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ORIGINAL RESEARCH

Efficacy of Tranexamic acid in reducing bloodloss in LSCS

Meghna Das[1], Alakananda Das[2], Baishakhi Suklabaidya[3]

[1]Assosiate Professor, Department of O&G, Nalbari Medical College, India.
[2]Professor, Department of O&G, Gauhati Medical College, India.

ABSTRACT

Background: Tranexamic acid prevents fibrinolysis by blocking the lysine binding sites on plasminogen molecules. Its a safe and efficient supplement to other uterotonics already in use to reduce bleeding during and after LSCS. Material and Methods: 500 patinets grouped into cases and controls were taken, cases were given Tranexamic acid in addition to third stage management and blood loss was calculated by gravimetric method and changes in hematocrit in both groups. Patients vitals were monitored and checked for any adverse drug reactions. Patients with medical, surgical complications, blood disorders, h/o allergy to TXA, abnormal placentations, multiple pregnancies, polyhydramnios, pregnancy with myoma were excluded from the study along with those who were transfused blood within 24hrs of LSCS. Results: Tranexamic acid significantly reduces bleeding from time of placental delivery to 2 hours postpartum in LSCS, similar to studies done by Gohel-Mayer, Yehia, Goswami, Goswami and others. Conclusion: Tranexamic acid has been shown to significantly reduce the amount of blood loss during & after lower segment cesarean section without any serious adverse effects.

Corresponding Author: Dr. Baishakhi Suklabaidya, PG III[rd] Year, Department of obstetrics and gynaecology, GMCH, Narakasur Hilltop, Bhangagarh Guwahati, Assam 781032, India.
Email: baishakhi.110794@gmail.com

INTRODUCTION

Tranexamic acid, a synthetic version of the amino acid lysine, prevents fibrinolysis by blocking the lysine binding sites on plasminogen molecules[1,2]. Its a safe and efficient supplement to other uterotonics already in use to reduce bleeding during and after LSCS. Moreover, blood loss frequently leads to transfusion of allogenic blood products , which expose patients to the risk of transfusion related adverse effects such as febrile non hemolytic transfusion reactions, transfusion errors and blood borne infections.

AIMS AND OBJECTIVE: Aim of the study is to find out the efficacy of tranexamic acid in reducing blood loss during LSCS

MATERIALS AND METHODS

500 term singleton pregnancies (250 elective and 250 emergency) were selected and grouped under cases and controls (250 each including 125 elective and 125 emergency) with proper informed consent for the interventional RCT in Gauhati Medical College.

Patients with medical, surgical complications, blood disorders, h/o allergy to TXA, abnormal placentations, multiple pregnancies, polyhydramnios,pregnancy with myoma were excluded from the study along with them who were transfused blood within 24hrs of LSCS.

ADMINISTRATION: In cases,10 minutes before incision, tranexamic acid 1gm IV infused (over 5 min). After delivery of the neonate, oxytocin 10 units given IM. In controls,inj oxytocin is admisitered as per routine third stage management.

Blood loss estimation: Done by gravimetric method by weighing soaked mops, suction canister and Visual eastimation chart along with fall in hematocrit 24hrs postop.

