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Original Research

Tranexamic acid in controlling bleeding during cesarean section

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ABSTRACT

Background: Healthcare providers keep a careful eye out for bleeding during or after a cesarean section (C-section). While some bleeding during surgery is acceptable, excessive bleeding might cause problems. The present study was conducted to assess the role of tranexamic acid in controlling bleeding in cesarean section.

Materials & Methods:860 women undergoing cesarean section between 37 and 40 weekswere divided into 2 groups. Group I received 1 gm IV of tranexamic acid before 15 min of cesarean and group II didn't get tranexamic acid. Blood loss in both groups was compared.

Results: There were 12 and 14, 15 and 12, 8 and 9 and 5 and 5 in group I and group II based on gestation age was 37 weeks, 38 weeks, 39 weeks and 40 weeks respectively. The difference was non- significant (P> 0.05). The mean blood loss from placental delivery till the end of LSCS was 112 ml in group I and 135 ml in group II and from end of LSCS to 2 hours postpartum was 75 ml in group I and 125 ml in group II. Blood loss <500 ml was seen in 22 in group I and 15 in group II and >500 ml in 18 in group I and 25 in group II. The difference was significant (P< 0.05).

Conclusion: It was discovered that tranexamic acid worked well to reduce bleeding during cesarean sections. It can therefore be used in these situations.

Keywords: Bleeding, tranexamic acid, Women

Introduction

Healthcare providers keep a careful eye out for bleeding during or after a cesarean section (C-section). While some bleeding during surgery is acceptable, excessive bleeding might cause problems.[1, 2] Because of the incision and the nature of the procedure, some bleeding is to be expected during a C-section. During the surgery, surgeons cauterize blood arteries to reduce bleeding. Postpartum hemorrhage is frequently caused by uterine atony. Increased bleeding results from the uterus's inability to contract properly after delivery.[3] Medication is frequently used by medical professionals to induce uterine contractions and stop bleeding. Bleeding may result if the placenta is not delivered fully or if there are problems with its attachment. Examining and removing the placenta correctly arecrucial to prevent complication.[4,5]

Despite numerous attempts to stop bleeding during a cesarean section, PPH is the most frequent problem, occurring in 20% of instances and leading to the mother's death and grimness.[6] To stop bleeding before and after interventional treatments such scoliosis, liver transplants, hip or knee replacements, cardiac surgeries, and urinary tract operations, intravenous tranexamic acid (TXA) is frequently utilized. It was quite beneficial in these mediations in lowering blood loss and the requirement for repeated transfusions.[7]The present study was conducted to assess the role of tranexamic acid in controlling bleeding in cesarean section.

Materials & Methods

The present study consisted of 80 women undergoing cesarean section between 37 and 40 weeks. All gave their written consent to participate in the study.

Data such as name, age, etc. was recorded. Everyone was split up into two groups of forty. Prior to a 15-minute cesarean section, Group I received 1 gm IV of tranexamic acid, while Group II did not receive any tranexamic acid. Intraoperative blood loss (ml) was calculated as follows: (weight of wipes used during activity - weight of wipes prior to procedure) + volume of blood moved into the adsorption holder during placenta transfer.

Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

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Results

Table: I gestation age (weeks) wise distribution of subjects

Age group (weeks)	Group I (40)	Group II(40)	P value
37	12	14	0.85
38	15	12	
39	8	9	
40	5	5	

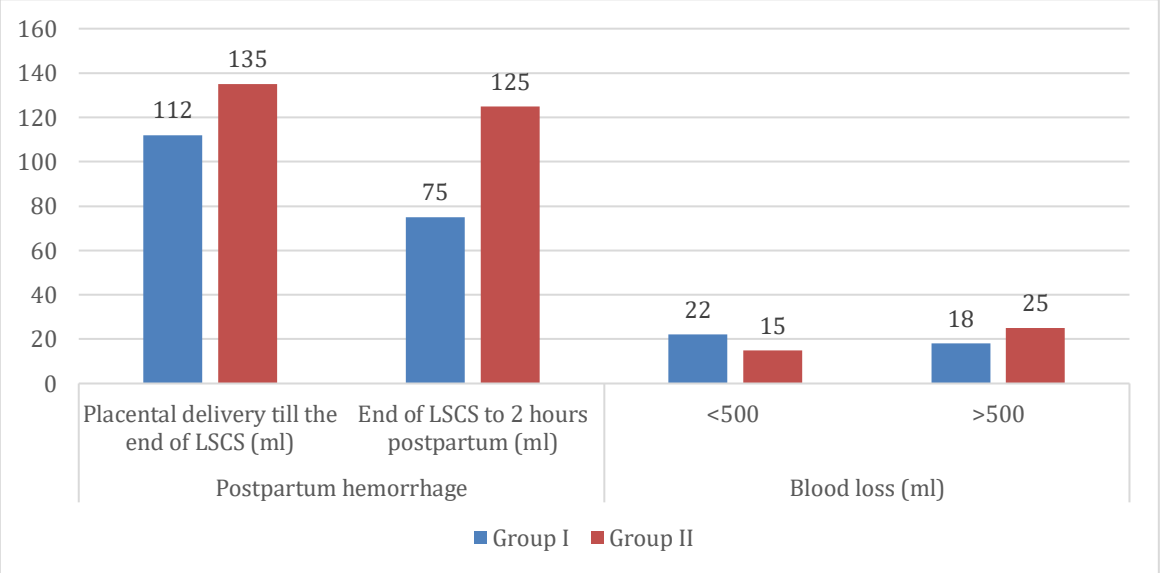
Table I shows that there were 12 and 14, 15 and 12, 8 and 9 and 5 and 5 in group I and group II based on gestation age was 37 weeks, 38 weeks, 39 weeks and 40 weeks respectively. The difference was non- significant (P> 0.05).

