rise in PR in the control group compared to the study group post delivery. Conclusion(s): Parentral Tranexamic acid injection, an antifibrinolytic agent given prophylactically at the time of delivery have proven to reduce the blood loss during normal labour and reduces maternal morbidity. As TXA readily available hemostatic agnt we strongly suggest that it should be further investigated as an adjuvant treatment in PPH prophylaxis.Copyright © The Author(s) 2023.

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=doi:10.47009%2Fjamp.2023.5.4.63&issn=2687-5365&isbn=&volume=5&issue=4&spage=306&pages=306-312&date=2023&title=International+Journal+of+Academic+Medicine+and+Pharmacy&atitle=A+ROLE+OF+TRANEXAMIC+ACID+IN+REDUCING+BLOOD+LOSS+IN+NORMAL+LABOUR&aulast=Devi&pid=%3Cauthor%3EDevi+V.C.%3BSangeetha+V.%3BDevi+K.A.%3C%2Fauthor%3E%3CAN%3E2027557810%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

27. **Prophylactic Administration of Tranexemic Acid in Reducing the Incidence of Postpartum Haemorrhage in A Tertiary Care Center - A Cross Sectional Study.**

Item Type: Journal Article

Authors: Gayathrie Devi S.;Karthiga S.;Rajeswari K. and Ganesh, R.

Publication Date: 2023

Journal: International Journal of Pharmaceutical and Clinical Research 15(12), pp. 1298–1304

Abstract: Background: Caesarean section is the commonest operative procedure done in the world. Incidence of caesarean section is increasing throughout the world because of social factors like advanced maternal age, improved surgical techniques and increasing litigation problems. Tranexamic acid is an effective agent for the reduction of blood loss, which has been widely used in various areas of medicine. It is an inhibitor of fibrinolysis that blocks the lysine-binding site of plasminogen to fibrin. It has been used to decrease blood loss for many years in cases of hemorrhage, and is reported to reduce intraoperative and postoperative blood loss. The present study observes the blood loss reduced by Tranexamic acid an antifibrinolytic agent during and after caesarean section and normal delivery. Aim(s): 1) To study the efficacy of tranexamic acid in reducing blood loss during and after lower segment cesarean section and normal delivery. 2) Our objective is to determine the reduction in amount of blood loss after administration of tranexamic acid during and after cesarean section and normal delivery. Settings and Design: This study was carried out in the dept. of Obstetrics and Gynecology of Govt. Karur Medical College Hospital in Karur district of Tamilnadu, India, from Jan 2023 to June 2023 as a case-control study. Material(s) and Method(s): In all patients detailed history - medical history, obstetric history were taken. Vital parameters checked and basic investigations done. Weight of the patient checked. Detailed general examination and obstetric examination done. Gestational age confirmed by USG. 100 patients were placed in group A ie. Control, Normal delivery (50)+ LSCS(50), and 100 patients were placed in group B ie, Cases, Normal delivery (50) + LSCS (50) patients. All patients were counselled and informed consent obtained. Control group -Inj. Oxytocin 10 U IM was administered and Inj. Tranexamic acid 1gm IV was not given. Study group-Both Inj. Tranexamic acid 1gm iv and Inj. Oxytocin 10 U IM was given. Then the results were analysed in terms of vitals monitoring till 2 hours postpartum, uterine contractility, blood loss, etc., and the observations were tabulated and analysed. Results and Conclusion(s): Tranexamic acid significantly (pConclusion(s): Tranexamic acid significantly (p

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+A+Cross+Sectional+Study&aulast=Gayathrie+Devi&pid=%3Cauthor%3EGayathrie+Devi+S.%3BKarthiga+S.%3BRajeswari+K.%3BGanesh+R.%3C%2Fauthor%3E%3CAN%3E2027345071%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

28. **A Hospital Based Cases-Control Study Assessing the Effect of Tranexamic Acid on Blood Loss after Vaginal Delivery.**

Item Type: Journal Article

Authors: Niharika;Rani P.U. and Yadati, R.

Publication Date: 2023

Journal: International Journal of Current Pharmaceutical Review and Research 15(10), pp. 728–731

Abstract: Aim: The aim of the present study was to find out the effect of tranexamic acid on blood loss after vaginal delivery. Method(s): This study was prospective observational study at Department of Obstetrics and Gynecology, carried out over a period of 2 years in the hospital. Hundred pregnant women entered the study. There were 50 subjects in control group and 50 in the study group. Prior to enrolment, written informed consent was attained from all women participated in the study. All women were explained purpose of study and consent was taken in the language that they understand. Result(s): The two groups matched in terms of socio-demographic, and also in terms of reproductive, delivery characteristics, newborn weight and the results were not statistically significant. The amount of blood loss in study and control group was 248 ml and 326 ml respectively which was significant (P Conclusion(s): From our study it was clear that use of tranexamic acid would help to reduce blood loss during delivery. It's a cheap and readily available drug. Its use along with Oxytocin would help in reducing blood loss during delivery. Hemorrhage being the commonest cause of maternal mortality its use would help a long way in preventing maternal mortality due to bleeding.

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29. **Tranexamic Acid to Prevent Obstetrical Hemorrhage After Cesarean Delivery.**

Item Type: Journal Article

Authors: Pacheco L.D.;Clifton R.G.;Saade G.R.;Weiner S.J.;Parry S.;Thorp J.M.;Longo M.;Salazar A.;Dalton W.;Tita A.T.N.;GyamfiBannerman C.;Chauhan S.P.;Metz T.D.;Rood K.;Rouse D.J.;Bailit J.L.;Grobman W.A.;Simhan H.N. and MacOnes, G. A.

Publication Date: 2023

Journal: Obstetrical and Gynecological Survey 78(10), pp. 568–569

Abstract: Previous research has presented convincing evidence that the administration of tranexamic acid (TXA) after cesarean delivery can reduce the incidence of postpartum hemorrhage (PPH) and the associated mortality and morbidity. Although there have been several significant studies on this topic, they are limited by small sample sizes, which make the studies difficult to generalize and limit their statistical power. This study aimed to address that gap and assess clinical outcomes related to the administration of TXA in a large sample. This was a multicenter, double-blind, randomized controlled trial including 31 hospitals participating in the Maternal-Fetal Medicine Units Network of the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Eligibility criteria included scheduled or unscheduled cesarean delivery of a singleton or twin gestation. Exclusion criteria included maternal age younger than 18 years, blood transfusion before randomization, plan for transfusion after randomization, contraindications to TXA, patient decision not to use blood products, or administration of antifibrolytic agents or uterotonic agents other than oxytocin. The primary outcome was maternal death or blood transfusion before hospital discharge or 7 days after delivery, whichever came first. Secondary outcomes included intraoperative blood loss of more than 1 L and treatments or interventions in response to bleeding or related complications within 7 days of delivery, as well as infectious complications within 6 weeks of delivery. Final analyses included 11,000 patients, with 5529 in the TXA group and 5471 in the placebo group. Baseline characteristics were not significantly different between groups, and no center-dependent differences were observed. The primary outcome was observed in 3.6% of patients in the TXA group and 4.3% of patients in the placebo group (adjusted relative risk, 0.89; P = 0.19). Intraoperative blood loss of more than 1 L was recorded in 7.3% and 8.0% in the tranexamic and placebo groups, respectively (relative risk, 0.90; 95% CI, 0.79-1.05). Treatments and interventions in response to bleeding occurred in 16.1% of individuals in the TXA group and 18.0% of those in the placebo group (relative risk, 0.90; 95% CI, 0.82-0.97). Infectious complications were reported in 3.2% and 2.5% in the TXA and placebo groups, respectively (relative risk, 1.28; 95% CI, 1.02-1.61). Sensitivity analysis showed similar results to initial analysis, and no significant differences were seen between groups in major safety outcomes. This analysis indicates that the administration of TXA during cesarean delivery did not lower the risk of maternal death or blood transfusion. These results are in direct contradiction to previous research showing that TXA is effective at reducing these outcomes. This trial was stronger than any previous studies in sample size and careful randomization ensuring equal representation of scheduled and unscheduled cesarean deliveries, which makes the contradiction to previous research especially relevant. Some limitations of this trial included limitations in time of administration of TXA as well as dosage. Outcomes related to these 2 variables are still largely unknown. This trial also excluded patients at high risk of thromboembolic phenomena, and the effect of TXA in this population is still unknown. Further research should focus on more diverse populations, as well as understanding variations in outcomes with timing and dosage, which this study did not address.