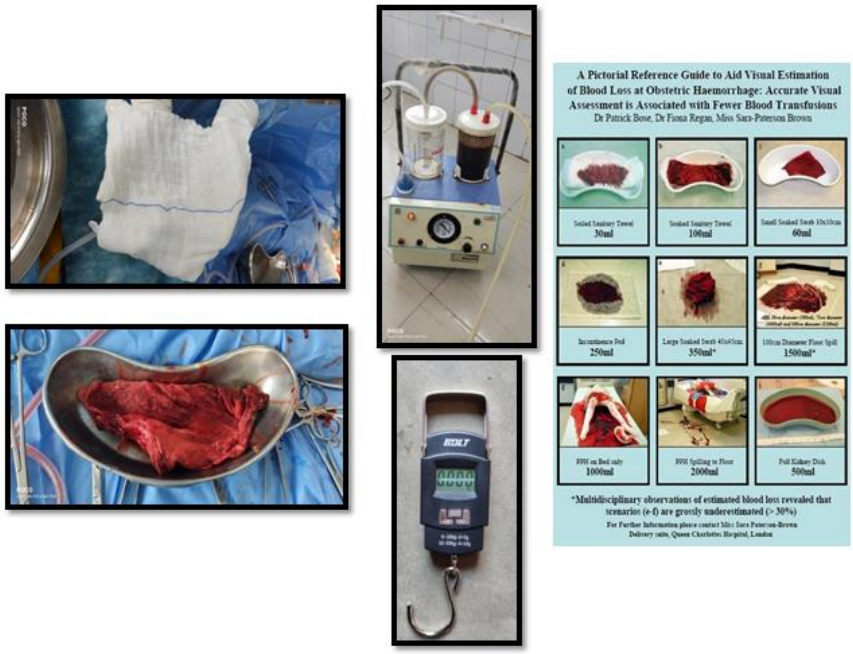


Figure 1

RESULTS & OBSERVATIONS

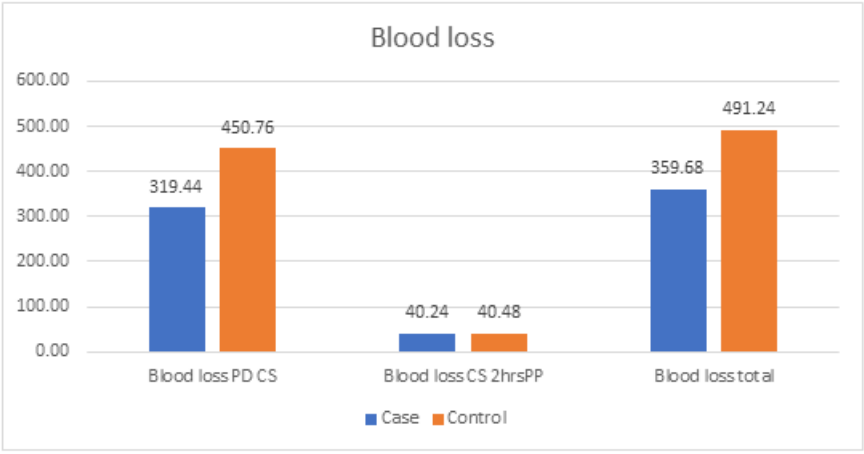


Figure 2: Bar diagram of distribution with respect to blood loss in cases and controls from placental delivery (PD) to end of CS and from end of CS to 2hours post partum showing adding tranexamic acid to oxytocin significantly reducing bloodloss in cases (compared to contols who only received oxytocin).

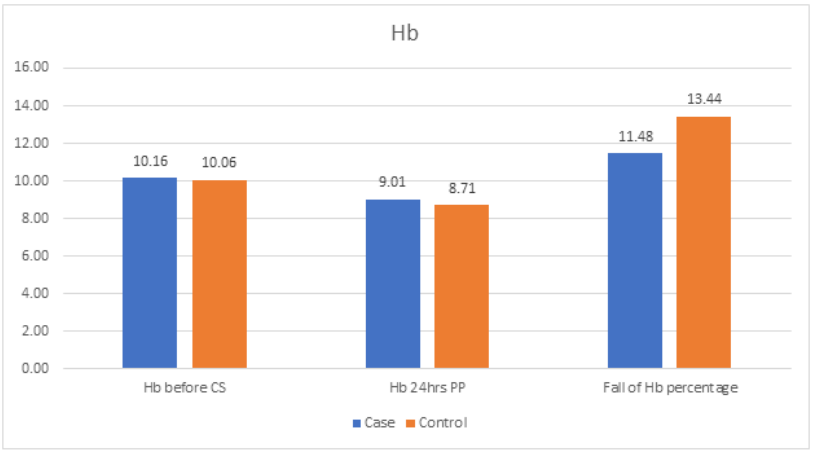
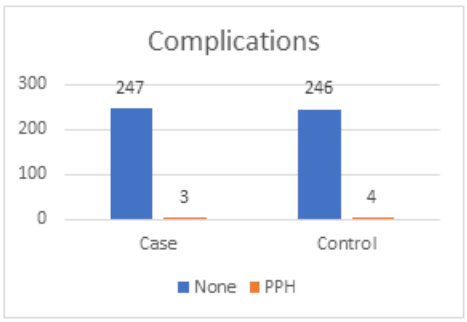


Figure 3: Bar diagram of fall in hemoglobin from before CS to 24hrs post op showing cases with significantly lesser fall in Hb where tranexamic acid was used.



