

**EFFECT OF INTRAVENOUS TRANEXAMIC ACID (TXA)
IN ADDITION TO ACTIVE MANAGEMENT OF THIRD
STAGE OF LABOR ON POSTPARTUM BLOOD LOSS IN
VAGINAL DELIVERY- A DOUBLE BLINDED,
RANDOMIZED CONTROLLED TRIAL**



THESIS

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(OBSTETRICS & GYNAECOLOGY)

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(DECLARATION BY THE CANDIDATE)

DECLARATION

I hereby declare that the thesis titled **“Effect of Intravenous Tranexamic Acid (TXA) In Addition To Active Management Of Third Stage Of Labor On Postpartum Blood Loss In Vaginal Delivery: A double Blinded , Randomized Controlled Trial”** embodies the original work carried out by the undersigned in All India Institute of Medical Sciences, Jodhpur.

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CERTIFICATE

This is to certify that the thesis titled **“Effect of Intravenous Tranexamic Acid (TXA) In Addition To Active Management Of Third Stage Of Labor On Postpartum Blood Loss In Vaginal Delivery: A Double Blinded, Randomized Controlled Trial”** is the bonafide work of **Dr. Pratibha**, in the Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, Jodhpur.


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ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR
CERTIFICATE

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No one who achieves success does so without acknowledging the help of others. The wise and confident acknowledge this help with gratitude. -

Alfred North Whitehead

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LIST OF ABBREVIATIONS

AMTSL	:	Active management of Third Stage of Labor
APTT	:	Activated Partial Thromboplastin clotting Time
AFLP	:	Acute Fatty Liver of Pregnancy
AIIMS	:	All India Institute of Medical Sciences
APLA	:	Antiphospholipid antibody
CS		Cesarean Section
CCT	:	Controlled Cord Traction
CKD	:	Chronic Kidney Disease
CRASH	:	Clinical Randomization of an Antifibrinolytic in Significant Hemorrhage
CI	:	Confidence Interval
EDTA	:	Ethylene-diamine-tetra-acetic acid
FDA	:	Food and Drug Administration
HELLP	:	Hemolysis Elevated Liver Enzymes and Low Platelet
IM	:	Intramuscular
INR	:	International Normalized Ratio
IUD	:	In Utero death
IV	:	Intravenous
IQR	:	Interquartile Range
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IM	:	Intramuscular
INR	:	International Normalized Ratio
IUD	:	In Utero death
IV	:	Intravenous
IQR	:	Interquartile Range
LMWH	:	Low Molecular Weight Heparin
MMR	:	Maternal Mortality Ratio
PPH	:	Postpartum Hemorrhage
PT	:	Prothrombin Time
RR	:	Relative Risk
SGOT	:	Serum Glutamic-Oxaloacetic Transaminase
SGPT	:	Serum Glutamic-Pyruvic Transaminase
SLE	:	Systemic Lupus Erythematosus
TRAAP	:	Tranexamic Acid for Prevention of blood loss after vaginal delivery
TRAAP-2	:	Tranexamic Acid for Preventing postpartum hemorrhage after CS delivery
TXA	:	Tranexamic Acid
WHO	:	World Health Organization
WOMAN	:	World Maternal Antifibrinolytic

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ABSTRACT

Background: Postpartum hemorrhage (PPH) is a major cause of maternal mortality, accounting for one-quarter of maternal deaths in India. The use of tranexamic acid (TXA), an antifibrinolytic agent, has shown a decrease in mortality rates when used for the treatment of postpartum hemorrhage. The present study aimed to assess whether, following a vaginal delivery, prophylactic administration of TXA in addition to active management of third stage of labor (AMTSL) decreases postpartum blood loss or not. In addition, potential short- and long-term adverse effects of TXA were also assessed.

Objective: To assess the effect of intravenous TXA (1 g) in reducing blood loss during 3rd and 4th stages of labor following vaginal delivery in addition to AMTSL.

Methods: A double-blinded randomized controlled trial was conducted including 650 women with a singleton pregnancies of more than 34 weeks period of gestation. Women undergoing vaginal delivery were randomly assigned to receive 1g TXA or placebo, intravenously in addition to AMTSL. The primary outcome was to assess the effect of intravenous TXA (1 g) in reducing blood loss during 3rd and 4th stages of labor. Calibrated blood collection bags were used to measure postpartum blood loss. Statistical analysis was done using SPSS software. *p* value less than 0.05 was considered significant.

Results: Maternal characteristics did not differ in 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* = 0.939). The incidence of primary PPH was comparable in both groups (group A: 15.9%, group B: 15.3%, *p* = 0.814). The most common adverse effect reported was dizziness in both groups. No long-term side effect or thromboembolic event was reported. The need of additional uterotonics and transfusion needs did not differ significantly among the two groups.

Conclusion: We conclude from our study that prophylactic use of TXA in addition to AMTSL does not help in further reducing postpartum blood loss following vaginal delivery. Strict use of the three components of AMTSL proposed by WHO i.e., intramuscular oxytocin following delivery of the baby, delayed cord clamping, and controlled cord traction is an effective tool to prevent PPH. However, TXA must be included as a hemostatic agent in the treatment of PPH as it is not associated with any adverse effect in postpartum women.

INTRODUCTION

EPIDEMIOLOGY:

Postpartum hemorrhage (PPH) is defined as a blood loss of 500 ml or more in the first 24 hours after vaginal delivery and in the same timeframe when blood loss is 1000 ml or more it is defined as severe PPH. (1,2)

Secondary PPH is defined as abnormal or excessive blood loss from the birth canal between 24 hours and 12 weeks postnatally. (3)

According to the World Health Organization (WHO), there is substantial fall in maternal mortality ratio (MMR) worldwide from 342 per 100,000 live births in the year 2000 to 211 per 100,000 live births in 2017, reducing the global maternal mortality ratio by 38 percent. (4,5) Postpartum hemorrhage (PPH), as an obstetric emergency complicates 1%–10% of all deliveries and is associated with nearly one-quarter of all maternal deaths globally. (1,6) The most common cause of maternal mortality and maternal complications after delivery both in cesarean sections (CS) and vaginal deliveries worldwide is PPH. (7, 8) According to a 2014 WHO analysis, the risks of maternal deaths from PPH are approximately 16% and 27% in developed and developing regions respectively. (9)

Hence, early diagnosis and prompt intervention in PPH are mandatory components of safe maternity services.

CAUSES OF PPH

Causes of PPH can be summarized as abnormalities in one or more of the following basic processes

(Four T's): (10)

1. Tone: uterine atony
2. Trauma: genital tract trauma
3. Tissue: retained products of conception
4. Thrombin: coagulopathy

Uterine atony accounts for 70% of cases of PPH whereas traumatic cause accounts for 15-20% cases. (10) Retained products of conception have found to increase 3.5 times the risk of PPH. (11)

RISK FACTORS OF PPH

PPH is associated with the following risk factors: (12)

1. Uterine atony:

a) Atony

- Prolong use of oxytocin
- High parity
- Chorioamnionitis
- General anesthesia

b) Overdistended uterus

- Twins or multiple gestations
- Polyhydramnios
- Macrosomia

c) Fibroid uterus

d) Uterine inversion

- Excessive umbilical cord traction
- Short umbilical cord
- Fundal implantation of the placenta

2. Genital tract trauma

a) Episiotomy- operative vaginal delivery

b) Cervical, vaginal and perineal lacerations

c) Uterine rupture

3. Retained placental tissue

a) Retained placenta- succenturiate placenta

b) Placenta accreta

4. Abnormalities of coagulation

- a) Preeclampsia
- b) Inherited clotting factor deficiency
- c) Severe infection
- d) Amniotic fluid embolism
- e) Therapeutic anticoagulation
- f) Fetal death

WHY URGENT TREATMENT IS CRITICAL?

PPH is an obstetric emergency and timely intervention is crucial while treating patients with life-threatening bleeding. Women with PPH bleed to death quickly as shown in figure 1. (13) Most deaths due to hemorrhage occur soon after childbirth, with more than half occurring within 8 hours. (1)

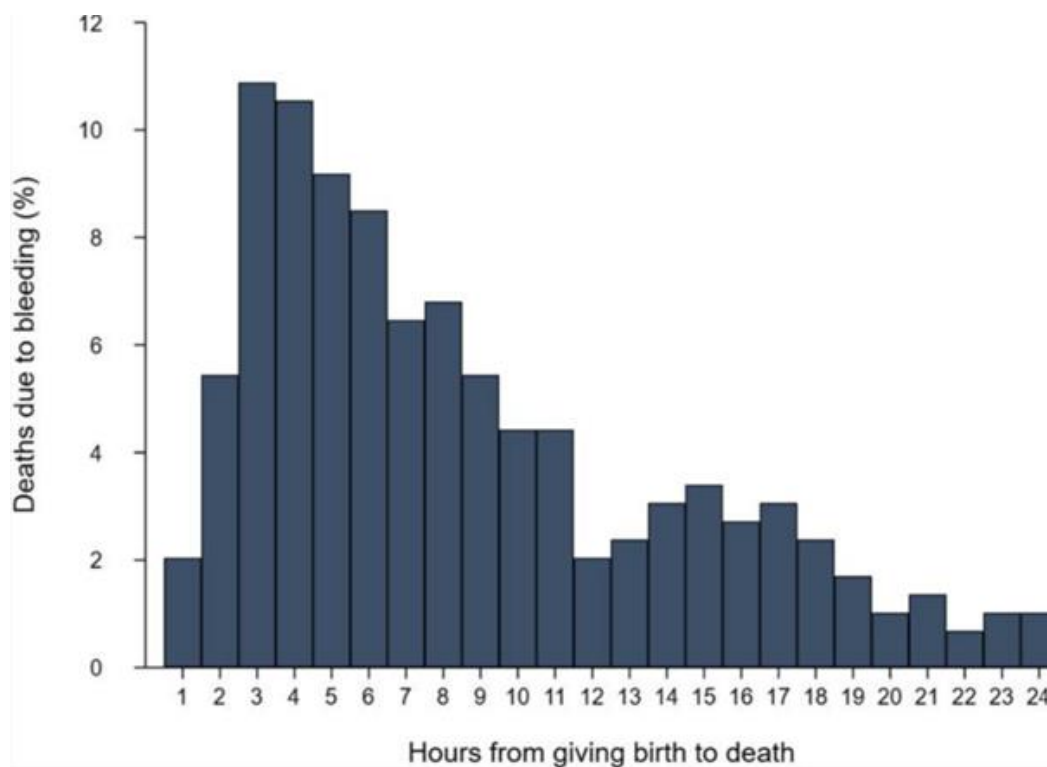


Figure 1: Histogram showing the comparison of death due to postpartum bleeding with time in hours

PREVENTION

Active management of third stage of labor:

Active management of the third stage of labor (AMTSL), was first described in the UK and in Ireland and has been a proven intervention to decrease the incidence of PPH. (12) It consists of: (1)

- Preventive administration of uterotonic agents (10 Units of intramuscular oxytocin) immediately after delivery of the child
- Delayed cord clamping and cutting
- Controlled cord traction (CCT) for delivery of placenta and membranes



Figure 2: Vial of Injection Oxytocin

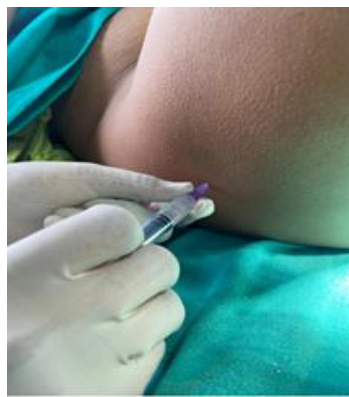


Figure 3: Intramuscular administration of 10 U oxytocin immediately after delivery of the child



