



Original Research Article

A study to assess the use of tranexamic acid intraoperative & post cesarean section to reduce blood loss

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ABSTRACT

Introduction: The connection between cesarean bleeding is comprehended both during and after C. section. The post-partum bleeding remains the principle reason of maternal complications. This investigation was directed to assess the impact and wellbeing of tranexamic acid to decrease cesarean blood loss (LSCS) and any reactions.

Materials and Methods: Normal 100 women planned cesarean were analyzed somewhere in the range of 37 and 40 weeks. They were partitioned into two groups. The main group 50 individuals received 1 gm IV of tranexamic acid before 15 min of caesarean and the control set of 50 individuals didn't get tranexamic acid.

Results: The patient age, tallness, weight, gestational age in the two gatherings were comparative, measurably same. Haemoglobin fell marginally after labour in the two gatherings, however no measurable distinction between the two gatherings was watched. There were no thrombosis events in the investigation. Tranexamic acid drops the blood loss from the minute the placenta was conveyed to 2 hours after labour ($P < 0.001$) and from the finish of the LSCS to 2 hours after labour ($P < 0.001$).

Conclusion: Tranexamic acid assumes a powerful job in diminishing blood loss during LSCS without making an unfavourable response. Hence, it tends to be utilized viably to diminish maternal bleeding during LSCS.

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1. Introduction

The significance concern is consistently the bleeding during vaginal delivery or LSCS. After critical dynamic cures, 125,000 women die each year around the globe from the obstetric bleeding.¹ It is essential to take satisfactory measures to lessen the bleeding during and after LSCS. Cesarean rates have expanded from 25% to 30% in numerous parts of the world.²

In spite of different measures to forestall bleeding during the cesarean section, the most well-known trouble found in 20% of cases is PPH bringing about grimness and mortality of mother.³

Routinely intravenous tranexamic acid (TXA) is used to decrease bleeding during and after interventional procedures,⁴ for example, heart procedures, scoliosis, liver transplantation, hip or knee procedure and urinary tract procedures. It was extremely valuable in diminishing blood loss and transfusion recurrence in these intercessions. The discoveries of the MATTER examination show that the utilization of TXA related to blood-based revival subsequent to battling damage brings about better coagulopathy and endurance.⁵

This examination was led to assess the productivity and wellbeing of TXA as far as lessening blood loss following placental conveyance and after LSCS and recording of any unfavourable impacts.

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1.1. Materials and techniques

An imminent investigation of the adequacy of TXA in decreasing blood loss during and after the cesarean section carried. 100 women in cesarean were selected in the range of 37 and 40 weeks, between 20 and 30 years old with a normal tallness of 150-165 cm and a normal body weight of 53-63 kg. Each gathering isolated into 50 each. The investigation group got TXA and the control group didn't received TXA.

Patients with restorative and careful challenges identified with heart, liver or kidney, mind sicknesses and blood issue, abruptio placenta, placenta previa, polyhydramnios, macrosomia, battered and long labour, past cesarean segment, sensitivity to TXA, history of thromboembolic issue, avoidance from the two groups.

Patient consent was taken. TXA 1 gram, weakened in 10 ml distilled water and gradually given over a time of 10 minutes in the study group and was directed 20 minutes before the skin entry point. Oxytocin 10 units in 1 ounces RL and 0.2 mg of methylergometrine was given IM after conveyance of infants in the two gatherings. Pulse, respiratory rate, preoperative circulatory strain were estimated previously and following conveyance and 2 hours of the youngster's introduction to the world. Research center investigation of hemoglobin, routine urinary and renal microscopy, liver and practical tests were performed previously and on the third day after birth.

Blood loss was estimated intraoperatively (ml) as = (weight of wipes utilized during activity - weight of wipes before procedure) + volume of blood maneuvered into the adsorption holder after the placenta is conveyed.

Likewise, pads utilized after the cesarean were finished as long as 2 hours post labour were gauged independently to appraise post-operative blood loss. At any rate, the amniotic liquid and the measure of blood loss preceding to labour were excluded from the loss of blood loss.

2. Results

Patients' attributes were comparative same in two group.

All LSCS were performed under spinal anesthesia and the time of the intercession was 35.40 minutes in the examination gathering and 43.20 minutes in the control group. Cesarean elective & emergency were completed in 50 patients each.

Hemoglobin fell marginally after birth in the two gatherings, despite the fact that it was not factually critical. No huge measurable contrast was seen in urine investigation, liver and kidney practical tests between two group with no thrombosis occurrence in the examination. There was slight contrast in heart rate, respiratory rate and pulse in both gathering.

There was a noteworthy factual distinction in the measure of blood lost from the finish of LSCS till 2 hours PPH in

the two gatherings. In any case, there was no noteworthy distinction in the measure of blood loss from the placental conveyance until the finish of LSCS.

