



## ROLE OF TRANEXAMIC ACID IN DECREASING POST PARTUM HEMORRHAGE AS AN ADJUVANT TO UTEROTONICS

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### ABSTRACT

**BACKGROUND-** POST PARTUM HEMORRHAGE is a major cause of maternal morbidity and mortality worldwide. Best practice for the prevention of post partum haemorrhage (PPH) is AMTSL (active management of third stage of labour) with the use of uterotonics. Oxytocin being the most critical element. Tranexamic acid with its antifibrinolytic effect decreases the bleeding further and adds to the effect of uterotonics. This study was conducted in Jawaharlal Nehru Medical College and Hospital. It was a randomised case control study and conducted on 100 patients undergoing caesarean section. **OBJECTIVE** – To assess the impact of pre-operative intravenous tranexamic acid in reducing blood loss during and after caesarean section. **MATERIAL AND METHODS** – This study was a randomised case control study and conducted on 100 patients undergoing caesarean section for obstetric indication. 100 patients (study group) received 1g of tranexamic acid 10 minutes prior to skin incision and 20 units of oxytocin were given after delivery. The results were compared with 100 another patients of similar profile receiving 20 U of oxytocin only. **RESULT-** Tranexamic acid (TXA) significantly reduces the blood loss from placental delivery to 6 hours post operative period. Also there was less reduction in haemoglobin and haematocrit value in the study group as compared to control group. **CONCLUSION** – Tranexamic acid significantly reduces blood loss in women undergoing caesarean section without any side effects.

**KEYWORDS :** Tranexamic acid (TXA), Post partum haemorrhage (PPH) active management of third stage of labour (AMTSL).

### INTRODUCTION:-

Tranexamic acid is an antifibrinolytic pharmacologic agent with demonstrated effectiveness in reducing blood loss following trauma & major surgeries. Tranexamic acid is a competitive inhibitor of plasminogen activation and prevents fibrinolysis and breakdown of clot thereby stabilising it. In pregnancy it is a category B drug and included in WHO list of essential drugs. In obstetrics and gynaecology it is used in non hormonal treatment of dysfunctional uterine bleeding, menorrhagia, heavy menstrual bleeding etc.

The aim of this study was to assess the effect of intravenous tranexamic acid on blood loss during and after caesarean section.

**MATERIALS & METHODS** – This was a randomised controlled trial conducted in the deptt of obstetrics and gynaecology, Jawaharlal Nehru Medical College and Hospital from March 2022 to Feb 2023

It was conducted on total of 100 patients undergoing lower segment caesarean section with singleton pregnancy for obstetric indication. One gram (1gm) of tranexamic acid was given 10 minute prior to skin incision and 10 units of oxytocin IM was given just after delivery of baby and 10 units of oxytocin in IV drip. The blood losses were compared to control group receiving only 20 unit of oxytocin. The women with medical disorder, bleeding tendencies, risk of thromboembolism, allergy to tranexamic acid, ante partum haemorrhage, twin and polyhydramnios were excluded from the study. All caesarean section were done under spinal anaesthesia.

Blood loss following lower segment caesarean section was estimated by gauze pieces and tetras weighed before and after surgery and amount of blood collected in suction containers. Vaginal bleeding during first six post operative hours was estimated by number of soaked pads after caesarean section.

### RESULT-

There was no significant difference between the study and control group regarding parity, gestational age and mean age.

There was no significant difference between the two groups regarding preoperative haemoglobin but, the post operative, haemoglobin was significantly higher in the study group receiving 1 gram of tranexamic acid along with 20 U of oxytocin.

Variables	Study group.	Control group
1. Vaginal bleeding during six hours post op.	90.53+28.6	108.2+11.0

2. Blood loss from placental delivery to end of LSCS	412.4+102.23	723.8+160.3
3. 48 Hours post operative hemoglobin	10.2+1.2	9.6+1.3
4. Pre operative haemoglobin.	11.0+1.1	11.1+0.8

### DISCUSSION-

Best practice for prevention of post partum haemorrhage is active management of third stage of labour (AMTSL), with the use of uterotonics, specifically oxytocin as the most critical element of AMTSL (active management of third stage of labour). Studies suggesting the use of tranexamic acid for prevention of post partum haemorrhage have been reported in most of the studies, the guideline was to give 1gm of tranexamic acid 10 to 20 minutes before the caesarean section. The findings of the woman trial prompted the world health organisation to update and include tranexamic acid as part of the standard care for women with PPH following vaginal or caesarean birth regardless of aetiology.

Tranexamic acid is a synthetic derivative of the amino acid lysine that acts by blocking plasminogen binding sites and inhibiting the proteolytic function of plasmin, thereby preventing fibrin degradation. Correct dose timing and method of Tranexamic acid administration are critical, when tranexamic acid is used to treat PPH, it should be given as soon as possible (within a 3 hour window) after the onset of bleeding and in conjunction with uterotonic medications if uterine atony is suspected.

The recommended dose for treatment of post partum haemorrhage is 1 gm administered over 10 minutes. The onset of action for tranexamic acid where administered intravenously is 5-15 minutes. Very little of the total Tranexamic acid is metabolised, resulting in more than 95% of the dose being excreted unchanged via renal system. The half life is approximately 2 hours and nearly all (90%) of the drug is excreted within 24 hours of administration.

### CONCLUSION –

Post partum haemorrhage is a leading cause of maternal mortality and morbidity worldwide. Clinicians providing intra partum care must be prepared not only to treat but, if possible to anticipate and prevent post partum haemorrhage. Evidence supports use of AMTSL with uterotonics and cord traction as a means of decreasing post partum blood loss in women of all risk categories in low and high resource setting.

There is high level evidence that tranexamic acid is useful for treatment of PPH when given less than three hours after birth and is best used with oxytocin but before using blood products.

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