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30. **Comparative evaluation of anti-hemorrhagic effect of uterotonics and Tranexamic acid (TXA) for postpartum hemorrhage: An experimental study.**

Item Type: Journal Article

Authors: Usharani N.;Manjula D. and Purushottam, K.

Publication Date: 2023

Journal: Journal of Cardiovascular Disease Research 14(3), pp. 755–758

Abstract: Aim: The aim of the present study was to compare anti-hemorrhagic effect of uterotonics and Tranexamic acid (TXA) for postpartum hemorrhage. Method(s): The prospective observational study was conducted in the department of gynecology. 200 pregnant women who were booked in this hospital and delivered vaginally and clinically diagnosed with postpartum hemorrhage were taken for the study. 100 patients received standard protocol with placebo and 100 received standard protocol with Tranexamic acid 1 gm IV. Result(s): Majority of the patients belonged to age group 19-24 years 60% in group A and 56% in group B respectively followed by 26-30 years, i.e., 25% in group A and 24% in group B. According to parity, 60% belonged to multipara in group A and 65% in group B. 91% and 90% patients delivered full term normal delivery in group A and group B respectively. Two groups are comparable with respect to delivery. P value is significant (p Conclusion(s): Tranexamic acid significantly reduces bleeding in post-partum haemorrhage. TXA is not a new drug and is generally well tolerated without any thrombogenic side effects. This data strongly supports the need for double blind study to investigate the potential effects of Tranexamic acid to reduce incidence of PPH and related maternal morbidity and mortality.

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31. **Prophylactic tranexamic acid among women undergoing vaginal delivery to reduce postpartum blood loss and related morbidities: A systematic review and meta-analysis of 17 randomized controlled trials.**

Item Type: Journal Article

Authors: AbuZaid A.;Baradwan S.;Alshahrani M.S.;Bakhsh H.;Badghish E.;Khadawardi K.;AlRasheed M.A.;Turkistani A.;AlNaim N.F.;AlNaim L.F.;Fodaneel M.;AbuAlsaud F.S.;Jamjoom M.Z.;Tulbah M.;Almugbel M.;Alomar O.;AlJundi H.;Allam H.S.;Alabdrabalamir S.;Salem H., et al

Publication Date: 2022

Journal: Journal of Gynecology Obstetrics and Human Reproduction 51(6) (pagination), pp. Article Number: 102378. Date of Publication: 01 Jun 2022

Abstract: Objective: To conduct a systematic review and meta-analysis of all randomized controlled trials (RCTs) that inspected the efficacy and safety of prophylactic TXA compared with control (placebo/no treatment) among women undergoing vaginal delivery on reducing postpartum blood loss and related morbidities. Method(s): Six databases were screened from inception until 06-December-2021. The pooled data were summarized as mean difference or risk ratio, respectively, with 95% confidence interval in a fixed- or random-effects model. Result(s): Sixteen studies comprising 17 RCT treatment arms were included. There were 7122 patients; 3611 and 3511 patients were allocated to prophylactic TXA and control groups, respectively. Overall, the included RCTs had a low risk of bias. Prophylactic TXA correlated with a significant decrease in mean postpartum blood loss and mean change in hemoglobin/hematocrit. Moreover, prophylactic TXA was linked to decreased incidence rates of postpartum hemorrhage, need for blood transfusion, and need for additional uterotonic agents. Nevertheless, prophylactic TXA culminated in significantly higher incidence rates of nausea, vomiting, and diarrhea, all of which were well-tolerated. There was no increased risk of thromboembolic events. Leave-one-out sensitivity analysis confirmed the robustness of efficacy endpoints. There was no publication bias for the endpoint of mean postpartum blood loss. Conclusion(s): Among patients undergoing vaginal delivery, prophylactic TXA during active management of third stage of labor (AMTSL) appeared largely safe and correlated with a significant decrease in postpartum blood loss and related morbidities compared with control intervention. Prophylactic TXA should be integrated as a "formal" component of AMTSL among women undergoing vaginal delivery.Copyright © 2022 Elsevier Masson SAS

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32. **Tranexamic acid for the prevention and the treatment of primary postpartum haemorrhage: a systematic review.**

Item Type: Journal Article

Authors: Ferrari F.A.;Garzon S.;Raffaelli R.;Cromi A.;Casarin J.;Ghezzi F.;Uccella S. and Franchi, M.

Publication Date: 2022

Journal: Journal of Obstetrics and Gynaecology 42(5), pp. 734–746

Abstract: Tranexamic acid (TA) has been proposed for preventing or treating primary postpartum haemorrhage (PPH), which is the leading cause of maternal morbidity and mortality worldwide. We conducted a systematic literature search to the TA role in managing PPH in vaginal and caesarean delivery. Twenty-seven randomised controlled trials (RCTs) (33,302 women) were identified. Three RCTs investigated TA for preventing PPH after vaginal delivery and 22 after caesarean section. None demonstrated a preventive effect on secondary clinical outcomes related to blood loss. Two trials evaluated TA for treating PPH after vaginal and caesarean delivery. Only the WOMAN trial showed that 1 g of TA is effective. In conclusion, TA is considered useful and is recommended or advised for treating PPH. Conversely, available evidence on the prophylactic role is still limited, and this use is not supported. Further investigation is recommended. In this regard, stronger and more reliable outcomes than blood loss should be considered.Copyright © 2022 Informa UK Limited, trading as Taylor & Francis Group.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:34996342&id=doi:10.1080%2F01443615.2021.2013784&issn=0144-3615&isbn=&volume=42&issue=5&spage=734&pages=734-746&date=2022&title=Journal+of+Obstetrics+and+Gynaecology&atitle=Tranexamic+acid+for+the+prevention+and+the+treatment+of+primary+postpartum+haemorrhage%3A+a+systematic+review&aulast=Ferrari&pid=%3Cauthor%3EFerrari+F.A.%3BGarzon+S.%3BRaffaelli+R.%3BCromi+A.%3BCasarin+J.%3BGhezzi+F.%3BUccella+S.%3BFranchi+M.%3C%2Fauthor%3E%3CAN%3E2014685987%3C%2FAN%3E%3CDT%3EReview%3C%2FDT%3E

33. **Tranexamic Acid Use in the Postpartum Period Since the WOMAN Trial: A Retrospective Chart Review.**

Item Type: Journal Article

Authors: Hemani M.;Parihar K.;Gervais N. and Morais, M.

Publication Date: 2022

Journal: Journal of Obstetrics and Gynaecology Canada 44(3), pp. 279–285.e2

Abstract: Objective: To analyze the use of tranexamic acid (TXA) in postpartum patients since the World Maternal Antifibrinolytic (WOMAN) trial. Method(s): A retrospective chart review was conducted from May 2017 to March 2020 at a tertiary care centre to identify all patients who received TXA for postpartum bleeding. The primary outcome was to identify the proportion of patients who received TXA as per World Health Organization guidelines created using results of the World Maternal Antifibrinolytic trial. Result(s): A total of 231 patients were included in our analysis. Use increased over time with 18 patients in 2017, 51 in 2018, and 134 in 2019 receiving TXA. In all, 203 patients (87.9%) received TXA within recommended guidelines, and these patients were less likely to require surgery or interventional radiology (12.3% vs. 42.9%, P Conclusion(s): The majority of patients received TXA within guidelines and experienced fewer adverse outcomes. Further study is needed to identify the best order of TXA administration with additional uterotonics and whether TXA should be used prophylactically in some groups for postpartum bleeding.Copyright © 2021

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:34742944&id=doi:10.1016%2Fj.jogc.2021.10.014&issn=1701-2163&isbn=&volume=44&issue=3&spage=279&pages=279-285.e2&date=2022&title=Journal+of+Obstetrics+and+Gynaecology+Canada&atitle=Tranexamic+Acid+Use+in+the+Postpartum+Period+Since+the+WOMAN+Trial%3A+A+Retrospective+Chart+Review&aulast=Hemani&pid=%3Cauthor%3EHemani+M.%3BParihar+K.%3BGervais+N.%3BMorais+M.%3C%2Fauthor%3E%3CAN%3E2015823116%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

34. **Tranexamic acid for reducing blood loss following vaginal delivery: a double-blind randomized controlled trial.**

Item Type: Journal Article

Authors: Igboke F.N.;Obi V.O.;Dimejesi B.I. and Lawani, L. O.