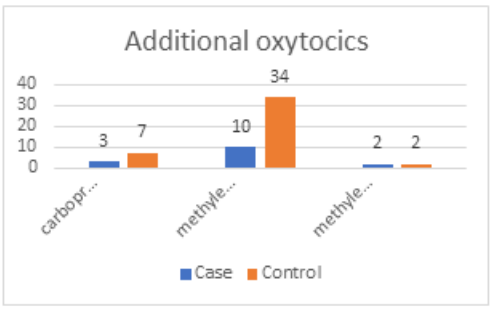


Figure 4: Bar diagram showing distribution of complications in cases and controls with not much statistical significant difference.

Figure 5: Bar diagram of distribution with respect to use of additional oxytocics in cases and controls showing cases requiring less additional oxytocics where tranexamic acid was used.

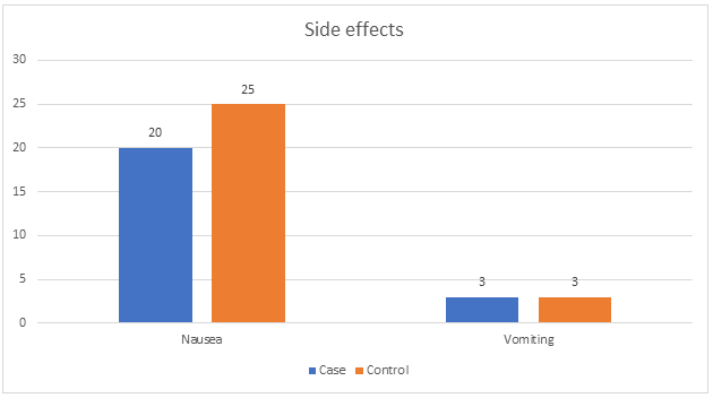


Figure 6: Bar diagram of distribution with respect to side effects in cases and controls showing not much statistical significance ensuring the safety of the drug.

TABLE 1: TABLE COMPARING BLOOS LOSS (FROM PLACENTAL DELIVERY TO 2HRS POST PARTUM) IN CASES AND CONTROLS IN VARIOUS STUDIES

STUDY	BLOOD LOSS IN CASES	BLOOD LOSS IN CONTROLS	P VALUE
Gohel Mayer et al[14]	374.92±51.46	472.79±43.54	0.003
AmrH Yehia et al[17]	454.5±201	737.6±217	0.002
Goswami et al[18]	527.17±88.66	376.83±31.96	0.001
Afshanshahid & Ayesha khan[19]	(356.44±14.3) ±(35.68±23.29)	(710.22±216.72) & (43.63±28.04)	0.001 0.118
Sharma R et al[51]	378.43±39.32	481.39±36.25	0.003
Lakshmi et al[52]	347.17±108.6	517.72±88	0.001
Present study	359.08±97.52	491.24±88	0.0001

TABLE 2: DROP IN HEMOGLOBIN 24 HOURS AFTER CS

STUDIES	2hr POST OP in cases	2hr POST OP in controls	P Value
AmrH Yehia et al[17]	30.2±6.6	29.2±2.8	0.002
Afshanshahid & Khan[19]	33.08±1.80	30.53±3.28	<0.001
Present study	11.48±3.96	13.44±4.70	0.0001

DISCUSSION

Our study showed that tranexamic acid significantly reduces bleeding from time of placental delivery to 2 hrs postpartum in LSCS similar to those done by :

- Gohel Mayer et al[3]
- AmrH.Yehia et al[4]
- Goswami et al[5]
- Afshan shahid & Ayesha Khan[6]
- Sharma R et al[7]
- Lakshmi et al[8]
- Zheng SR, Yang HX, et al[9]
- Ming-yingGai, Lian-fang Wu & coworkers[10]

CONCLUSION

Tranexamic acid significantly reduced the amount of blood loss during & after lower segment cesarean section without significant adverse effects.

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