Figure 4: Delayed cord clamping

Prophylactic administration of a uterotonic agent, immediately after delivery has shown to reduce PPH rates and hence is recommended for all women and the most effective uterotonic is oxytocin administered either by dilute intravenous infusion (bolus dose of 10 units) or via the intramuscular route (10 units). (1,12,14–16)

The other recommended uterotonics for the prevention of PPH are: (10)

1. Ergometrine/methylergometrine 200 µg IM/IV (exclude hypertensive disorders before its use)

or

2. Oral misoprostol (400–600 µg orally)

or

3. Carbetocin 100 µg IM/IV

According to a 2013 Cochrane review, no added benefit of uterine massage was found to prevent PPH. (17)



Figure 5: Controlled cord traction for delivery of placenta and membranes



Figure 6: Vial of injection TXA

Tranexamic acid [TXA]

TXA, an antifibrinolytic agent, has recently been shown to reduce bleeding-related mortality among women with PPH. (2,18)

Pharmacology

In 1962, Okamoto and Okamoto reported that TXA inhibits fibrinolysis and thereby reduces bleeding. (19)

TXA is a synthetic derivative of amino acid lysine and acts as an antifibrinolytic agent via competitive inhibition of the binding of plasmin and plasminogen to fibrin. (19) TXA, blocks plasminogen-binding sites and inhibits the proteolytic function of plasmin, thereby preventing the degradation of fibrin. (20) So, TXA by inhibiting fibrinolysis (clot breakdown), reduces the amount of bleeding.

Peak plasma concentration is achieved immediately after intravenous administration, then concentration decreases until the sixth hour with an approximate half-life of 2 hours. (21, 22) TXA is considered safe in pregnancy and is a FDA category B drug.

Approximately, only 100th of the serum peak concentration of TXA reaches breast milk, so in infants, it is unlikely to have antifibrinolytic effects. (23)

Adverse effects (10)

1. In more than 10% of cases: headache, abdominal pain, back pain, musculoskeletal pain, nasal signs, and symptoms
2. In 1%–10% of cases: fatigue, anemia, arthralgia, muscle cramps, and muscle spasms.
3. In less than 1% of cases: allergic dermatitis, allergic skin reaction, anaphylactic shock, anaphylactoid reaction, anaphylaxis, cerebral thrombosis, conjunctivitis (ligneous), deep vein thrombosis, diarrhea, dizziness, hypersensitivity reaction, hypotension (with rapid intravenous injection), nausea, pulmonary embolism, renal cortical necrosis, retinal artery occlusion, retinal vein occlusion, seizure, ureteral obstruction, visual disturbance, and vomiting.

Prophylactic TXA use in vaginal delivery and need for a clinical trial:

The WOMAN trial (World Maternal ANTifibrinolytic trial) reported that TXA reduces maternal mortality due to bleeding in women with post-partum hemorrhage with no adverse effects. (24)

A few randomized controlled trials, have been done for demonstrating the use of the prophylactic intravenous administration of 1 gram TXA after childbirth in reducing post-partum blood loss. (2) Most of these were small, single-center trials with considerable methodologic limitations and were performed in women undergoing cesarean section. (25-27) Moreover, the risk of long term adverse events of TXA had not been assessed in these studies, although the risk of thrombotic complications (as compared with nonpregnant women) persists through 12 weeks after delivery. (28) The wide heterogeneity between the existing trials on TXA use raises concerns regarding the data quality and reliability of results. Currently, no guidelines recommend the prophylactic use of TXA to prevent blood loss after vaginal delivery

and for the treatment of PPH. (29,30) Only WHO recommends early use of TXA within 3 hours of birth in both vaginal and cesarean delivery. (17)

Unfortunately, many of these pitfalls make it difficult to validate the safety and efficacy of TXA use and apply results to the general population.

We designed this trial to investigate whether the prophylactic intravenous administration of TXA (1g) in addition to AMTSL will reduce postpartum blood loss during 3rd and 4th stages of labor and decrease the incidence of PPH after vaginal delivery, as compared to placebo (normal saline).

AIM AND OBJECTIVES

AIM OF STUDY:

To determine the effect of prophylactic intravenous administration of (1 g) TXA, as an additional component of AMTSL, in reducing postpartum blood loss following vaginal delivery in comparison with placebo.

OBJECTIVES:

PRIMARY OBJECTIVE:

1. To assess the effect of intravenous TXA (1 g) in reducing blood loss during 3rd and 4th stages of labor in addition to AMTSL following vaginal delivery.

SECONDARY OBJECTIVE:

1. To compare the incidence of primary PPH (≥ 500 ml), severe PPH (≥ 1000 ml) within 24 hours of delivery and within 6 weeks postpartum (secondary PPH) in intervention and placebo groups.
2. To assess the potential adverse effects of TXA (gastrointestinal events, renal dysfunction, any evidence of venous or arterial thrombosis) within 3 months after vaginal delivery.
3. To compare peripartum changes in hemoglobin and hematocrit in the intervention group and placebo group and to compare changes in prothrombin time/international normalized ratio (PT/INR), activated partial thromboplastin clotting time (APTT), liver function tests (SGOT/SGPT/total bilirubin), and renal function tests (urea/creatinine) between intervention group and placebo group, within 12-24 hours following delivery.
4. To compare the need for additional uterotonics and blood transfusion in the two arms.

REVIEW OF LITERATURE

H Yang et al (2001) conducted a randomized controlled trial to study the efficacy and safety of TXA in reducing blood loss following vaginal delivery. In this study, four hundred primiparous women with term singleton pregnancy and vertex presentation participated. All the participants were randomly assigned into four groups. Group I (n = 94) received 1 g IV TXA; group II (n = 92) received 0.5 g IV TXA; group III (n = 92) received 0.5 g IV amino-methyl-benzoic acid and group IV (n = 87) received no treatment. Blood loss was calculated immediately following placental expulsion till 2 hours after delivery by methods of weight and volume. There was no significant difference in blood loss immediately after the expulsion of the placenta among the 4 groups ($p > 0.05$). However, TXA was found to be efficient and safe in reducing postpartum blood loss in the dose of 1.0 g. (31)

CRASH 2 Trial (2010): This trial (Clinical Randomization of an Antifibrinolytic in Significant Hemorrhage) was a randomized, placebo-controlled trial, undertaken in 274 hospitals of 40 countries, to quantify the effects and cost-effectiveness of early administration of TXA (short course) on death, vascular occlusive events and blood transfusion in trauma patients with significant hemorrhage. A total of 20,211 adult trauma patients with, or at risk of significant bleeding within 8 hours of injury were randomly assigned to receive either TXA (loading dose 1 g over 10 min then infusion of 1 g over 8 hours) or a matching placebo. The primary outcome was the death of patients in the hospital within 4 weeks of injury under categories of bleeding, vascular occlusion, multiorgan failure, head injury, or others. Early administration of TXA safely reduced the risk of death in bleeding trauma patients in this study {in TXA group: 198 out of 3747 patients (5.3%) died vs in placebo group: 286 out of 3704 patients (7.7%); RR 0.68; 95% CI (0.57 to 0.82); $p < 0.00010$ }. TXA administration after 3 hours was found to increase the risk of death due to bleeding {144 out of 3272 patients (4.4%) died in the TXA group vs 103 out of 3362 patients (3.1%) in the placebo group; RR 1.44; 95% CI (1.12 to 1.84); $p = 0.004$ } indicating that TXA given after 3 hours is unlikely to be effective. Based on these results, early administration of TXA should be considered for use in bleeding trauma patients as it reduces the risk of death due to bleeding and is highly cost-effective. (32)

Ducloy-Bouthors et al (2011) conducted a multicentered, open-label trial, randomized controlled, to determine whether the administration of high-dose TXA at the time of diagnosis of PPH could reduce blood loss or not. A total of 144 women who had PPH of >800 ml following vaginal delivery were randomly assigned to receive either TXA (loading dose 4 grams over 1 hour then infusion of 1 gram/hour over 6 hours) or nothing. The secondary objectives were the effects of TXA on PPH duration, anemia, transfusion, and need for invasive procedures. This study concluded that TXA can reduce blood loss and maternal morbidity in women with PPH. Although this study was not adequately powered to address the safety issues. Also the limitations were, it was an open-label, unblinded study, and evaluation of TXA-related thrombosis. (33)

Gungorduk et al (2012) conducted a prospective, double-blinded, randomized study to estimate the effectiveness of intravenous TXA in addition to AMTSL in reducing blood loss during the third and fourth stages of labor. In this study, 454 women undergoing vaginal delivery were recruited and randomly allocated to receive either an intravenous infusion of TXA as the experimental group (n= 228) or 5% glucose as the placebo group (n =226) at delivery of the anterior shoulder of the baby. AMTSL (prophylactic injection of 10 IU of oxytocin within 2 minutes of birth, early clamping of the umbilical cord, and controlled cord traction for delivery of placenta and membranes) was done in both groups. It was found that in the experimental group, mean estimated blood loss at the third and fourth stages of labor was significantly lower than that in the placebo group (261.5 ± 146.8 mL versus 349.98 ± 188.85 mL, respectively; $p < 0.001$). The frequency of PPH was also lower in the experimental group than in the placebo group (4, 1.8% vs 15, 6.8%; RR: 3.76; 95% CI: 1.27 to 11.15; $p=0.01$). In the experimental group, thrombosis was not reported at the end of 6 weeks or at 12 weeks indicating that TXA administration along with AMTSL reduces the risk of PPH without increasing the risk of thrombosis. (34)

Mirghafourvand M et al (2015) conducted a double-blinded, randomized controlled trial to determine the effect of prophylactic TXA on blood loss after vaginal delivery in women at low risk of PPH. In this trial, 120 women with singleton pregnancy following vaginal delivery were randomly allocated to receive either 1-gram intravenous TXA or placebo in addition to 10 IU oxytocin. Calculated blood loss was determined based on hematocrit before delivery and 12-24 hours post-delivery. Blood loss was measured during 3rd and 4th stages of labor. The mean calculated total blood

loss (SD) {519 (320) vs 659 (402) mL, $p = 0.036$ } and measured blood loss from placental delivery to 2 hours postpartum {69 (39) vs 108 (53) mL, $p < 0.001$ } were lower in the intervention group compared to control group. No significant difference was found between groups in blood loss during 3rd stage of labor. (35)

P.E. Bouet et al. (2015) conducted a case-control study to assess whether a policy of routine administration of high-dose TXA at the diagnosis of PPH reduces blood loss after vaginal birth or not. This was a single-centered, before-and-after study of 298 women with PPH >500 ml after vaginal birth. The control group included women who delivered from January 2011 through August 2011, and the comparison group included patients who delivered from September 2011 through March 2012. The protocol for the management of PPH was modified from September 2011 which included the administration of high-dose TXA (4 g of TXA IV then 1 g/h for 6 h) once blood loss reached 800 ml. Mean estimated blood loss was not significantly lower in the TXA group ($n = 138$) than in the control group ($n=151$) (915.7 ± 321 ml versus 944.8 ± 313.8 ml respectively; $p = 0.47$). However, the difference between pre-and post-delivery hemoglobin level was lower in the TXA group (2.6 g/dl ± 1.2 versus 2.9 g/dl ± 1.3 ; $p = 0.09$), but it was not significant. So, this trial concluded that the policy of a high dose of TXA in women with PPH did not reduce blood loss significantly. This trial lacks statistical power to draw a solid conclusion about the effectiveness and the safety profile of high-dose TXA for the treatment of PPH. In addition, due to lack of randomization and blinding, the possibility of bias cannot be ruled out. (35)

A Cochrane review by Novikova N et al, (2015) (36) on the effectiveness and safety of TXA use for preventing PPH, analyzed 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). Routine prophylactic uterotonics in accordance with the local guidelines were administered to each patient in addition to TXA or placebo or no intervention. Blood loss greater than 400 mL/ 500 mL, and more than 1000 mL was found less common in women who received TXA versus placebo or no intervention {RR:0.52, 95% 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. The effectiveness of TXA on reducing blood loss greater than 400 mL/500 mL was more pronounced in the women with vaginal birth than in women who had CS and vice versa by comparing the

incidence of blood loss greater than 1000 ml. Overall, mean blood loss (from delivery until 2 hours postpartum) was lower in women who received TXA versus placebo or no intervention in both vaginal and CS deliveries.