Publication Date: 2022

Journal: BMC Pregnancy and Childbirth 22(1) (pagination), pp. Article Number: 178. Date of Publication: 01 Dec 2022

Abstract: Background: Postpartum haemorrhage (PPH) is a major cause of maternal morbidity and mortality worldwide. Tranexamic acid (TXA) is a useful drug for prevention of PPH and merits evaluation in Nigeria, where PPH is the leading cause of maternal death (25%) and severe maternal morbidity. This study evaluates the efficacy of TXA in reducing blood loss following vaginal delivery. Method(s): This was a double-blind randomized placebo-controlled study on the efficacy and safety of intravenous TXA in reducing blood loss in women undergoing vaginal delivery in a tertiary hospital. Data analysis was conducted with IBM SPSS software (version 20, Chicago II, USA). P-value Method(s): This was a double-blind randomized placebo-controlled study on the efficacy and safety of intravenous TXA in reducing blood loss in women undergoing vaginal delivery in a tertiary hospital. Data analysis was conducted with IBM SPSS software (version 20, Chicago II, USA). P-value Result(s): The mean estimated blood loss was lower in TXA compared with the placebo group. (174.87 +/- 119.83 ml versus 341.07 +/- 67.97 ml respectively; P 500 ml) was 5.13% in the study arm compared to the control arm 7.14%- risk ratio (RR) 0.71; 95% CI: 0.38-1.79, p = 0.5956]. Additional uterotonics was required more in the control group compared to the treatment group 14(16.67%) versus 3(3.85%), p-value= 0.007. There were no major complications noticed in the treatment group. Conclusion(s): This study demonstrated that intravenous administration of TXA reduced blood loss following vaginal delivery. It also reduced the need for additional uterotonics. However, blood loss greater than 500 was not significantly reduced. Trial registration: This trial was registered retrospectively. Pan African Clinical Trial Registry: PACTR202010828881019 on 12/10/2020.Copyright © 2022, The Author(s).

35. **Effects of tranexamic acid on the amount of bleeding following vaginal delivery and its adverse effects: a double-blind placebo controlled randomized clinical trial.**

Item Type: Journal Article

Authors: Kashanian M.;Dadkhah F.;Tabatabaei N. and Sheikhansari, N.

Publication Date: 2022

Journal: Journal of Maternal-Fetal and Neonatal Medicine 35(25), pp. 5611–5615

Abstract: Introduction: Postpartum hemorrhage (PPH) is the most important concern after delivery. Tranexamic acid (TXA), an anti-fibrinolytic agent, has been suggested for prevention and treatment of PPH. Objective(s): The purpose of the present study was to find the effects of TXA on the amount of bleeding following vaginal delivery and its adverse effects. Material(s) and Method(s): The study was performed as a randomized double blind placebo controlled clinical trial on low risk pregnant women who delivered vaginally. The patients were randomly assigned into two groups. Women in the intervention group received 10 mg/kg infusion of TXA in 100 mL normal saline and the control group received one vial of distilled water (as placebo) in 100 mL normal saline. The primary outcome was amount of bleeding after delivery. The secondary outcomes were decreased in hemoglobin level, need for additional uterotonic agents and need for blood transfusion. All were evaluated 6 h after delivery and compared in the two groups. Participants were followed up to six weeks after delivery for any TXA side effects. Result(s): Two hundred and seven women finished the study. There were no significant differences between the two groups in terms of demographic data and risk factors for bleeding. Mean blood loss and need to misoprostol was more in the control group (p=.033 and p=.000, respectively). Hemoglobin level was higher in the TXA group 6 h after delivery. None of the subjects needed blood transfusion, uterine balloon tamponade or emergency hysterectomy. Adverse effects were higher in the TXA group, however, there were no side effects between weeks 3 and 6 in both groups. There were no thromboembolic events during six weeks after delivery. Conclusion(s): Tranexamic acid can reduce the amount of bleeding after vaginal delivery in low risk women without having serious complications. Also, it may decrease the need for additional uterotonic agents. Trial registration number and registry website: IRCT20091023002624N22.Copyright © 2021 Informa UK Limited, trading as Taylor & Francis Group.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:34024233&id=doi:10.1080%2F14767058.2021.1888911&issn=1476-7058&isbn=&volume=35&issue=25&spage=5611&pages=5611-5615&date=2022&title=Journal+of+Maternal-Fetal+and+Neonatal+Medicine&atitle=Effects+of+tranexamic+acid+on+the+amount+of+bleeding+following+vaginal+delivery+and+its+adverse+effects%3A+a+double-blind+placebo+controlled+randomized+clinical+trial&aulast=Kashanian&pid=%3Cauthor%3EKashanian+M.%3BDadkhah+F.%3BTabatabaei+N.%3BSheikhansari+N.%3C%2Fauthor%3E%3CAN%3E2011580397%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

36. **The role of tranexamic acid in obstetric hemorrhage: a narrative review.**

Item Type: Journal Article

Authors: Van Houwe M.;Roofthooft E. and Van De Velde, M.

Publication Date: 2022

Journal: Acta Anaesthesiologica Belgica 73(2), pp. 103–108

Abstract: Abnormal postpartum hemorrhage is a common problem, complicating 3-5% of vaginal and operative deliveries. In a majority of cases (98%) uterine atony, retained placenta or genital tract lacerations are responsible for excessive blood loss. However, occasionally, serious coagulopathy may occur early after delivery or in specific circumstances such as with placental abruption. Also, when bleeding is caused by uterine atony, retained placenta or vaginal lacerations, a dilutional coagulopathy may develop. Hence correcting coagulation abnormalities is often required. Crucial to manage postpartum coagulopathy is the use of tranexamic acid to reduce hyperfibrinolysis. In the present narrative review, we will discuss the use of tranexamic acid for the prevention and management of major postpartum hemorrhage by reviewing the available literature.

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37. **Efficacy of tranexemic acid in prevention of hemorrhage after vaginal delivery postpartum.**

Item Type: Journal Article

Authors: Ali M.M.;ElBromboly W.H.;Elnagar W.M. and Hashem, M. F. A.

Publication Date: 2021

Journal: European Journal of Molecular and Clinical Medicine 8(4), pp. 503–512

Abstract: Background: Postpartum haemorrhage is still the primary cause of maternal death, particularly in underdeveloped nations. We aimed to see how tranexamic acid and oxytocin compare in terms of preventing postpartum haemorrhage and lowering blood loss, hospital stay, morbidity, and death during vaginal birth.Patients and methods: A prospective, randomised clinical trial study was conducted on 92 pregnant women who were being prepared for vaginal delivery and were divided into two groups: Group (A) (TXA group) (46 patients) received 1 gm of tranexamic acid and Group (B) (Non-TXA group) (46 patients) received 10 IU of oxytocin. Hemoglobin and hematocrit readings were tested before and 24 hours after vaginal delivery, and additional basic laboratory tests were performed. Result(s): In our study, there was no significant difference in HB at the pre-test, but the Non-TXA group was considerably lower at the post-test, and the Non-TXA group had a significant reduction. At the pre-test, there was no significant difference in HCT, but the Non-TXA group was considerably lower at the post-test, and the Non-TXA group had a significant reduction. In the TXA group, the difference in HCT was much smaller. The TXA group had considerably less blood loss. Conclusion(s): The use of tranexamic acid during delivery may assist to minimise blood loss. It is a low-cost and widely available medication. The use of TXA reduces the requirement for uterotonics, lowering morbidity and mortality.Copyright © 2021 Ubiquity Press. All rights reserved.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:&id=doi:&issn=2515-8260&isbn=&volume=8&issue=4&spage=503&pages=503-512&date=2021&title=European+Journal+of+Molecular+and+Clinical+Medicine&atitle=Efficacy+of+tranexemic+acid+in+prevention+of+hemorrhage+after+vaginal+delivery+postpartum&aulast=Ali&pid=%3Cauthor%3EAli+M.M.%3BEl-Bromboly+W.H.%3BElnagar+W.M.%3BHashem+M.F.A.%3C%2Fauthor%3E%3CAN%3E2014338323%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

38. **Tranexamic acid and obstetric hemorrhage: give empirically or selectively?.**

Item Type: Journal Article

Authors: Shander A.;Javidroozi M. and Sentilhes, L.