3. Discussion

PPH is generally alluded to as ≥ 500 ml blood misfortune after vaginal conveyance or ≥ 1000 ml after cesarean. In any case, these limits are excluded.

Previous wellbeing conditions and a blood loss of just 200-300 ml can be possibly deadly for a lady with serious iron deficiency or heart failure.⁶

There is a worldwide responsibility to the Millennium Development Goals (MDGs) to lessen maternal mortality by seventy five percent by 2015, which requires a 5.5% decrease in maternal mortality consistently. Since maternal bleeding records for 25% death, viable PPH treatment could make a significant commitment to accomplishing the MDGs in decreasing maternal mortality.⁷

The WOMAN study (World Maternal Antifibrinolytic Trial) surveyed the impact of the principal organization of TXA on mortality, hysterectomy and other ailments (surgical procedure, blood transfusion, danger of non-lethal vascular occasions) in ladies with clinically analyzed PPH. The utilization of restorative administrations and security measures, specifically the thromboembolic impacts on breast feeding youngsters will likewise be assessed. This will be a huge controlled investigation of 15,000 women with a clinical analysis of PPH.⁷

Consistent endeavors are being made to discover estimates that will help diminish bleeding after labor, both by cesarean and the vaginal labour. TXA act by its antifibrinolytic impact, averting the authoritative of plasminogen and plasmin to a fibrin substrate. TXA likewise hinders the change of plasminogen to plasmin with plasminogen activators.⁸

Fibrinogen and fibrin separate quickly during placental conveyance, while plasminogen activators and fibrin debasement items ascends because of enactment of fibrinolytic framework.

The reactions depicted with TXA incorporate gastrointestinal manifestations, for example, the nausea, watery motions and itching, which happen in around 10% of patients. Bizarre inconveniences incorporate hypotension, thrombosis, obscured vision, renal cortex putrefaction and retinal obstruction.⁹ No symptoms were seen in our investigation.

In our study, we found 86.5 ml in the study group versus 142.70 ml in the control gathering (<0.001) which are almost similar seen in Rashmi PS et al.,¹⁰

Tarabrin o et al discovered TXA prominently decreased blood loss from the finish of the cesarean section to 2 hours after conveyance. Hemoglobin following 24 hours post cesarean segment was remarkably higher in the tranexam group than in the control group (12.57 ± 1.33 in the

Table 1: Comparison of Post partum Haemorrhage

Group	Placental Delivery till end of LSCS SD (ml)	End of LSCS to 2hrs Post partum SD (ml)	Placental delivery to 2 hrs post partum SD (ml)
Study	280 ml	80 ml	360 ml
Control	300 ml	150ml	450 ml
P Value	P< 0.001	P<0.001	P< 0.001

Table 2: Incidence of PPH

Blood loss from placental delivery to 2 hrs. postpartum	Study (%)	Control %
< 500ml	48(96)	30(60)
>500 ml	2(4)	20(40)

tranexam gathering and 11.74 ± 1.14 in the control gathering, $p = 0.002$)¹

By consolidating the consequences of three preliminaries, the utilization of TXA fundamentally decreased mean blood loss by 92 ml (95% CI: 76 – 109) contrasted to no treatment.¹¹

Shakur H et al and Ferrer P et al use TXA for the counteractive action of obstetric discharge at a portion of 1 gram without genuine complications.^{7,11} In an emergency, presenting a fixed portion is progressively suitable, since gauging ladies with PPH will be troublesome. In this way, for a WOMAN study, a fixed portion of 1 g of TXA was picked, trailed by 1 g at first if draining proceeds, which is inside the scope of dosages that have been appeared to hinder fibrinolysis and give an impact haemostatic.⁷ The same portion was utilized in our investigation.

A precise survey and combined meta-investigation of 129 preliminaries were performed with 10,488 patients led somewhere in the range of 1972 and 2011 who assessed the impact of TXA on bleeding.¹² This examination demonstrated that TXA lessens blood transfusion in patients. In spite of the fact that this proof has been accessible for over 10 years, the impact on thromboembolic intricacies and mortality stays dubious, requiring a huge, sober minded clinical investigation of TXA in a heterogeneous gathering of patients.¹²

The remedial impact of the antifibrinolytic TXA was the subject of another examination called Clinical randomization of the antifibrinolytic specialist for critical dying (CRASH-2), which indicated that TXA securely lessens the danger of death in bleeding patients.¹³

4. Conclusion

Tranexamic acid assumes a successful job in diminishing blood loss during cesarean without causing difficulties. Subsequently, this medication can be utilized adequately to lessen maternal bleeding during LSCS and has no side effects. Be that as it may, its impact on thromboembolic occasions stays dubious.

5. Source of funding

None.

6. Conflict of interest

None.

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