Roy P et al. (2016) (37) conducted a randomized, placebo-controlled trial, in which 100 women with singleton pregnancy >38 weeks POG were randomized to receive either both injection oxytocin and TXA or injection oxytocin and placebo. The primary outcome was to evaluate the efficacy of parenteral TXA in reducing blood loss after vaginal delivery. Blood loss was measured by weighing the blood collection bag along with the pre-weighed swabs used. Mean blood loss at end of 2 hours (105 ml vs 252 ml), mean hemoglobin fall, and need of uterotonics were statistically lower in intervention group as compared to the placebo group.

Chunbo Li et al. (2017) (38) conducted a systematic review and meta-analysis to assess the efficacy and safety of TXA in reducing blood loss and lowering the transfusion needs for patients undergoing CS or vaginal delivery. A total of 4747 patients were recruited. The findings were suggestive of a decrease in intraoperative as well as postoperative and total blood loss by a mean volume of 114.25 ml (95% CI, $p < 0.00001$), 36.42 mL (95% CI: -46.50 to -26.34, $p < 0.00001$), and 154.25 mL (95% CI -182.04 to -126.47, $p < 0.00001$) in CS. In vaginal delivery, TXA administration was associated with a decrease in intraoperative, postoperative, and total blood loss by a mean volume of 22.88 mL (95% CI -50.54 to 4.77, $p = 0.10$), 41.24 mL (95% CI -55.50 to -26.98, $p < 0.00001$), and 84.79 mL (95% CI -109.93 to -59.65, $p < 0.00001$). It was also found that after TXA administration, the incidence of PPH, severe PPH, and the need for blood transfusion were low. In addition, an increase in the risk of thrombosis was not reported. However, this could not explain most of the heterogeneity, which might be due to the differences in the study population, doses of TXA or usage of additional uterotonic drugs, CS technique, surgeon's experience, method of assessment of blood loss, or overall study implementation. (35)

Sentilhes et al. (2018) conducted **TRAAP trial** (TRAnexamic Acid for Prevention of blood loss after vaginal delivery) to determine whether prophylactic administration of intravenous TXA in addition to prophylactic oxytocin in women after vaginal delivery reduces PPH incidence or not. It was a multicentric, double-blinded, randomized controlled trial in which women in labor with singleton live fetuses at 35 or more

weeks of period of gestation were included. A total of 4079 women were recruited and among them, 3891 had a vaginal delivery. Eligible women were randomly assigned in a 1:1 ratio to receive 1 g intravenous TXA or placebo. The primary outcome was the incidence of PPH which occurred in 156/1921 women (8.1%) in the TXA group and 188/1918 (9.8%) in the placebo group (RR: 0.83; 95% CI, 0.68 to 1.01; $p = 0.07$). Thus, neither primary nor secondary outcomes differ significantly between the two groups. (40)

Homa K et al. (2018) published a review article to summarize the current data regarding the use of TXA for prophylaxis or treatment of peripartum bleeding in both CS and vaginal deliveries along with its clinical outcomes. A total of 18 trials including both vaginal and CS deliveries, 3 meta-analyses, existing recommendations, and guidelines on the use of TXA in obstetrics were reviewed.

It was concluded that, for the prevention of PPH, administration of TXA reduces postpartum blood loss in both vaginal and CS deliveries. Hence, TXA should be considered in high-risk patients. For treatment of PPH, early administration of TXA (within 3 hours) should be considered for maximal survival benefit from bleeding. The standard dose of TXA in most of these trials was 1 g administered intravenously at the delivery of the anterior shoulder or complete expulsion of the placenta. The current evidence reassures us about the risks of TXA use in obstetrics. However, maternal and neonatal safety profile data were limited. (41)

G. Saccone et al. (2019) conducted a meta-analysis of RCTs to evaluate the effectiveness of TXA for the prevention of PPH after vaginal delivery. Four RCTs, including 4671 pregnant women at or near term gestation, in which TXA usually 1 g IV within 10 min after vaginal delivery was given in addition to oxytocin, cord traction, and uterine massage, for prevention of primary PPH, were analyzed. Women who received prophylactic TXA 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 difference (84.74 mL, 95% CI -109.76 to -59.72). In the TXA group, the risk of thrombotic events was not elevated. This meta-analysis concluded prophylactic TXA 1 g IV within 10 min after vaginal delivery reduces the risk of primary PPH. (42)

The WOMAN (World Maternal Antifibrinolytic) trial (2020) was an international, randomized, double-blinded, placebo-controlled trial to determine the effect of early TXA administration on mortality, hysterectomy, and other maternal morbidities in women with PPH. In this trial, 20,060 women aged 16 years and older with a clinical diagnosis of PPH after vaginal birth or CS were randomly allocated to receive either 1g intravenous TXA or placebo in addition to usual care. After randomization outcome data were collected at death or discharge at 6 weeks (whichever occurred first). Adverse events were reported up to 6 weeks postpartum. This trial concluded that the use of TXA in women with PPH reduces deaths due to bleeding with no added side effects. Case fatality rates in Africa and Asia were 3.0% and 1.7% respectively. Nearly three-quarters of maternal deaths were reported within 3 hours of delivery and 91% of these deaths were due to bleeding. (46)

Sentilhes et al. (2018) conducted a multicentric, double-blinded, randomized, controlled trial, named **TRAAP-2 trial (TRAnexamic Acid for Preventing postpartum hemorrhage after CS delivery)**. The primary outcome was the incidence of PPH. The secondary outcomes included clinical and laboratory measurements (blood samples on day 2) of postpartum blood loss, postpartum blood transfusion needs, adverse events, maternal satisfaction on day 2, and psychological status at 2 months. Women undergoing CS before or during labor at 34 or more weeks of gestation were randomly assigned to receive 1 g TXA or placebo along with a uterotonic agent. Out of 4551 who were randomized, 4431 underwent a cesarean delivery. PPH occurred in 556/2086 (26.7%) women in the TXA group and 653/2067 (31.6%) in the placebo group (adjusted risk ratio, 0.84; 95% CI, 0.75 to 0.94; $p=0.003$). Thromboembolic events within 3 months after delivery were reported in 0.4% of women in the TXA group and 0.1 % in the placebo group. No statistical difference was found in other secondary outcomes. (27)

Ayisha diop et al (2020) conducted a double-blinded, randomized controlled trial to explore the effect of oral tranexamic acid as an adjunct for the PPH treatment. This trial assessed the efficacy, safety, and acceptability of oral TXA for the treatment of PPH when used as an adjunct to sublingual misoprostol after a vaginal delivery. In this trial, 258 women who were diagnosed with PPH were randomized to receive either oral TXA (1950 mg) or placebo in addition to misoprostol 800 mcg sublingually. Blood loss was recorded for 2 hours after administration of the trial regimen. It was found

that the proportion of women who had active bleeding controlled on trial drugs alone and no other interventions was similar (77(60.2%) placebo; 74 (56.9%) TXA, $p=0.59$). Median blood loss was 700 ml in both groups. Adverse effects and acceptability were found similar in both groups. (44)

Igboke et al (2022) conducted a double blinded, randomized, placebo-controlled trial to determine the efficacy and safety of TXA in reducing blood loss in women undergoing vaginal delivery. 176 women were randomized into 2 groups to receive either 1 gm IV TXA or 10 ml water slowly (over 30-60 sec) within 2 minutes after birth. Blood loss after vaginal delivery was estimated by weighing the blood-soaked drapes along with pre-weighed pads used. It was found that the mean blood loss was lower in group A as compared to group B (174.87 ± 119.83 ml versus 341.07 ± 67.97 ml; $p < 0.0001$). The mean blood loss in group B is almost double that of group A which is difficult to explain by just the addition of TXA to usual care. In group A, 5.13% had PPH while in group B, 7.14 % of women had PPH. The need for additional uterotonics was found more in the control group as compared to the intervention group {14(16.67%) versus 3(3.85%), $p\text{-value} = 0.007$ }. In this study, no major complications were reported. This trial needs to be evaluated on large scale to conclude the efficacy and safety of IV TXA. (45)

Nguyen Tran et al (2022) conducted a rapid review aimed at examining the utility of TXA in lower maternity care hospitals with low-resource settings. It included various non-randomized and randomized research aiming at the feasibility, acceptability, and health system implications in low- and lower-middle-income countries. Out of 129 identified citations, 23 records were found to be eligible, including 20 TXA effectiveness studies, two economical evaluations, and one mortality model. On comparing TXA with placebo or other medications, TXA was found to be effective in preventing and treating PPH during vaginal and cesarean deliveries. TXA, if made readily available in home and clinic settings, can reduce mortality due to PPH. (43)

MATERIAL AND METHODS

Ethical consideration:

Before the commencement of data collection, the study protocol was reviewed and approved by Institutional Ethics Committee (AIIMS/IEC/2021/3326).

The study is also registered at the Clinical Trial Registry of India (CTRI/2021/02/040861).

Study setting: The study was conducted in the Department of Obstetrics and Gynecology, AIIMS Jodhpur.

Study design: Randomized controlled trial.

Study population: All pregnant females of age 18 years or more with singleton pregnancy at ≥ 34 weeks of gestation undergoing vaginal delivery.

Study Period: This study was conducted from March 2021 to August 2022.

INCLUSION CRITERIA:

- Age >18 years
- Gestational age ≥ 34 weeks
- Singleton pregnancy
- Vaginal delivery
- Available venous hemogram value in a week before vaginal delivery
- Signed informed consent to participate in the study

EXCLUSION CRITERIA:

- History of venous thrombosis: deep vein thrombosis, pulmonary embolism
- History of arterial thrombosis: myocardial infarction, stroke
- Any known cardiovascular, renal, or liver disorders
- Autoimmune disease e.g., secondary antiphospholipid antibody syndrome (APLA)

- Sickle cell disease
- Severe hemorrhagic disease e.g., Von Willibrand Disease.
- Obstetric complications- multiple gestation pregnancy, placenta previa, abruptio placenta, placenta accreta syndrome, eclampsia or HELLP syndrome (hemolysis elevated liver enzymes and low platelets) or in utero fetal death
- Administration of low-molecular-weight heparin (LMWH) or antiplatelet agents in the week before delivery
- History of epilepsy or seizure
- Active subarachnoid hemorrhage
- Color vision disturbances
- Known hypersensitivity to TXA
- Planned CS

RANDOMIZATION

All eligible subjects fulfilling the above-mentioned criteria and willing to participate in the study were approached for enrolment after informed written consent. The block randomization method in blocks of 10 was followed. Computer-generated random sequences were generated by online software (<https://www.sealedenvelope.com/simple-randomiser/v1/lists>) by an individual not involved in enrolment, treatment, and follow-up of the study. The random sequences were written on small slips and placed in serially numbered opaque sealed envelopes. The envelopes for vaginal delivery were kept in the labor room. Every time, the eligible patient gave consent for the study, one closed envelope containing a random sequence code was picked from a particular block by a person not involved in the study, just before the procedure. It was handed over to the investigator.