Publication Date: 2021

Journal: International Journal of Obstetric Anesthesia 48(pagination), pp. Article Number: 103206. Date of Publication: 01 Nov 2021

Abstract: Antifibrinolytic agents such as tranexamic acid (TXA) inhibit the fibrinolytic pathway and protect blood clots from being degraded, thereby promoting hemostasis. They have been used to reduce blood loss in various settings including obstetrics. Based on current evidence, TXA can be considered as a therapeutic adjunct to control postpartum hemorrhage (PPH) after vaginal and cesarean deliveries, with earlier administration preferred. This strategy has been demonstrated to reduce mortality due to bleeding (but not the incidence of transfusion) in developing countries. On the other hand, the benefit-risk ratio of TXA has not been fully assessed in developed countries which have much lower PPH-related mortality rates and better access to other management modalities. As a proposed prophylactic agent to prevent PPH, the level of evidence is currently insufficient to recommend the routine use of TXA to prevent blood loss after vaginal and cesarean deliveries. The results of large new multicenter studies assessing the impact of TXA on maternal blood loss-related outcomes after cesarean delivery are awaited. While most studies to date have focused on empirical and one-size-fit-all dosing of TXA, more selective and individualized treatment protocols (possibly guided by functional coagulation assays) are needed to pave the way for safer and more effective use of this inexpensive and widely used medication.Copyright © 2021 Elsevier Ltd

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:34343820&id=doi:10.1016%2Fj.ijoa.2021.103206&issn=0959-289X&isbn=&volume=48&issue=&spage=103206&pages=&date=2021&title=International+Journal+of+Obstetric+Anesthesia&atitle=Tranexamic+acid+and+obstetric+hemorrhage%3A+give+empirically+or+selectively%3F&aulast=Shander&pid=%3Cauthor%3EShander+A.%3BJavidroozi+M.%3BSentilhes+L.%3C%2Fauthor%3E%3CAN%3E2013826690%3C%2FAN%3E%3CDT%3EReview%3C%2FDT%3E

39. **The efficacy of intravenous tranexamic acid in reduction of blood loss in women at high risk of postpartum hemorrhage**

Item Type: Conference Proceeding

Authors: Diab K.M., Mohamed R.M. and Abdelhay, A.G.

Publication Date: 2020

Publication Details: QJM. Conference: 40th Annual Ain Shams Medical Conference. Online. 113(SUPPL 1) (pp i163); Oxford University Press,
Abstract: Background: Postpartum hemorrhage (PPH) is the leading cause of maternal mortality. All women who carry a pregnancy beyond 20 weeks' gestation are at risk for PPH and its sequelae. Although maternal mortality rates have declined greatly in the developed world, PPH remains a leading cause of maternal mortality elsewhere. Aim of the Work: To assess the efficacy and safety intravenous tranexamic acid in reduction of amount of blood loss in high risk women who deliver by cesarean section or vaginal delivery in postpartum period. Patients and Methods: This prospective double blind randomized controlled clinical trial study was conducted on 200 patients planned for LSCS or vaginal delivery at Gestational Age >= 34 Weeks at Ain Shams University Maternity Hospital. Recruitment of data begun once the protocol was approved by research and ethical committee of the department of obstetrics and gynecology. Result(s): No significant difference between Study and Control groups as regards age (p=0.508), no significant difference between Study and Control groups as regards Gestational age (p=0.447),total blood loss (p Conclusion(s): The use of tranexamic acid prior to cesarean section or vaginal delivery is effective as a prophylaxis against post-partum hemorrhage as shown by the results of this study. It can significantly reduce blood loss during and after cesarean section or vaginal delivery.

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40. **The Use of Tranexamic Acid to Prevent Postpartum Hemorrhage.**

Item Type: Journal Article

Authors: Mielke R.T. and Obermeyer, S.

Publication Date: 2020

Journal: Journal of Midwifery and Women's Health 65(3), pp. 410–416

Abstract: Tranexamic acid (TXA) is an antifibrinolytic pharmacologic agent with demonstrated effectiveness for reducing the incidence of death from blood loss following trauma and major surgery. In intrapartum care, TXA is being used in in conjunction with uterotonic agents to treat postpartum hemorrhage (PPH). Based on the findings of the WOMAN trial that found TXA reduced maternal death due to PPH, the World Health Organization recommends that TXA be part of the standard comprehensive PPH treatment package, and US professional organizations recognize its use as adjunctive treatment for PPH. Evidence suggests that TXA used prophylactically in the setting of cesarean birth may decrease blood loss and the incidence of PPH. There is limited evidence for prophylactic use of TXA in women of all risk categories following vaginal birth but prophylactic use in women who have an a priori risk for PPH is being investigated. This article presents a case in which a midwife identifies a woman in active labor who has significant risk factors for PPH. In consultation with the collaborating obstetrician, TXA is given early during the third stage of labor in addition to the recommended components of active management for the purpose of preventing PPH.Copyright © 2020 The Authors. Journal of Midwifery & Women's Health published by Wiley Periodicals, Inc. on behalf of American College of Nurse Midwives (ACNM)

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:32431098&id=doi:10.1111%2Fjmwh.13101&issn=1526-9523&isbn=&volume=65&issue=3&spage=410&pages=410-416&date=2020&title=Journal+of+Midwifery+and+Women%27s+Health&atitle=The+Use+of+Tranexamic+Acid+to+Prevent+Postpartum+Hemorrhage&aulast=Mielke&pid=%3Cauthor%3EMielke+R.T.%3BObermeyer+S.%3C%2Fauthor%3E%3CAN%3E2004999613%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

41. **Tranexamic acid for postpartum hemorrhage prevention in vaginal delivery: A meta-analysis.**

Item Type: Journal Article

Authors: Xia Y.;Griffiths B.B. and Xue, Q.

Publication Date: 2020

Journal: Medicine (United States) 99(3) (pagination), pp. Article Number: e18792. Date of Publication: 2020

Abstract: Background:Tranexamic acid (TA) has been demonstrated to reduce blood loss and the incidences of postpartum hemorrhage (PPH) during caesarean sections. We compared the clinical efficacy of TA administration on vaginal deliveries with recently published papers. Method(s):Electronic databases of PubMed, Cochrane Library, Embase and Chinese CNKI (Chinese database) and Wanfang were searched through November 2019.The randomized controlled trials were selected between TA and control groups. The relevant studies included four trials with a total of 4579 patients. Result(s): Patients treated with TA had a reduction in total blood loss (P=.009), lower postoperative blood loss (P Conclusion(s):TA resulted in fewer occurrence rates of PPH, and no significant increase in occurrences of dizziness or photopsia, but higher incidence of vomiting and nausea.Copyright © 2020 the Author(s). Published by Wolters Kluwer Health, Inc.

42. **Evaluation of the role of tranexamic acid in prevention of postpartum bleeding: A case control study.**

Item Type: Journal Article

Authors: AlNasrawi, H.

Publication Date: 2019

Journal: Indian Journal of Forensic Medicine and Toxicology 13(4), pp. 889–894

Abstract: Background: The usual trend in obstetrics field is to use uterotonics in order to control postpartum hemorrhage such as oxytocin, misoprostol and prostaglandins, however, there is a recent trend to use tranexamic acid to prevent and control excessive vaginal bleeding after delivery. The aim of current study was to evaluate the use of tranexamic acid in preventing excessive vaginal bleeding following delivery in a sample of pregnant Iraqi ladies. Method(s): The present randomized controlled clinical trial included two groups; the first included 39 term pregnant ladies who were given tranexamic acid in addition to the standard uterotonic medication used to prevent postpartum hemorrhage in risky women. The second group included 39 term pregnant women who received the standard uterotonic medication only. The first step was to choose women having risk of developing postpartum hemorrhage. Those women were selected from the pool of pregnant ladies visiting the delivery wards at AL-Diwaniyah maternity and child hospital and AL-Shamiyah general hospital during the period from January 2017 to January 2019. These hospitals belong to AL-Diwaniyah province in the Mid-Euphrates region of Iraq. Result(s): The incidence of postpartum bleeding was less significant in women treated with tranexamic acid and uterotonics than women treated with uterotonics alone (46.2 % and 76.9 %, respectively, P = 0.005). In addition, mean volume of blood loss was significantly less in the first than in the second group of women (288.46 ml versus 538.46 ml, respectively, P= 0.001). Moreover, the need for blood transfusion was significantly less in the first than the in the second group of women (38.5 % versus 61.5 %, respectively, P = 0.042). Conclusion(s): It seems much recommended to use tranexamic acid in women at risk of having postpartum hemorrhage, because of its high efficacy in reducing the rate and volume of postpartum bleeding, if it ever happens.

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43. **Prophylactic use of tranexamic acid after vaginal delivery reduces the risk of primary postpartum hemorrhage.**

Item Type: Journal Article

Authors: Saccone G.;Della Corte L.;D'Alessandro P.;Ardino B.;Carbone L.;Raffone A.;Guida M.;Locci M.;Zullo F. and Berghella, V.