Table: II Comparison of parameters

Parameters	Variables	Group I	Group II	P value
Postpartum hemorrhage	Placental delivery till the end of LSCS (ml)	112	135	0.04
	End of LSCS to 2 hours postpartum (ml)	75	125	0.01
Blood loss (ml)	<500	22	15	
	>500	18	25	

Table II, graph I show that the mean blood loss from placental delivery till the end of LSCS was 112 ml in group I and 135 ml in group II and from end of LSCS to 2 hours postpartum was 75 ml in group I and 125 ml in group II.Blood loss <500 ml was seen in 22 in group I and 15 in group II and >500 ml in 18 in group I and 25 in group II. The difference was significant (P< 0.05).

Graph: I Comparison of parameters



Discussion

Bleeding may result from unintentional damage to blood vessels during surgery. Surgeons are taught to recognize injuries and treat them right away. Excessive bleeding during a C-section may be caused by pre-existing blood coagulation abnormalities in certain women.[8,9] Prior to surgery, medical professionals typically perform screenings for these diseases. Postpartum hemorrhage may result from incomplete removal of placental or fetal tissue. A thorough inspection and verification of a full delivery are crucial.[10] A variety of methods, including uterine massage, drugs that encourage uterine contractions, and, in extreme situations, blood transfusions, are used to control bleeding during a C-section. To avoid difficulties, careful observation and timely action are essential.[11,12]The present study was conducted to assess the role of tranexamic acid in controlling bleeding in cesarean section.

We found that there were 12 and 14, 15 and 12, 8 and 9 and 5 and 5 in group I and group II based on gestation age was 37 weeks, 38 weeks, 39 weeks and 40 weeks respectively. Sekhavat L et al[13]assessed the efficacy and safety of tranexamic acid in reducing blood loss at caesarean section (CS).90 primiparas were divided into two groups who underwent CS. The

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study group, 45 women, received tranexamic acid immediately before CS, whereas the control group, 45 women received placebo. Blood loss volume was measured from the end of CS to 2 h postpartum and compared between the two groups. Hemoglobin (Hb) and hematocrit (Hct) were tested 24 h after CS and compared between the two groups.Tranexamic acid significantly reduced the blood loss from the end of CS to 2 h postpartum; 28.02 +/- 5.53 mL in the tranexamic group versus 37.12 +/- 8.97 mL in the control group (p = 0.000). Hb 24 h after CS was significantly greater in tranexamic group than control group (12.57 +/- 1.33 in the tranexamic group and 11.74 +/- 1.14 in the control group, p = 0.002). No complications or side effects were reported in either group.Tranexamic acid statistically reduces blood loss from end to 2 h after CS and its use was not associated with any side effects or complications. Consequently, tranexamic acid can be used safely and effectively to reduce bleeding resulting from CS.

We found that the mean blood loss from placental delivery till the end of LSCS was 112 ml in group I and 135 ml in group II and from end of LSCS to 2 hours postpartum was 75 ml in group I and 125 ml in group II. Blood loss <500 ml was seen in 22 in group I and 15 in group II and >500 ml in 18 in group I and 25 in group II. ElwatidyS et al[14]evaluated efficacy and safety of large doses of TA on blood loss during spinal operations.Sixty-four consecutive patients undergoing spinal surgery were randomly assigned to 2 groups, TA and placebo. There were 39 males and 25 females, ranging in age from 4 to 86 years with a mean of 51 and median of 56 years. Eighteen patients had multilevel anterior cervical discectomies with or without internal fixation, 22 patients had decompressive surgery (12 laminectomies and 10 intersegmental decompressions) for multiseg- ment spinal stenosis, 15 patients had laminectomy with posterior spinal fixation, and remaining 9 patients had laminectomy and excision of spinal tumor. Statistical analysis showed no significant differences between the 2 study groups with regard to age, sex, weight, preoperative hemoglobin, and hematocrite levels, type of surgery, as well as operative time. In contrast, patients who received TA had 49% reduction of blood loss (P < 0.007) and required 80% less blood transfusion (P < 0.008) than patients who received placebo. The hospital stay was shorter in the TA group, but it did not achieve statistical significance. There were no complications related to the use of large doses of TA in this study.

Mohd FZS et al[15]analyzed 100 women planned for cesarean 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. 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 observed. 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.

The shortcoming of the study is the small sample size.

Conclusion

It was discovered that tranexamic acid worked well to reduce bleeding during cesarean sections. It can therefore be used in these situations.

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