According to the code written in the envelope, patients were randomized to either of the following groups:

Group A- Intervention group

Group B- Control group

Group A- Intervention group:

In this group, the eligible patient received 1 gram (10 ml) of TXA intravenously within 2 minutes of vaginal delivery along with the routine AMTSL.



Figure 7: Tranexamic acid vial

Group B- Control group:

In this group, the eligible patient received 10 ml of normal saline (placebo) intravenously within 2 min of vaginal delivery along with the AMTSL.

METHODOLOGY

This is a single-center, randomized, placebo-controlled, double-blinded trial with two parallel arms conducted at the Department of Obstetrics and Gynecology, AIIMS, Jodhpur. Every time, an eligible patient gave consent for the study, one closed envelope containing a random sequence code from the particular block was picked by a person not involved in enrolment, treatment, and follow-up of the study, during the active phase of the second stage of labor. Eligible women were randomly assigned to two groups (group A and group B) in a 1:1 ratio to receive either a single dose of 1 g (10 ml) intravenous TXA or a placebo (10 ml normal saline) within 2 minutes of vaginal delivery along with all components of AMTSL.

TXA and placebo were prepared at a single site by a nursing assistant not involved in the study, each containing a 10 ml prefilled syringe with either 1 g of tranexamic acid or normal saline, depending on random sequence code. All the boxes and syringes were identical, and only the randomization number was differentiating the block. Neither the participants nor the investigators were aware of the trial-group assignments. The intravenous trial regimen (in a blinded vial) was administered slowly within 2 minutes of delivery of the baby by a nurse assistant, along with routine AMTSL.

All steps of AMTSL which are preventive administration of uterotonic agents immediately after delivery of the baby (10 units of intramuscular oxytocin), early/delayed cord clamping and cutting, controlled cord traction (CCT) for delivery of placenta and membranes, were followed as per guidelines.



Figure 8: Blood collection bag



Figure 9: Blood collection bag with Kelly's pad and the fluid collection pouch

Quantification of blood loss:

A pre-weighed and graduated blood collection bag was opened just after the delivery of the baby. This blood collection bag contains an under-buttock Kelly's pad (50*35cm) with a graduated fluid collection pouch (up to 2000 ml) as shown in figures 8, 9, 10 and 11. It was used to collect and objectively measure postpartum blood loss (without placenta and membranes) during 3rd stage of labor (from delivery of baby to delivery of placenta and membranes) and 4th stage of labor (from delivery of placenta till 1 hour postpartum). The Bag was kept in place until the birth attendant consider that the bleeding had stopped.



Figure 10: Graduations of blood collection bag



Figure 11: Blood collection bag with Kelly's pad



Figure 12: Comparison of pre-weighed gauze and mops v/s weighing blood-soaked mops and gauzes



Figure 13: Weighing blood collection bag with blood-soaked Kelly's pad

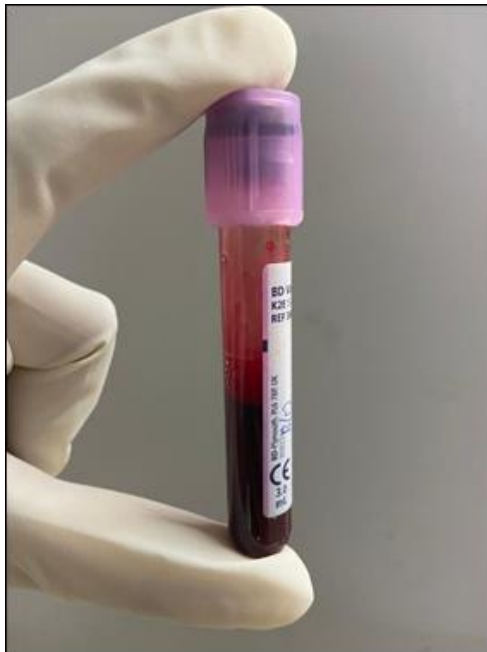
Blood loss after vaginal delivery was calculated by weighing the blood collection bag and blood-soaked swabs and pads which were utilized during episiotomy closure (also called gravimetric technique; $1 \text{ mL} = 1 \text{ gr}/1.06$) as shown in figures 12 and 13. Only the pre-weighed swabs and pads were used.

Comparison of peripartum changes in laboratory indicators:

Within 12-24 hours following delivery, blood samples were sent which included a complete hemogram, liver function test, kidney function test, PT/INR, and APTT. For laboratory indicators, predelivery reference examination was the most recent complete hemogram within 1 week before delivery. The peripartum changes in hemoglobin and hematocrit in the intervention group and placebo group were compared along with post-delivery levels of PT/INR, APTT, liver function test (SGOT/SGPT/total bilirubin), and renal function test (urea/creatinine) between the intervention group and placebo group. Hematocrit was evaluated using Mindray BC-6200 Automatic Hematology Analyzer as shown in figures 15 and 16.



Figure 14: Blood samples



**Figure 15: Around 2ml blood collected
6200 in an EDTA vial**



**Figure 16: Mindray BC-
Automatic Hematology Analyzer**

Blood loss in the range of PPH after 4th stage of labor till 24 hours post-delivery was assessed by the primary care provider. Blood loss in the range of PPH was managed as per institutional guidelines and the need for transfusion of blood and its components were reported.

The occurrence of secondary PPH (≥ 24 hours to 6 weeks postpartum) was considered and reported by means of a telephone interview at 6 weeks if the patient or primary care provider reported the following within 6 weeks postpartum:

- Excessive blood loss after 24 hours of delivery,
- Additional uterotonics were required,
- Patient seeks medical intervention or
- Re-admission after discharge due to blood loss within 6 weeks postpartum.

The occurrence of potential immediate adverse effects of tranexamic acid included:

- Nausea
- Vomiting
- Photopsia
- Dizziness

and severe adverse effects during the hospital stay and up to 12 weeks postpartum included

- Thromboembolic event (deep vein thrombosis/ pulmonary embolism/Ovarian vein embolism/ Superficial vein thrombosis/retinal vascular occlusion/ myocardial infarction/stroke)
- Seizure
- Renal failure

Adverse events were assessed by the medical team in all the women until hospital discharge and by means of a telephone interview of each woman at 6 weeks and 3 months postpartum. If any woman was not reached, then at least 10 calls at different hours over a period of 1 week were made to minimize loss to follow up.

In cases of secondary PPH and severe adverse effects after discharge, data were collected from medical files shared by the woman herself. Blinding was continued till the end of patient recruitment and follow-up of the last patient.

SAMPLE SIZE CALCULATION

Gungorduk K et al (34) have found that the incidence of PPH ≥ 500 ml was 1.8% in TXA group as compared to 6.8% in control group. Using this for calculations, we estimate a sample size of 325 patients per group at 95% CI, 80% power and 10% contingency.

$$n_1 = \frac{[Z_{\frac{\alpha}{2}} \sqrt{(r+1)p\bar{q}} + Z_{1-\beta} \sqrt{rp_1q_1 + p_2q_2}]^2}{r(p_1 - p_2)^2}$$

$$n_{(cc)} = \frac{n_1}{4} \left[1 + \sqrt{1 + \frac{2(r+1)}{n_1 r |p_2 - p_1|}} \right]$$

$$n_2 = r n_{cc}$$

Where,

n_1 : Sample size in Exposed / Intervention group

$n_{(cc)}$: Sample size with continuity correction

n_2 : Sample size in Unexposed / Control group

Z_2 : Standard Normal Deviate for two tailed tests based on alpha level (relates to the confidence interval)

Z : Standard Normal Deviate for one tailed test based on beta level (relates to the power)

r : ratio of unexposed to exposed

p_1 : Proportion of Exposed with disease

q_1 : $1 - p_1$

p_2 : Proportion of Unexposed with disease

q_2 : $1 - p_2$

p : $p_1 + r$

p_2 : $r + 1$

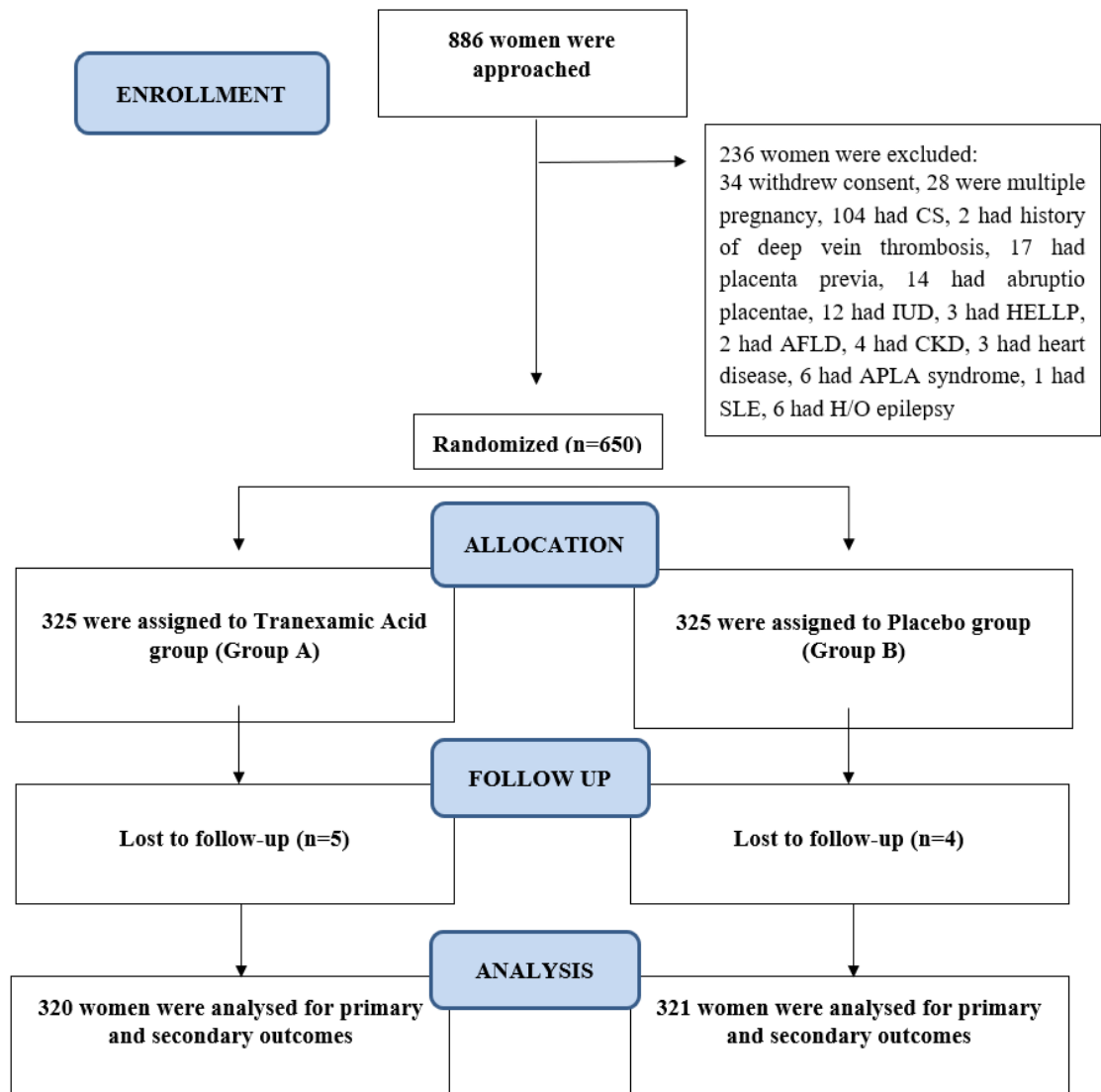
q : $1 - p$

STATISTICAL ANALYSIS:

Data was entered in Microsoft Excel Sheet. All the analysis was performed by using Statistical package for social sciences (SPSS) software 21. Bell shaped curve and One-sample Kolmogorov- Smirnov test was used to check normal distribution of continuous data. Student t test was used to analyze normally distributed and Mann Whitney U test was used for non- normally distributed continuous data. For categorical variables, chi-square test was used at a two-sided significant level of 0.05 for testing the differences between two groups.