Publication Date: 2019

Journal: Journal of Maternal-Fetal and Neonatal Medicine , pp. 1–9

Abstract: Background: Postpartum hemorrhage (PPH) is responsible for about 25% of maternal deaths worldwide. Antifibrinolytic agents, mainly tranexamic acid, have been demonstrated to reduce maternal blood loss and need for transfusion requirements at delivery in some settings. Objective(s): The aim of this meta-analysis of randomized controlled trials (RCTs) was to evaluate the effectiveness of tranexamic acid for the prevention of PPH after vaginal delivery. Data sources: The search was conducted using electronic databases from the inception of each database through February 2018. Review of articles also included the abstracts of all references retrieved from the search. No restrictions for language or geographic location were applied. Study design: Selection criteria included RCTs comparing the prophylactic use of tranexamic acid after vaginal delivery with control (either placebo or no treatment). Trials in women undergoing cesarean delivery and trials in women with established PPH were excluded. The primary outcome was the incidence of primary PPH. The summary measures were reported as summary relative risk (RR) with 95% confidence interval (CI) using the random-effects model of DerSimonian and Laird. Tabulation, integration, and results: Four RCTs, including 4671 participants, evaluating tranexamic acid usually 1 g intravenous (IV) within 10 min after vaginal delivery in addition to oxytocin, cord traction, and uterine massage, at or near term for prevention of primary PPH, defined mostly as blood loss >=500 mL in the first 24 h following delivery, were analyzed. Women who received prophylactic tranexamic acid after vaginal delivery had a significantly lower incidence of primary PPH (8.7 versus 11.4%; RR 0.61, 95% CI 0.41-0.91) and lower mean blood loss mean difference (MD) -84.74 mL, 95% CI -109.76 to -59.72). The risk of thrombotic events was not increased in the tranexamic acid group. Conclusion(s): Prophylactic tranexamic acid 1 g IV within 10 min after vaginal delivery reduces the risk of primary PPH.Copyright © 2019, © 2019 Informa UK Limited, trading as Taylor & Francis Group.

44. **Tranexamic acid for childbirth: why, when, and for whom**

Item Type: Journal Article

Authors: Sentilhes, Loic;Madar, Hugo;Mattuizzi, Aurelien;Froeliger, Alizee;Merlot, Benjamin;Elleboode, Benoit and Deneux-Tharaux, Catherine

Publication Date: 2019

Journal: Expert Review of Hematology 12(9), pp. 753–761

Abstract: Introduction: Postpartum hemorrhage (PPH) is a major cause of maternal death and severe maternal morbidity after childbirth. Areas covered: Tranexamic acid, an antifibrinolytic agent, reduces bleeding-related mortality in women with PPH, especially when administered shortly after delivery, and is consequently recommended in this situation (1g intravenously with a second dose of 1 g if bleeding continues), even in high income countries where the magnitude of the effect of tranexamic is uncertain. Expert opinion: Pharmacovigilance surveys are warranted in high income areas to ensure that this new policy for the treatment of PPH is not associated to rare but severe adverse events such as renal failure. The evidence remains insufficient to recommend the universal use of tranexamic acid for prevention of postpartum hemorrhage after both vaginal and cesarean deliveries.

45. **The effect of prophylactic oral tranexamic acid plus buccal misoprostol on blood loss after vaginal delivery: a randomized controlled trial.**

Item Type: Journal Article

Authors: Shady N.W.;Sallam H.F.;Elsayed A.H.;Abdelkader A.M.;Ali S.S.;Alanwar A. and Abbas, A. M.

Publication Date: 2019

Journal: Journal of Maternal-Fetal and Neonatal Medicine 32(11), pp. 1806–1812

Abstract: Objective: The objective of this study is to evaluate the effect of prophylactic oral tranexamic acid (TA) plus buccal misoprostol on the amount of blood loss after vaginal delivery in women at low risk for post-partum hemorrhage (PPH). Material(s) and Method(s): The study was a randomized open label clinical trial conducted in a tertiary University Hospital between January 2016 and June 2017. We included women who delivered vaginally with a singleton pregnancy. They were randomized into three groups: group I (women received 10 IU oxytocin IV after delivery of the baby), group II (women received 600 microg buccal misoprostol after delivery of the baby), and group III (women received 1000 mg oral TA at the end of the first stage of labor plus 600 microg buccal misoprostol after delivery of the baby). In each group, pre- and post-delivery pulse rate, blood pressure, temperature, and hemoglobin level were evaluated. Additionally, the amount of blood loss, need for blood transfusion, need for additional uterotonics, and side effects of the study medications were recorded. Result(s): There was a statistically significant lower hemoglobin level and higher blood loss in the misoprostol group compared with oxytocin group and TA plus misoprostol group (p =.0001). There was a statistically significant higher hemoglobin level and lower blood loss in the TA plus misoprostol group compared with the oxytocin group (p =.004 and.043, respectively). PPH occurred in 16.7% of women in the misoprostol group compared 1.7% in the oxytocin group and no cases of PPH in the TA plus misoprostol group (p =.0001). Conclusion(s): In settings like rural area or home delivery in which oxytocin is not available, alternative oral TA plus buccal misoprostol may be considered as an effective line in prevention of PPH.Copyright © 2017, © 2017 Informa UK Limited, trading as Taylor & Francis Group.

46. **Tranexamic Acid for Prevention and Treatment of Postpartum Hemorrhage: An Update on Management and Clinical Outcomes.**

Item Type: Journal Article

Authors: Ahmadzia H.K.;Phillips J.M.;Katler Q.S. and James, A. H.

Publication Date: 2018

Journal: Obstetrical and Gynecological Survey 73(10), pp. 587–594

Abstract: Importance: Postpartum hemorrhage (PPH) remains amajor cause ofmaternalmortality worldwide, occurring in both vaginal and cesarean deliveries.We have witnessed improvements in both prevention and treatment of PPH. Tranexamic acid (TXA) has been investigated as a potential adjunct therapy to uterotonics within this setting. Objective(s): The aim of this article is to summarize existing recommendations on the use of TXA in obstetrics and review current data on clinical outcomes after TXA use. Evidence Acquisition: We reviewed guidelines from a number of professional societies and performed an extensive literature search reviewing relevant and current data in this area. Results and Conclusion(s): In the prevention of PPH, TXA use before both vaginal and cesarean deliveries reduces the amount of postpartum blood loss and should be considered in patients at higher risk for hemorrhage. In the treatment of PPH, TXA should be initiated early for maximal survival benefit from hemorrhage, and it provides no additional benefit if administered more than 3 hours from delivery. Overall, current evidence assessing the risks of TXA use in an obstetric population is reassuring. Target Audience: Obstetricians and gynecologists, family physicians. Learning Objectives: After completing this activity, the learner should be better able to: define themechanism of action of TXA; evaluate the utility of TXA in prophylaxis and treatment of PPH; define common doses of TXA used in the peripartum period; and assess associated risk and possible adverse outcome when using TXA.

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47. **Tranexamic acid for the prevention of blood loss after vaginal delivery.**

Item Type: Journal Article

Authors: Sentilhes L.;Winer N.;Azria E.;Senat M.V.;Le Ray C.;Vardon D.;Perrotin F.;Desbriere R.;Fuchs F.;Kayem G.;Ducarme G.;DoretDion M.;Huissoud C.;Bohec C.;Deruelle P.;Phar A.D.;Chretien J.M.;Seco A.;Phar V.D. and DeneuxTharaux, C.

Publication Date: 2018

Journal: New England Journal of Medicine 379(8), pp. 731–742

Abstract: BACKGROUND The use of tranexamic acid reduces mortality due to postpartum hemorrhage. We investigated whether the prophylactic administration of tranexamic acid in addition to prophylactic oxytocin in women with vaginal delivery would decrease the incidence of postpartum hemorrhage. METHODS In a multicenter, double-blind, randomized, controlled trial, we randomly assigned women in labor who had a planned vaginal delivery of a singleton live fetus at 35 or more weeks of gestation to receive 1 g of tranexamic acid or placebo, administered intravenously, in addition to prophylactic oxytocin after delivery. The primary outcome was postpartum hemorrhage, defined as blood loss of at least 500 ml, measured with a collector bag. RESULTS Of the 4079 women who underwent randomization, 3891 had a vaginal delivery. The primary outcome occurred in 156 of 1921 women (8.1%) in the tranexamic acid group and in 188 of 1918 (9.8%) in the placebo group (relative risk, 0.83; 95% confidence interval [CI], 0.68 to 1.01; P = 0.07). Women in the tranexamic acid group had a lower rate of provider-assessed clinically significant postpartum hemorrhage than those in the placebo group (7.8% vs. 10.4%; relative risk, 0.74; 95% CI, 0.61 to 0.91; P = 0.004; P = 0.04 after adjustment for multiple comparisons post hoc) and also received additional uterotonic agents less often (7.2% vs. 9.7%; relative risk, 0.75; 95% CI, 0.61 to 0.92; P = 0.006; adjusted P = 0.04). Other secondary outcomes did not differ significantly between the two groups. The incidence of thromboembolic events in the 3 months after delivery did not differ significantly between the tranexamic acid group and the placebo group (0.1% and 0.2%, respectively; relative risk, 0.25; 95% CI 0.03 to 2.24). CONCLUSIONS Among women with vaginal delivery who received prophylactic oxytocin, the use of tranexamic acid did not result in a rate of postpartum hemorrhage of at least 500 ml that was significantly lower than the rate with placebo. (Funded by the French Ministry of Health; TRAAP ClinicalTrials.gov number, NCT02302456.)Copyright © 2018 Massachusetts Medical Society.