OBSERVATIONS AND RESULTS

During the study period from March 2021 to August 2022, 886 pregnant women were approached out of which a total of 650 cases were enrolled in the study who met the inclusion criteria and 236 were excluded. They were randomized into group A and group B. 325 pregnant women were allotted group A out of which 1 did not receive the assigned treatment. In group B, 325 pregnant women received the assigned treatment. In group A, 5 patients lost to follow-up for secondary outcome analysis out of which 3 patients did not receive the follow-up calls and 1 had missing blood parameter reports. In group B, 4 patients lost to follow-up for secondary outcome analysis out of which 2 patients did not receive the follow up calls and 2 had missing blood parameter reports. Total of 320 participants in group A and 321 in group B were analyzed. The flow chart of the study participants is as follows:



**Figure 17: CONSORT
flow diagram**

BASELINE MATERNAL CHARACTERISTICS:

Table 1: Data distribution of baseline maternal characteristics

	Group A(TXA) (n = 320)	Group B (n = 321)	p value
Age[^]	26.28 ± 3.99	25.6 ± 3.65	0.264
Parity of Patients[#]			
Primiparous	162(50.6%)	145(45.2%)	0.167
Multiparous	158(49.4%)	176 (54.8%)	
Period of Gestation (weeks) [#]			
<37 weeks	23(7.2%)	19(5.9%)	0.516
≥37 weeks	297(92.8%)	302(94.1%)	
Precipitate Labor[#]	0(0%)	3(0.5%)	0.084
Augmented Labor[#]	62(19.4%)	50(15.6%)	0.205
Labor Induction[#]	68(21.3%)	61(19%)	0.478
Pre-eclampsia[#]	5(1.6%)	6(1.9%)	0.765
Scarred Uterus[#]	7(2.2%)	10(3.1%)	0.465
Large Fetus[#]	1(0.3%)	2(0.6%)	0.565
Hydramnios[#]	2(0.6%)	0(0%)	0.156
Fibroid[#]	1(0.3%)	0(0%)	0.316
Prolong Labor[#]	2(0.6%)	2(0.6%)	0.998
Anemia[#]	27(8.5%)	17(5.3%)	0.113
History Of PPH[#]	1(0.3%)	0(0%)	0.316

Chi Square test

[^]Data is in Mean ± Standard Deviation (SD)

[#]Data is in n (%)

BASELINE MATERNAL CHARACTERISTICS:

1. Age:

Age was normally distributed in both groups as shown in figures 18 and 19 respectively.

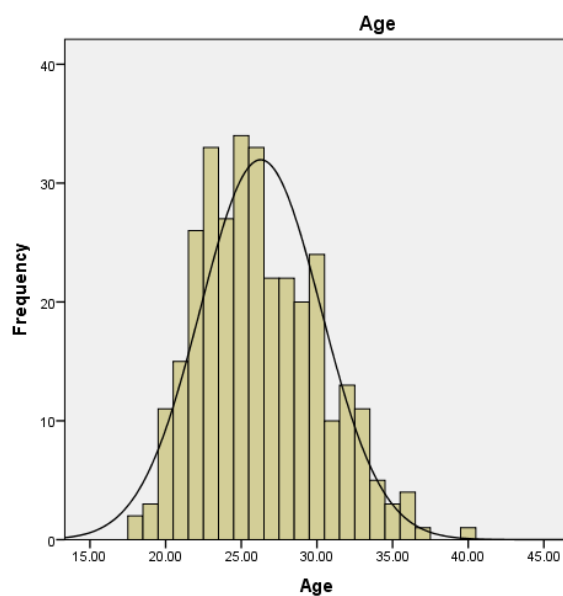


Figure 18: Age distribution in group A

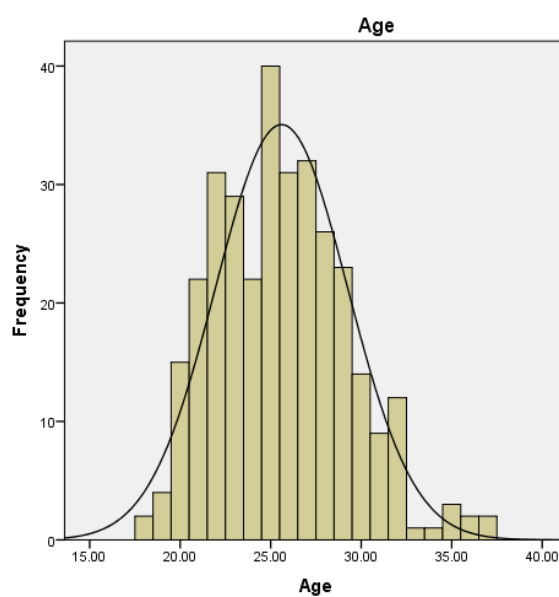


Figure 19: Age distribution in group B

Table 2: Age distribution and its comparison in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Age	<=20	16	5.0%	21	6.5%	37	5.8%	0.264
	21-25	135	42.2%	144	44.9%	279	43.5%	
	26-30	121	37.8%	126	39.3%	247	38.5%	
	31-35	42	13.1%	26	8.1%	68	10.6%	
	36-40	6	1.9%	4	1.2%	10	1.6%	
	Total	320	100.0%	321	100.0%	641	100.0%	
	Mean	26.28		25.60		25.94		
	SD	3.99		3.65		3.84		

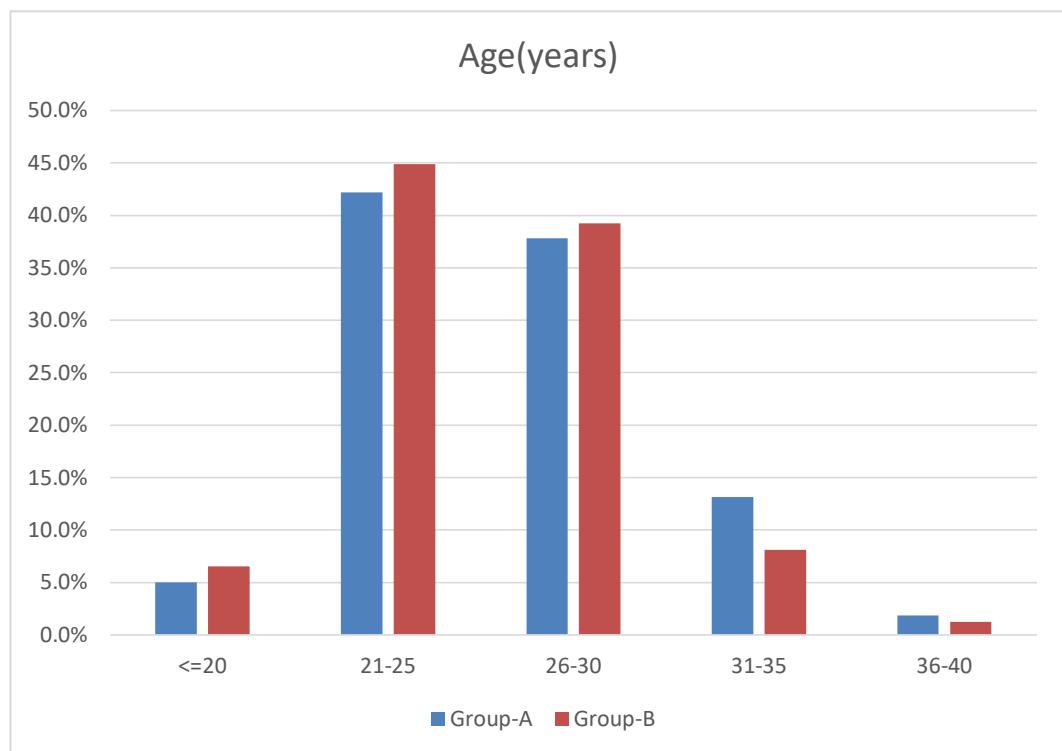


Figure 20: Comparison of age distribution in both groups

Table 2 shows that the mean age was 26.28 years with SD of 3.99 years in group A, and the mean age was 25.60 years with SD of 3.84 years in group B. Age in both groups was compared by Chi Square test ($p = 0.264$) and was found to be comparable.

2. Parity of patients:

Table 3 and figure 21 show that in group A, the majority of pregnant women were primigravida (50.6%) while in group B, the majority of pregnant women were multigravida (54.8%). Both the groups were comparable to each other in terms of parity ($p = 0.167$).

Table 3: Comparison of parity in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n %	n	n %	N	N%	
Obstetric history	Primi gravida	162	50.6%	145	45.2%	307	47.9%	0.167
	Multi gravida	158	49.4%	176	54.8%	334	52.1%	
	Total	320	100.0%	321	100.0%	641	100.0%	-

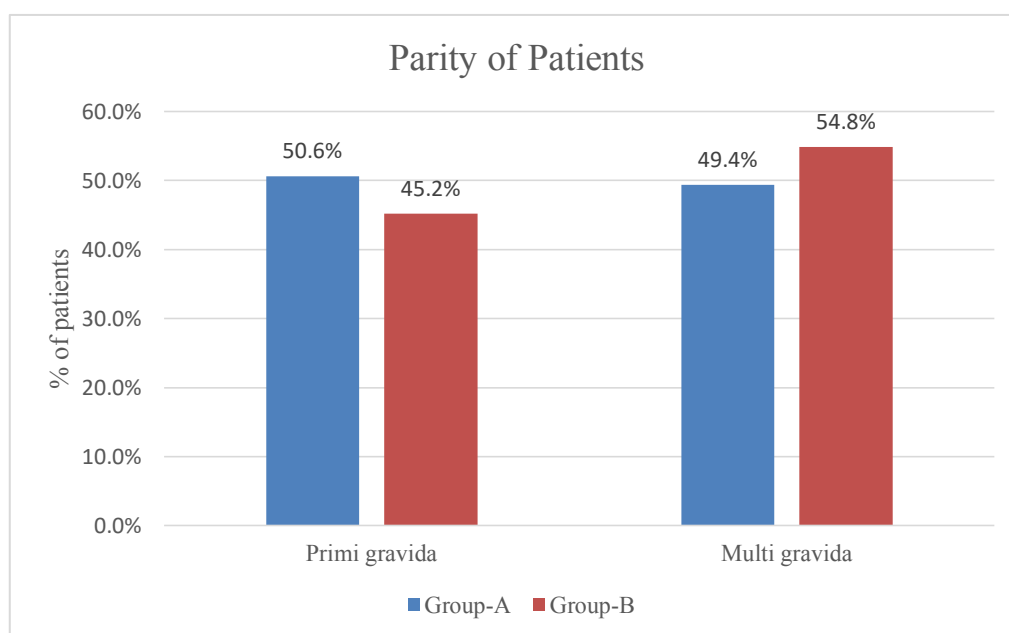


Figure 21: Comparison of parity in both Groups

3. Period of gestation (POG) at delivery:

Table 4 and figure 22 show that in group A, 92.8% of pregnant women had POG ≥ 37 weeks whereas in group B, 94.1% of pregnant women had POG ≥ 37 weeks. Both the groups were comparable to each other in terms of gestational age ($p = 0.526$).