48. **Effectiveness of tranexamic acid for reducing postpartum blood loss in the first two hours after vaginal delivery: A randomised controlled trial.**

Item Type: Journal Article

Authors: Sujita A.;Songthamwat S. and Songthamwat, M.

Publication Date: 2018

Journal: Journal of Clinical and Diagnostic Research 12(3), pp. QC01–QC04

Abstract: Introduction: Postpartum Haemorrhage (PPH) is the leading direct cause of maternal death worldwide, especially in developing countries. Fibrinolysis is an important process in bleeding during the third stage of labour. Tranexamic acid (TA) is used to reduce the fibrinolysis process which might reduce the blood loss after delivery. Aim(s): To study the effectiveness of intravenous TA for reducing postpartum blood loss in the first two hours after vaginal delivery. Material(s) and Method(s): A prospective double blinded Randomised Controlled Trial (RCT) was performed. The participants were randomly allocated to receive either an intravenous infusion of TA (n=75) or a placebo (n=75) after delivery of the anterior shoulder. A prophylactic intramuscular injection of 10 units of oxytocin was used in both groups. Blood loss was directly measured using a collective bag combined with a gravimetric of gauzes and diapers during the first two hours postpartum. The means of blood loss of both groups were compared. The prevalence of PPH (>500 ml) and severe PPH (>1,000 ml) in both groups were analysed. Statistical analysis were performed using Stata13 (Stata Corp, College Station, TX). A p-value below 0.05 was considered statistically significant. Result(s): Seventy two participants in the TA group and 69 participants in the placebo group completed this study. Mean blood loss in the first two hours for the TA group was not significantly different from the placebo group (226.59 +/-114.66 ml versus 234.05+/-142.41 ml, p=0.73). Adjusted mean difference was 4.61 ml (95% CI: -48.25 to 39.02). The frequency of PPH was one case in the TA group and three cases in the placebo group (one case was severe PPH). Only one woman had a mild side effect (nausea) and no episode of thrombosis occurred in the women who received TA. Conclusion(s): In normal delivery, the addition of TA did not reduce the amount of postpartum blood loss in the first two hours compared with prophylaxis oxytocin only.

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49. **The effect of tranexamic acid on preventing post-partum hemorrhage due to uterine atony: A triple-blind randomized clinical trial.**

Item Type: Journal Article

Authors: Zargar M.;Nikbakht R. and Ahmadi, M.

Publication Date: 2018

Journal: Current Clinical Pharmacology 13(2), pp. 136–139

Abstract: Background: Postpartum haemorrhage (PPH) is an important cause of early maternal death which needs to be controlled. Objective(s): This study was designed to compare the effect of intravenous tranexamic acid (TXA) and prostaglandin analogue on reducing PPH resulted from uterine atony in women undergoing C section or vaginal delivery. Method(s): A randomized, triple-blind, placebo-controlled study was conducted on 248 pregnant women with PPH due to uterine atony who were randomly assigned into two groups of TXA as the intervention group (n=124) and prostaglandin analogue as the control group (n=124). The intervention group received 4 g TXA for an hour and then 1 g over 6 hours infusion intravenously and the control group received prostaglandin analogue. Result(s): Postoperative bleeding did not significantly differ between the two groups (68.2+/-6.1 ml and 69.1+/-175.73 ml, respectively, P =0.6). Moreover, hemoglobin declines were 1+/-0.4 g/dl and 1.2+/-0.5 g/dL in TXA and prostaglandin group respectively, indicating that the difference was not statistically significant (P =0.7). Conclusion(s): The results of the present study showed that administrating intravenous TXA had comparable effects with prostaglandin analogue on reducing PPH in women with uterine atony and in those undergoing C section or vaginal delivery. Therefore, TXA can be used instead of prostaglandin in managing such patients.

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50. **Is prophylactic tranexamic acid administration effective and safe for postpartum hemorrhage prevention? A systematic review and meta-analysis.**

Item Type: Journal Article

Authors: Li C.;Gong Y.;Dong L.;Xie B. and Dai, Z.

Publication Date: 2017

Journal: Medicine (United States) 96(1) (pagination), pp. Article Number: 5653. Date of Publication: 2017

Abstract: Background: To assess the efficacy and safety of tranexamic acid (TA) in reducing blood loss and lowering transfusion needs for patients undergoing caesarean section (CS) or vaginal delivery (VD). Method(s): An electronic literature search of PubMed, EMBASE, OVID, Cochrane library, Scopus, Central, and Clinical trials.gov was performed to identify studies that evaluating the usage of TA in CS or VD. The methodological quality of included trials was assessed and data extraction was performed. Results(s): Finally, 25 articles with 4747 participants were included. Our findings indicated TA resulted in a reduced intra-, postoperative, and total blood loss by a mean volume of 141.25 mL (95% confidence interval [CI] -186.72 to -95.79, P Conclusion(s): Our findings indicated that intravenous TAfor patients undergoing CS was effective and safe. Although prophylactic TA administration is associated with reduced PPH, current existing data are insufficient to draw definitive recommendations about its clinical significance due to the poor to moderate quality of the included literatures. Thus, high-quality randomized controlled trials with larger samples are needed to validate our findings.Copyright © 2017 the Author(s).

51. **Use of tranexamic acid in preventing postpartum hemorrhage.**

Item Type: Journal Article

Authors: Glymph D.C.;Tubog T.D. and Vedenikina, M.

Publication Date: 2016

Journal: AANA Journal 84(6), pp. 427–438

Abstract: Postpartum hemorrhage (PPH) continues to be a serious complication in both developed and underdeveloped countries. It remains the leading cause of maternal mortality in underdeveloped countries. Implementation of the World Health Organization guidelines of PPH treatment has reduced mortality. In addition, the prophylactic administration of tranexamic acid with uterotonic agents may contribute to the reduction of PPH. This evidence-based literature review of tranexamic acid will examine its mechanism of action as well as its effectiveness in prevention of PPH and blood loss reduction in elective surgery, obstetrics, and trauma.

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52. **Does tranexamic acid prevent postpartum haemorrhage? A systematic review of randomised controlled trials.**

Item Type: Journal Article

Authors: Ker K.;Shakur H. and Roberts, I.

Publication Date: 2016

Journal: BJOG: An International Journal of Obstetrics and Gynaecology 123(11), pp. 1745–1752

Abstract: Background: Postpartum haemorrhage is the leading cause of maternal mortality. Tranexamic acid (TXA) reduces surgical haemorrhage and the risk of death in bleeding trauma patients. Objective(s): To assess the effects of TXA on risk of postpartum haemorrhage and other clinically relevant outcomes. Search strategy: We searched the MEDLINE, CENTRAL, EMBASE, PubMed, ClinicalTrials.gov and WHO ICTRP electronic databases to May 2015. Selection Criteria: Randomised controlled trials comparing TXA with no TXA or placebo in women giving birth vaginally or by caesarean section. Data Collection and Analysis: Two authors extracted data and assessed the risk of bias for each trial. Because of data concerns we did not conduct a meta-analysis. Main Result(s): We found 26 trials including a total of 4191 women. Examination of the trial reports raised concerns about the quality of the data. Eight trial reports contained identical or similar text and there were important data inconsistencies in several trials. Two trials did not have ethics committee approval. Meta-analysis of baseline variables suggested that randomisation was inadequate in many trials. Conclusion(s): There is no reliable evidence that TXA prevents postpartum haemorrhage during childbirth. Many of the trials conducted to date are small,

low quality and contain serious flaws. Tweetable abstract: No evidence that TXA prevents postpartum haemorrhage. Existing trials are unreliable, with serious flaws.Copyright © 2016 Royal College of Obstetricians and Gynaecologists

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:embase&id=pmid:27558956&id=doi:10.1111%2F1471-0528.14267&issn=1470-0328&isbn=&volume=123&issue=11&spage=1745&pages=1745-1752&date=2016&title=BJOG%3A+An+International+Journal+of+Obstetrics+and+Gynaecology&atitle=Does+tranexamic+acid+prevent+postpartum+haemorrhage%3F+A+systematic+review+of+randomised+controlled+trials&aulast=Ker&pid=%3Cauthor%3EKer+K.%3BShakur+H.%3BRoberts+I.%3C%2Fauthor%3E%3CAN%3E612294136%3C%2FAN%3E%3CDT%3EReview%3C%2FDT%3E

53. **Role of Tranexamic Acid in Reducing Blood Loss in Vaginal Delivery.**

Item Type: Journal Article

Authors: Roy P.;Sujatha M.S.;Bhandiwad A. and Biswas, B.