Table 4: Comparison of period of gestation (POG) in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
POG	<37 weeks	23	7.2%	19	5.9%	42	6.6%	0.516
	>=37 weeks	297	92.8%	302	94.1%	599	93.4%	
	Total	320	100.0%	321	100.0%	641	100.0%	

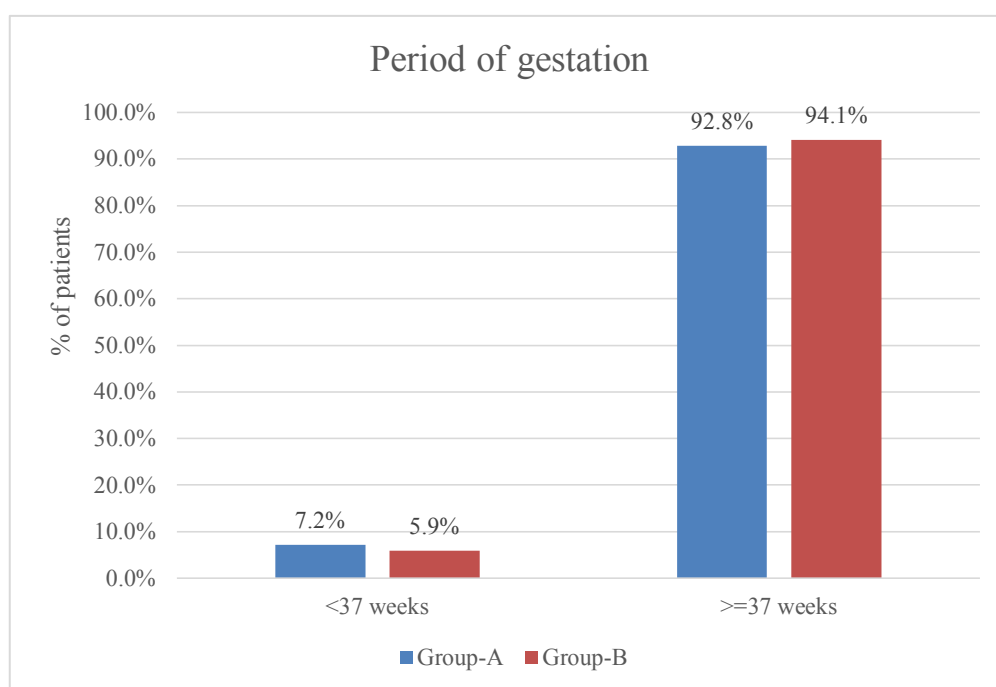


Figure 22: Comparison of POG in both groups

4. Risk Factors for PPH:

Table 5 and figure 23 show that following risk factors for PPH were comparable in both the groups (p value was >0.05).

Table 5: Comparison of risk factors in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Precipitate labor	Yes	0	0.0%	3	.9%	3	.5%	0.084
	No	319	100.0%	318	99.1%	637	99.5%	
Augmented labor	Yes	62	19.4%	50	15.6%	112	17.5%	0.205
	No	258	80.6%	271	84.4%	529	82.5%	
Labor Induction	Yes	68	21.3%	61	19.0%	129	20.1%	0.478
	No	252	78.8%	260	81.0%	512	79.9%	
Preeclampsia	Yes	5	1.6%	6	1.9%	11	1.7%	0.765
	No	315	98.4%	315	98.1%	630	98.3%	
Scarred Uterus	Yes	7	2.2%	10	3.1%	17	2.7%	0.465
	No	313	97.8%	311	96.9%	624	97.3%	
Large Fetus	Yes	1	.3%	2	.6%	3	.5%	0.565
	No	319	99.7%	319	99.4%	638	99.5%	
Hydramnios	Yes	2	.6%	0	0.0%	2	.3%	0.156
	No	318	99.4%	321	100.0%	639	99.7%	
Fibroid	Yes	1	.3%	0	0.0%	1	.2%	0.316
	No	319	99.7%	321	100.0%	640	99.8%	
Prolong labor	Yes	2	.6%	2	.6%	4	.6%	0.998
	No	318	99.4%	319	99.4%	637	99.4%	
Anaemia	Yes	27	8.5%	17	5.3%	44	6.9%	0.113
	No	292	91.5%	304	94.7%	596	93.1%	
History of PPH	Yes	1	.3%	0	0.0%	1	.2%	0.316
	No	319	99.7%	321	100.0%	640	99.8%	
	Total	320	100.0%	321	100.0%	641	100.0%	

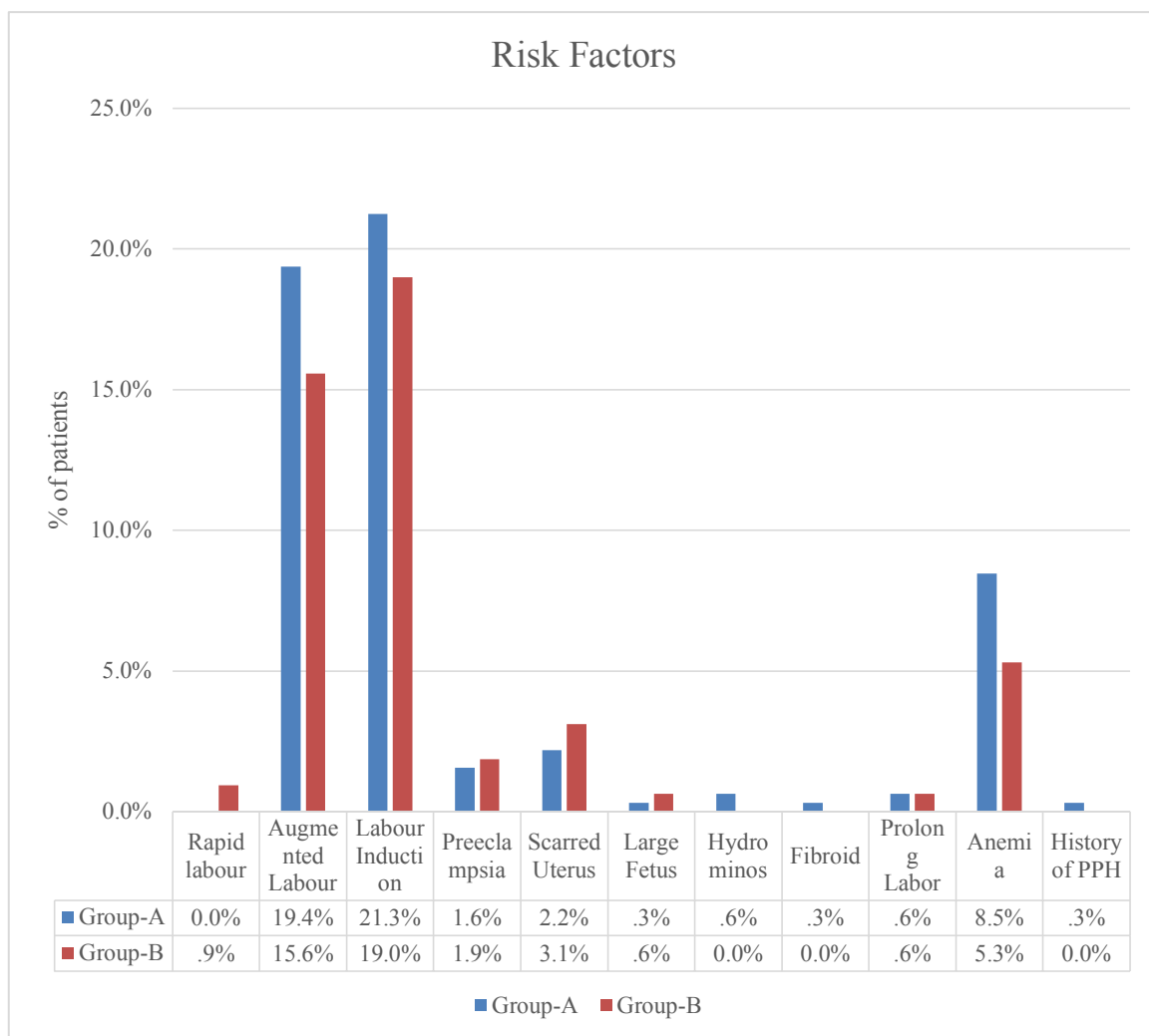


Figure 23: Comparison of risk factors of PPH in both groups

INTRAPARTUM CHARACTERISTICS OF THIRD STAGE OF LABOR

Table 6: Comparison of intrapartum characteristics of third stage of labor in both groups

	Group A (n = 320)	Group B (n = 321)	p value
Episiotomy[#]	231(72.2%)	243(75.7%)	0.311
Operative Vaginal Delivery[#]	17(5.3%)	15(4.7%)	0.710
Type of Operative Vaginal delivery[#]			0.521
Forceps	0(0%)	1(0.3%)	
Vacuum	17(5.3%)	14(4.4%)	
Perineal Tear[#]	34(10.6%)	31(9.7%)	0.765
Type of Perineal Tear[#]			0.75
1st Degree	28(8.8%)	25(7.8%)	
2nd Degree	3(0.9%)	3(0.9%)	
3rd Degree	1(0.3%)	0(0%)	
4th Degree	0(0%)	0(0%)	
Other Tear[#]			0.132
Cervical tear	3(0.9%)	1(0.3%)	
Vaginal Wall tear	3(0.9%)	0(0%)	

Chi Square test

[#]Data is in n (%)

INTRAPARTUM CHARACTERISTICS OF THE PARTICIPANTS DURING THIRD STAGE OF LABOR

1. Episiotomy:

Table 7 and figure 24 show that in group A, 72.2% of pregnant women had episiotomy while in group B, 73.9% of pregnant women had episiotomy.

On applying Chi Square test, both groups were comparable in terms of episiotomy rates ($p = 0.311$).