Publication Date: 2016

Journal: Journal of Obstetrics and Gynecology of India 66(Supplement 1) (pp 246-250), pp. Date of Publication: 01 Oct 2016

Abstract: Introduction: Anti-fibrinolytic agents are used to reduce obstetric blood loss as the fibrinolytic system is known to get activated after placental delivery. Objective(s): To evaluate the efficacy of parenteral tranexamic acid in reducing blood loss during normal labour and to compare it with the amount of blood loss in patients who received placebo in the third stage of labour. Methodology: Patients with spontaneous labour or planned for induction of labour and fulfilling the inclusion criteria were recruited for the study. In each patient, the pre-delivery pulse rate, blood pressure, Hb gm% and PCV% were noted. Labour was monitored carefully using a partogram. The study group received Inj. Oxytocin and Inj. Tranexamic acid. The control group received Inj. Oxytocin and Placebo injection. Immediately after delivery of the baby, when all the liquor was drained, the patient was placed over a blood drape-a disposable conical, graduated plastic collection bag. The amount of blood collected in the blood drape was measured. Then the patient was given pre-weighed pads, which were weighed 2 h post-partum. The blood loss was measured by measuring the blood collected in the drape and by weighing the swabs before and after delivery. Result(s): The total number of patients studied was 100-equally distributed in both the groups. The age group of the patients and BMI were comparable. There was a significant increase in the pulse rate and decrease in blood pressure in the control group as compared with the study group. The post-delivery haemoglobin and haematocrit were significantly reduced in the control group as compared to the study group. The mean blood loss at the end of 2 h was 105 ml in the study group and 252 ml in the control group. There was a significant increase in the usage of uterotonics and also in the need for blood transfusion in the control group; 12 % of the patients in the control group had to stay for more than 3 days compared to 2 % in the study group. Conclusion(s): Tranexamic acid injection, an antifibrinolytic agent when given prophylactically after the delivery of the baby, by intravenous route appears to reduce the blood loss and maternal morbidity during normal labour effectively.Copyright © 2016, Federation of Obstetric & Gynecological Societies of India.

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=doi:10.1007%2Fs13224-016-0856-4&issn=0971-9202&isbn=&volume=66&issue=Supplement+1&spage=246&pages=246-250&date=2016&title=Journal+of+Obstetrics+and+Gynecology+of+India&atitle=Role+of+Tranexamic+Acid+in+Reducing+Blood+Loss+in+Vaginal+Delivery&aulast=Roy&pid=%3Cauthor%3ERoy+P.%3BSujatha+M.S.%3BBhandiwad+A.%3BBiswas+B.%3C%2Fauthor%3E%3CAN%3E609598409%3C%2FAN%3E%3CDT%3EArticle%3C%2FDT%3E

54. **Randomized controlled trial of tranexamic acid among parturients at increased risk for postpartum hemorrhage undergoing cesarean delivery.**

Item Type: Journal Article

Authors: Sujata, Nambiath;Tobin, Raj;Kaur, Ranjeet;Aneja, Anjila;Khanna, Mona and Hanjoora, Vijay M.

Publication Date: Jun ,2016

Journal: International Journal of Gynaecology & Obstetrics 133(3), pp. 312–315

Abstract: OBJECTIVE: To assess the effects of tranexamic acid among patients undergoing cesarean delivery who were at high risk of postpartum hemorrhage. METHODS: Between August 1, 2012, and April 30, 2013, a randomized controlled trial was performed at a tertiary care center in India. Women undergoing an elective or emergency cesarean delivery who were at high risk for postpartum hemorrhage were enrolled. They were randomly assigned using sealed, opaque envelopes to receive 10mg/kg tranexamic acid or normal saline 10min before skin incision. Anesthesiologists were not masked to group assignment, but patients and obstetricians were. The primary outcome was need for additional uterotonic drugs within 24h after delivery. Analyses were by intention to treat. RESULTS: Thirty patients were assigned to each group. Additional uterotonic drugs were required in 7 (23%) patients assigned to tranexamic acid and 25 (83%) patients in the control group (P CONCLUSION: Intravenous tranexamic acid, administered before skin incision, significantly reduced the requirement for additional uterotonics among women at increased risk for postpartum hemorrhage. Clinical Trials Registry India: CTRI/2015/05/005752.

URL: https://libkey.io/libraries/2828/openurl?genre=article&sid=OVID:medline&id=pmid:26952346&id=doi:10.1016%2Fj.ijgo.2015.09.032&issn=0020-7292&isbn=&volume=133&issue=3&spage=312&pages=312-5&date=2016&title=International+Journal+of+Gynaecology+%26+Obstetrics&atitle=Randomized+controlled+trial+of+tranexamic+acid+among+parturients+at+increased+risk+for+postpartum+hemorrhage+undergoing+cesarean+delivery.&aulast=Sujata&pid=%3Cauthor%3ESujata+N%3BTobin+R%3BKaur+R%3BAneja+A%3BKhanna+M%3BHanjoora+VM%3C%2Fauthor%3E%3CAN%3E26952346%3C%2FAN%3E%3CDT%3EJournal+Article%3C%2FDT%3E

55. **The effect of prophylactic intravenous tranexamic acid on blood loss after vaginal delivery in women at low risk of postpartum haemorrhage: A double-blind randomised controlled trial.**

Item Type: Journal Article

Authors: Mirghafourvand M.;MohammadAlizadeh S.;Abbasalizadeh F. and Shirdel, M.

Publication Date: 2015

Journal: Australian and New Zealand Journal of Obstetrics and Gynaecology 55(1), pp. 53–58

Abstract: Objective: To determine the effect of prophylactic tranexamic acid (TA) on calculated and measured blood loss after vaginal delivery in women at low risk of postpartum haemorrhage. Method(s): In this double-blind randomised controlled trial, 120 women with a singleton pregnancy were randomly allocated to receive either one gram intravenous TA or placebo in addition to 10 IU oxytocin after delivery of the fetus. Calculated blood loss was determined based on haematocrit before delivery and 12-24 h postdelivery. The quantity of blood loss was measured during two time periods: from delivery of the fetus to placental expulsion and from placental expulsion to the end of the second hour after childbirth. Result(s): The mean (SD) calculated total blood loss (519 (320) vs 659 (402) mL, P = 0.036) and measured blood loss from placental delivery to 2 h postpartum (69 (39) vs 108 (53) mL, P 1000 mL was lower in the TA group (7% vs 18%, P = 0.048). Conclusion(s): Prophylactic TA reduces blood loss after vaginal delivery in women with a low risk of postpartum haemorrhage. The prophylactic use of TA may reduce blood loss complications and enhance maternal health.Copyright © 2015 The Royal Australian and New Zealand College of Obstetricians and Gynaecologists.