Table 7: Comparison of episiotomy rates in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Episiotomy	Yes	231	72.2%	243	75.7%	474	73.9%	0.311
	No	89	27.8%	78	24.3%	167	26.1%	
	Total	320	100.0%	321	100.0%	641	100.0%	

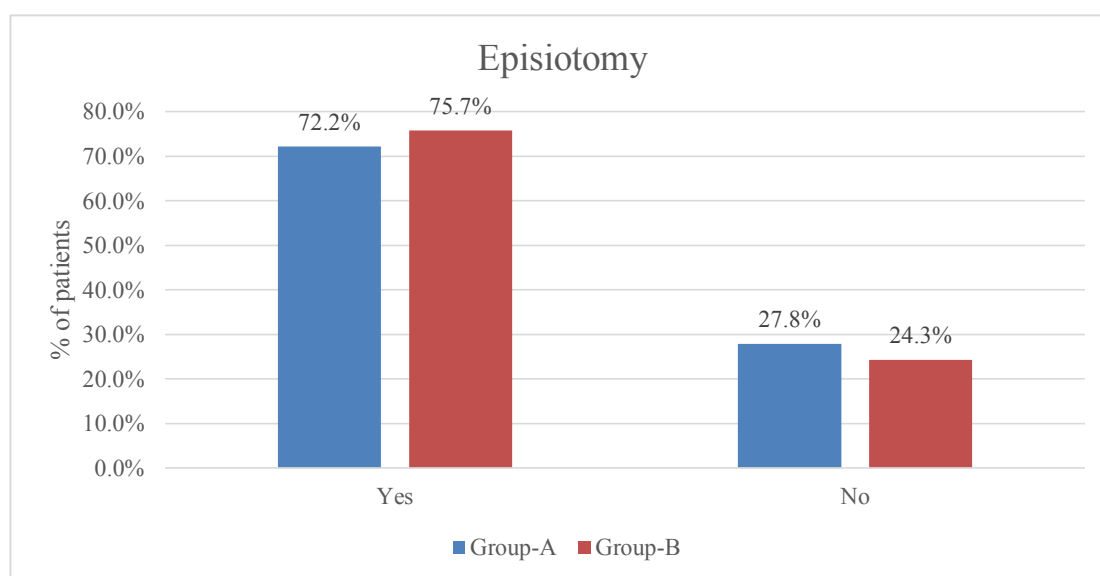


Figure 24: Comparison of episiotomy rates in both groups

2. Operative Vaginal delivery:

Table 8 and figure 25 show that in group A and B, 5.3% and 4.7% of pregnant women had operative vaginal delivery respectively.

Operative vaginal delivery rates were found to be comparable in both groups ($p = 0.710$).

Table 8: Comparison of operative vaginal delivery rates in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Operative Vaginal Delivery	Yes	17	5.3%	15	4.7%	32	5.0%	0.710
	No	303	94.7%	306	95.3%	609	95.0%	
	Total	320	100.0%	321	100.0%	641	100.0%	

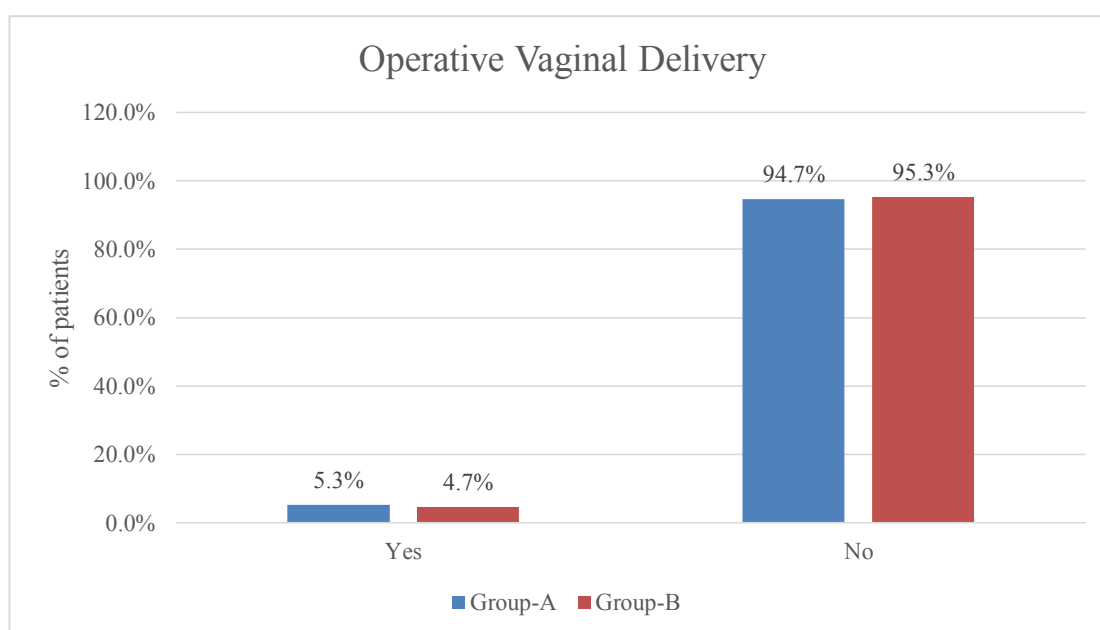


Figure 25: Comparison Of operative vaginal delivery rates in both groups

3. Types of Operative Vaginal Delivery:

Table 9 and figure 26 shows that in group A, all operative vaginal deliveries were vacuum assisted while in group B, out of 4.7% operative vaginal deliveries, 4.4% of pregnant women had vacuum assisted vaginal delivery. Hence, in terms of type of operative delivery, both groups were comparable ($p= 0.521$).

Table 9: Comparison of type of operative vaginal delivery in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Type of Operative Delivery	Forceps	0	0.0%	1	0.3%	1	0.2%	0.521
	Vacuum	17	5.3%	14	4.4%	31	4.8%	
	None	303	94.7%	306	95.3%	609	95.0%	
	Total	320	100.0%	321	100.0%	641	100.0%	

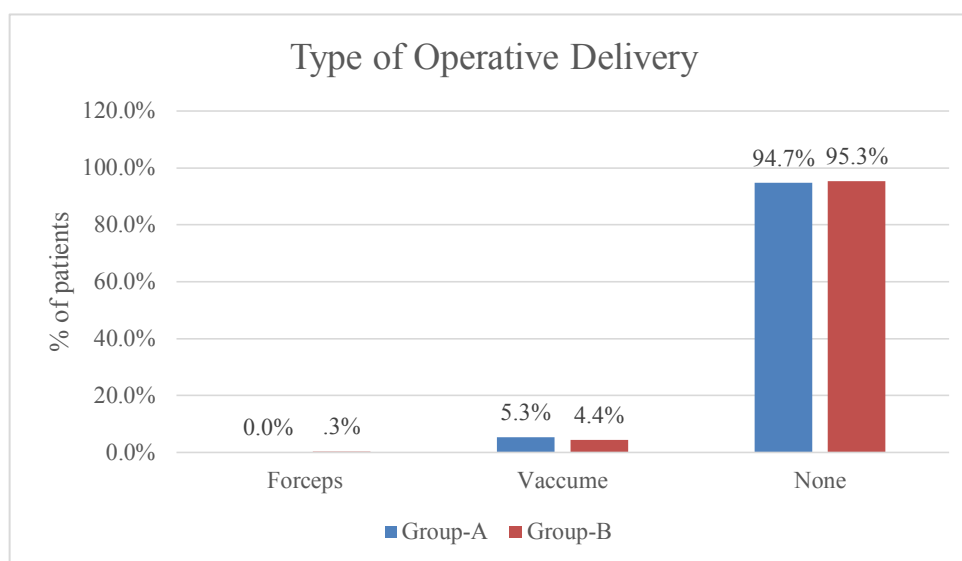


Figure 26: Comparison of type of operative vaginal delivery in both groups

4. Perineal Tear:

Table 10 and Figure 27 show that in group A, 10.6% of pregnant women had perineal tear while in group B; 9.7% of pregnant women had perineal tear.

Hence in terms of perineal tear rates, both groups were comparable ($p = 0.685$).

Table 10: Comparison of perineal tear in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n %	n	n %	N	N%	
Perineal Tear	Yes	34	10.6%	31	9.7%	65	10.1%	0.685
	No	286	89.4%	290	90.3%	576	89.9%	
	Total	320	100.0%	321	100.0%	641	100.0%	-

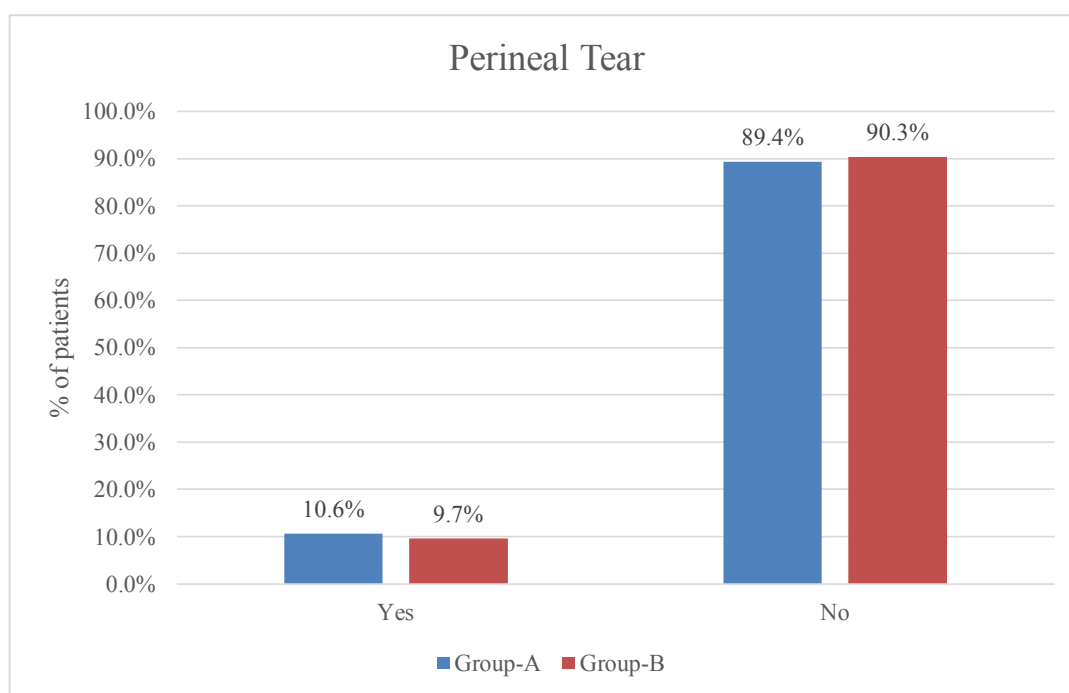


Figure 27: Comparison of perineal tear in both groups

5. Types Of Perineal Tear:

Table 11 and figure 28 show that in group A, out of 10.6 % perineal tears 8.8% of pregnant women had 1st degree perineal tear; 0.9% of pregnant women had 2nd degree perineal tear and 0.3% of pregnant women had 3rd degree perineal tear.

In group B, out of 9.7% perineal tears 8.8% of pregnant women had 1st degree perineal Tear and 0.9% of pregnant women had 2nd degree perineal tear while none of patients had a 3rd degree perineal tear.

Both groups were comparable in terms of type of perineal tear ($p = > 0.05$).