56. **Tranexamic acid for preventing postpartum haemorrhage**

Item Type: Journal Article

Authors: Novikova, Natalia;Hofmeyr, G. Justus and Cluver, Catherine

Publication Date: 2015

Journal: Cochrane Database of Systematic Reviews , pp. (6)CD–2015 06 16

Abstract: BACKGROUND: Postpartum haemorrhage (PPH) is a common and potentially life-threatening complication of labour. Several options for preventing PPH are available, but further advances in this field are important, especially the identification of safe, easy to use and cost-effective regimens. Tranexamic acid (TA), which is an antifibrinolytic agent that is used widely to prevent and treat haemorrhage, merits evaluation to assess whether it meets these criteria. OBJECTIVES: To determine, from the best available evidence, whether TA is effective and safe for preventing PPH in comparison to placebo or no treatment (with or without uterotonic co-treatment), or to uterotonic agents. SEARCH METHODS: We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (28 January 2015) and reference lists of retrieved studies. SELECTION CRITERIA: All published, unpublished and ongoing randomised controlled trials (RCTs) evaluating the use of TA alone or in addition to uterotonics in the third stage of labour or during caesarean section (CS) to prevent PPH. DATA COLLECTION AND ANALYSIS: Two review authors independently assessed for inclusion all the potential studies identified as a result of the search strategy. We entered the data into Review Manager software and checked for accuracy. MAIN RESULTS: Twelve trials involving 3285 healthy women at low risk of excessive bleeding undergoing elective CS (nine trials, 2453 participants) or spontaneous birth (three trials, 832 participants) satisfied inclusion criteria and contributed data to the analysis. All participants received routine prophylactic uterotonics in accordance with the local guideline in addition to TA or placebo or no intervention. Overall, included studies had moderate risk of bias for random sequence generation, allocation concealment, blinding, selective reporting and low risk of bias for incomplete data. The quality of evidence was also as assessed using GRADE.Blood loss greater than 400 mL or 500 mL, and more than 1000 mL was less common in women who received TA versus placebo or no intervention (risk ratio (RR) 0.52, 95% confidence interval (CI) 0.42 to 0.63, six trials, 1398 women; moderate quality evidence) and (RR 0.40, 95% CI 0.23 to 0.71, six trials, 2093 women; moderate quality evidence), respectively. TA was effective in decreasing the incidence of blood loss greater than 1000 mL in women who had undergone CS (RR 0.43, 95% CI 0.23, 0.78, four trials, 1534 women), but not vaginal birth (RR 0.28, 95% CI 0.06, 1.36, two trials 559 women). The effect of TA on blood loss greater than 500 mL or 400 mL was more pronounced in the group of women having vaginal birth than in women who had CS. Mean blood loss (from delivery until two hours postpartum) was lower in women who received TA versus placebo or no intervention (mean difference MD - 77.79 mL, 95% CI -97.95, -57.64, five trials, 1186 women) and this effect was similar following vaginal birth and CS.Additional medical interventions (moderate quality evidence) and blood transfusions were less frequent in women receiving TA versus placebo or no interventions. Mild side effects such as nausea, vomiting, dizziness were more common with the use of TA (moderate quality evidence). The effect of TA on maternal mortality, severe morbidity and thromboembolic events is uncertain (low quality evidence). AUTHORS' CONCLUSIONS: TA (in addition to uterotonic medications) decreases postpartum blood loss and prevents PPH and blood transfusions following vaginal birth and CS in women at low risk of PPH based on studies of mixed quality. There is insufficient evidence to draw conclusions about serious side effects, but there is an increase in the incidence of minor side effects with the use of TA. Effects of TA on thromboembolic events and mortality as well as its use in high-risk women should be

investigated further.

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57. **Tranexamic acid for the prevention and treatment of postpartum haemorrhage.**

Item Type: Journal Article

Authors: Sentilhes L.;Lasocki S.;DucloyBouthors A.S.;Deruelle P.;Dreyfus M.;Perrotin F.;Goffinet F. and DeneuxTharaux, C.

Publication Date: 2015

Journal: British Journal of Anaesthesia 114(4), pp. 576–587

Abstract: Postpartum haemorrhage (PPH) is a major cause of maternal mortality, accounting for one-quarter of all maternal deaths worldwide. Uterotonics after birth are the only intervention that has been shown to be effective for PPH prevention. Tranexamic acid (TXA), an antifibrinolytic agent, has therefore been investigated as a potentially useful complement to this for both prevention and treatment because its hypothesized mechanism of action in PPH supplements that of uterotonics and because it has been proved to reduce blood loss in elective surgery, bleeding in trauma patients, and menstrual blood loss. This review covers evidence from randomized controlled trials (RCTs) for PPH prevention after caesarean (n=10) and vaginal (n=2) deliveries and for PPH treatment after vaginal delivery (n=1). It discusses its efficacy and side effects overall and in relation to the various doses studied for both indications. TXA appears to be a promising drug for the prevention and treatment of PPH after both vaginal and caesarean delivery. Nevertheless, the current level of evidence supporting its efficacy is insufficient, as are the data about its benefit:harm ratio. Large, adequately powered multicentre RCTs are required before its widespread use for preventing and treating PPH can be recommended.

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58. **Can intravenous injection of tranexamic acid be used in routine practice with active management of the third stage of labor in vaginal delivery? A randomized controlled study.**

Item Type: Journal Article

Authors: Gungorduk K.;Asicioglu O.;Yildirim G.;Ark C.;Tekirdag A. and Besimoglu, B.

Publication Date: 2013

Journal: American Journal of Perinatology 30(5), pp. 407–413

Abstract: Objective To estimate the effects of adding intravenous tranexamic acid (TA) to the standard active management of third-stage labor to reduce vaginal blood loss during the third and fourth stages of labor. Study Design A prospective, double-blind, equivalence randomized, controlled study was performed. Women were randomly allocated to receive an intravenous infusion of TA (experimental group, n = 228) or 5% glucose (placebo group, n = 226) at delivery of the anterior shoulder. Active management of the third stage of labor, which includes prophylactic injection of 10 IU of oxytocin within 2 minutes of birth, early clamping of the umbilical cord, and controlled cord traction following delivery, was used in both groups. The primary outcome was mean blood loss during the third and fourth stages of labor. Results Mean estimated blood loss at the third and fourth stages of labor was significantly lower in the experimental group than that in the placebo group (261.5 +/- 146.8 mL versus 349.98 +/- 188.85 mL, respectively; p 500 mL was also lower in the experimental group (4, 1.8%) compared with that in the placebo controls (15, [6.8%]; relative risk, 3.76; 95% confidence interval, 1.27 to 11.15; p = 0.01). No episode of thrombosis occurred in the women who received TA. Conclusions The use of TA with standard active management of the third stage of labor reduced postpartum blood loss, and no increase in the incidence of thromboembolic events was observed. © 2013 by Thieme Medical Publishers, Inc.

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Search History

Ovid MEDLINE(R) ALL <1946 to July 11, 2025>

1	exp Tranexamic Acid/	5699
2	tranexamic acid.tw,kw.	7842
3	TXA.tw,kw.	3570
4	1 or 2 or 3	9502
5	exp Uterine Hemorrhage/	25035
6	exp Postpartum Hemorrhage/	9239
7	((postpartum or post-partum or obstetric) adj3 h?emorrhag*).tw,kw.	11536
8	5 or 6 or 7	30614
9	exp Cesarean Section/	56546
10	((emergency or urgent or emergent) adj3 (c-section* or c?esarean*)).tw,kw.	5645
11	exp Emergencies/	44364
12	9 and 11	987
13	10 or 12	6114
14	(vagina* adj3 (deliver* or birth*)).tw,kw.	27877
15	13 or 14	32950
16	4 and 8 and 15	109
17	limit 16 to english language	107
18	from 17 keep 1-2,7,12,14,19-20,22,25,31,34-35,40,42,46,50,52,54,56,63,67-69,71-72,74,76-77,81,86,89,92,94,96,99	35

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Embase <1974 to 2025 July 10>

1	*tranexamic acid/	8271
2	(tranexamic acid or TXA).m_titl.	6944
3	1 or 2	8673
4	exp obstetric hemorrhage/	27307
5	((postpartum or post-partum or obstetric) adj3 (h?emorrhag* or blood loss or bleeding)).tw,kw.	19792
6	4 or 5	30508
7	exp bleeding prophylaxis/	791
8	(prophyla* or prevent*).tw,kw.	2859438
9	7 or 8	2859657
10	3 and 6 and 9	331
11	exp obstetric hemorrhage/pc [Prevention]	1859
12	exp postpartum hemorrhage/pc [Prevention]	1756
13	exp intrapartum hemorrhage/pc [Prevention]	10
14	exp uterus bleeding/pc [Prevention]	205
15	11 or 12 or 13 or 14	2044
16	3 and 15	137
17	10 or 16	344
18	exp cesarean section/	145966
19	exp emergency surgery/	38800
20	18 and 19	3835
21	((emergency or urgent or emergent or unplanned or non-elective) adj3 (c-section* or c?esarean*)).tw,kw.	10562
22	exp vaginal delivery/	52144
23	(vagina* adj3 (deliver* or birth*)).tw,kw.	45495
24	20 or 21 or 22 or 23	76385
25	3 and 6 and 10 and 24	141
26	3 and 15 and 24	59
27	25 or 26	143

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28 limit 27 to english language 141

29 from 28 keep 36,38-42,44,48-51,53,56-57,59-61,63-66,70-74,76,78-80,84,86-87,89,92,97-99,101-103,105-106,109-112,120,123,126-127,130,132,136 54

30 ((unscheduled or un-scheduled) adj3 (c?esarean* or c-section*)).tw,kw. 160

31 3 and 30 2