Table 11: Comparison of types of perineal tear in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Type of Perineal Tear	1st degree	28	8.8%	25	7.8%	53	8.3%	0.75
	2nd degree	3	0.9%	3	0.9%	6	.9%	
	3rd degree	1	0.3%	0	0.0%	1	.2%	
	None	288	90.0%	293	91.3%	581	90.6%	
	Total	320	100.0%	321	100.0%	641	100.0%	

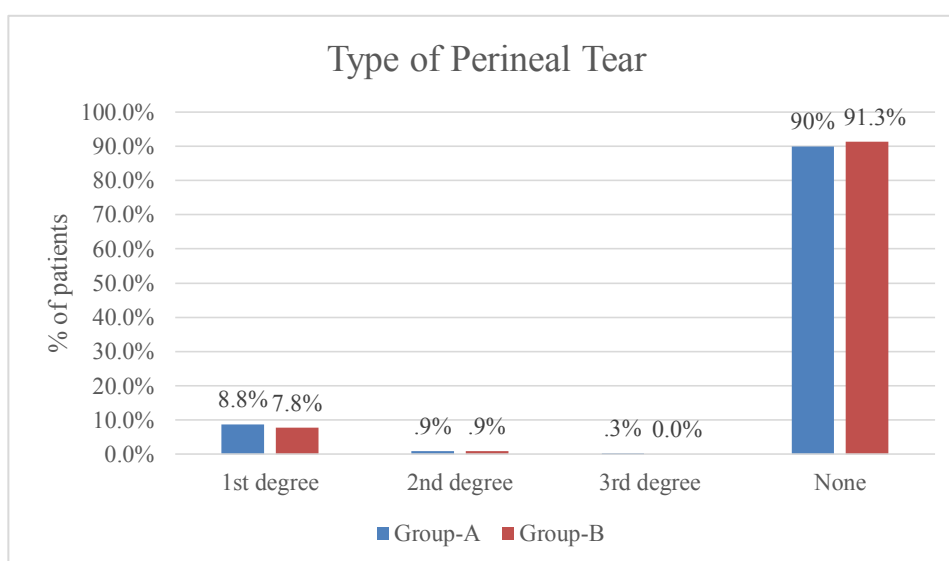


Figure 28: Comparison of types of perineal tear in both groups

6. Other Tears:

Table 12 and figure 29 show that in group A, 0.9% of pregnant women had cervical tear and 0.9% had vaginal wall tear. In group B, 0.3% of pregnant women had cervical tear while none had any vaginal tear.

On applying Chi Square test, both groups were comparable ($p = 0.132$).

Table 12: Comparison of other tears in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Other Tear	Cervical Tear	3	.9%	1	.3%	4	.6%	0.132
	Vaginal Wall Tear	3	.9%	0	0.0%	3	.5%	

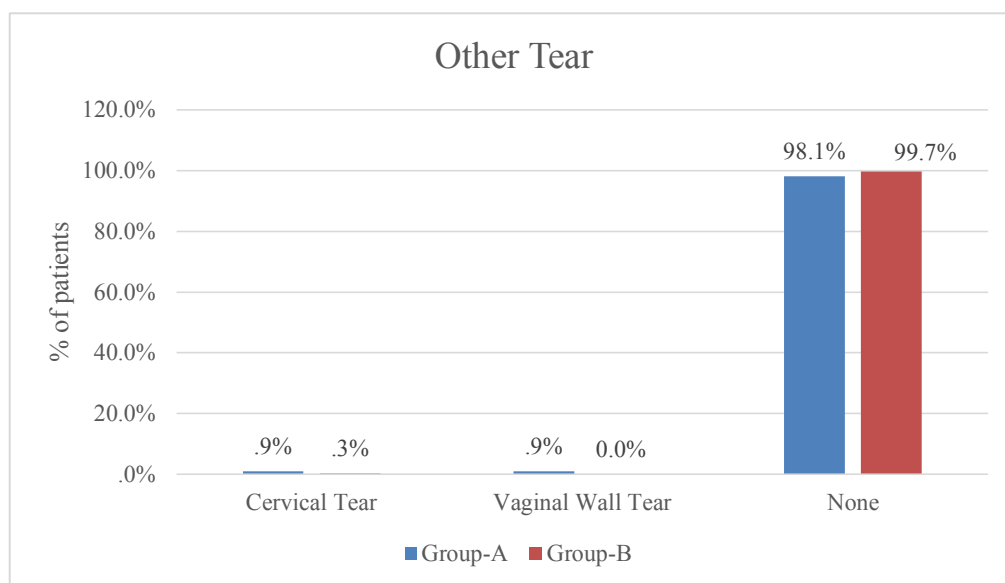


Figure 29: Comparison of other tears in both groups

STUDY OUTCOMES

Table 13: Comparison of composite study outcomes in both groups

	Group A (n = 320)	Group B (n = 321)	p-value
PRIMARY OUTCOME			
Mean Blood Loss[^]	378.5 ± 261.2	383 ± 258.9	0.939
SECONDARY OUTCOME			
Incidence of Primary PPH[#]	51(15.9%)	49(15.3%)	0.814
Comparison OF PPH and severe PPH[#]			0.906
PPH	38(74.5%)	36(73.5%)	
Severe PPH	13(25.5%)	13(26.5%)	
Type Of PPH[#]			
Atonic PPH	45(88.2%)	44(89.8%)	0.803
Traumatic PPH	8(15.7%)	7(14.3%)	0.845
Secondary PPH[#]	2(0.6%)	0(0%)	0.156
Adverse effects of TXA[#]			
a) Immediate			
Nausea	8(2.5%)	6(1.9%)	0.585
Vomiting	3(0.9%)	1(0.3%)	0.314
Dizziness	10(3.1%)	9(2.8%)	0.810
b) Long Term	0(0%)	0(0%)	
Need For Additional Uterotonics[#]	56(17.5%)	55(17.1%)	0.903
Need for Blood Transfusion[#]	2(0.6%)	3(0.9%)	0.656

[^]Data is in Mean ± Standard deviation

[#]Data is in n (%)

STUDY OUTCOMES

Primary Outcome

- a. Effect of intravenous TXA (1 g) in reducing blood loss during 3rd and 4th stage of labor following a vaginal delivery in addition to AMTSL:**

Table 14 and figure 30 show that in group A, the mean blood loss was 378.5 ml with SD of 261.2 ml and in group B, the mean blood loss was 383ml with SD of 258.9 ml. The mean blood loss was comparable in both the groups ($p = 0.939$).

Table 14: Comparison of mean blood loss in both groups

	Groups						Mann-Whitney U (Z)	p-value
	Group-A (N=320)			Group-B (N=321)				
	Mean	SD	Median	Mean	SD	Median		
Blood Loss(ml)	378.5	261.2	341.0	383.0	258.9	325.0	0.077	0.939

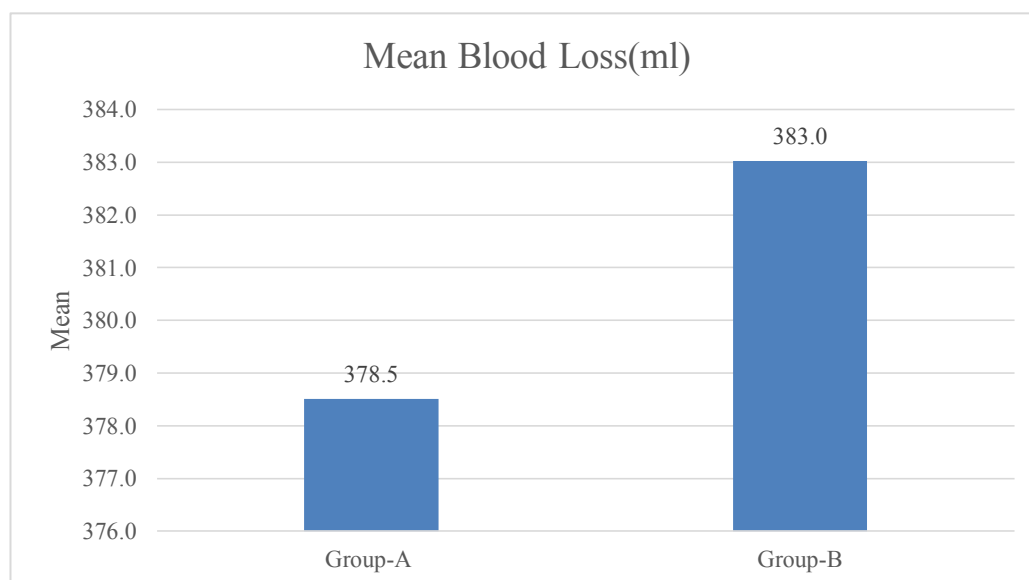


Figure 30: Comparison of mean blood loss in both groups

Secondary Outcome

A. Comparison of incidence of PPH (≥ 500 ml) and severe PPH (≥ 1000 ml) within 24 hours of delivery and within 6 weeks postpartum (secondary PPH) in intervention and placebo group

a) Incidence Of Primary PPH (Blood Loss ≥ 500 ml):

Table 15 and figure 31 show that in group A, 15.9 % of women (n= 51) had PPH and in group B, 15.3 % of women (n =49) had PPH. Thus, in terms of incidence of primary PPH both groups were comparable ($p > 0.05$).

Table 15: Comparison of incidence of PPH in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
PPH	Yes	51	15.9%	49	15.3%	100	15.6%	.814
	No	269	84.1%	272	84.7%	541	84.4%	
	Total	320	100.0%	321	100.0%	641	100.0%	

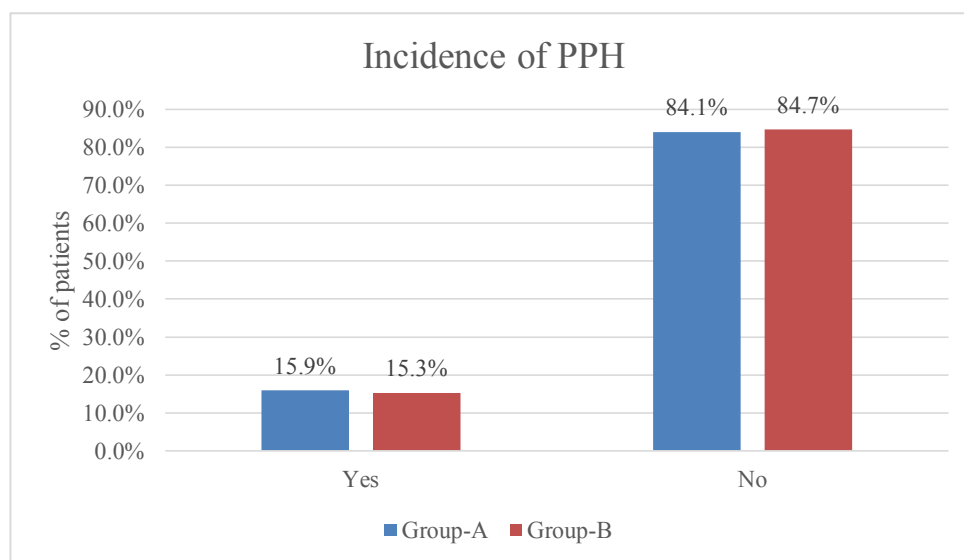


Figure 31: Comparison of incidence of primary PPH in both groups

b) Comparison of incidence of severe PPH (blood loss >1000 ml):

Table 16 and figure 32 show that among 51 pregnant women who had PPH, 13 women (25.5 %) had severe PPH in group A while in group B, 13 (26.5%) out of 49 women had severe PPH.

Both groups were comparable in terms of incidence of severe PPH ($p = 0.906$).

Table 16: Comparison of PPH and severe PPH in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Primary Outcome: PPH	PPH (Blood Loss: 500-1000ml)	38	74.5%	36	73.5%	74	74.0%	0.906
	Severe PPH (Blood Loss >1000ml)	13	25.5%	13	26.5%	26	26.0%	
	Total	51	100.0%	49	100.0%	100	100.0%	

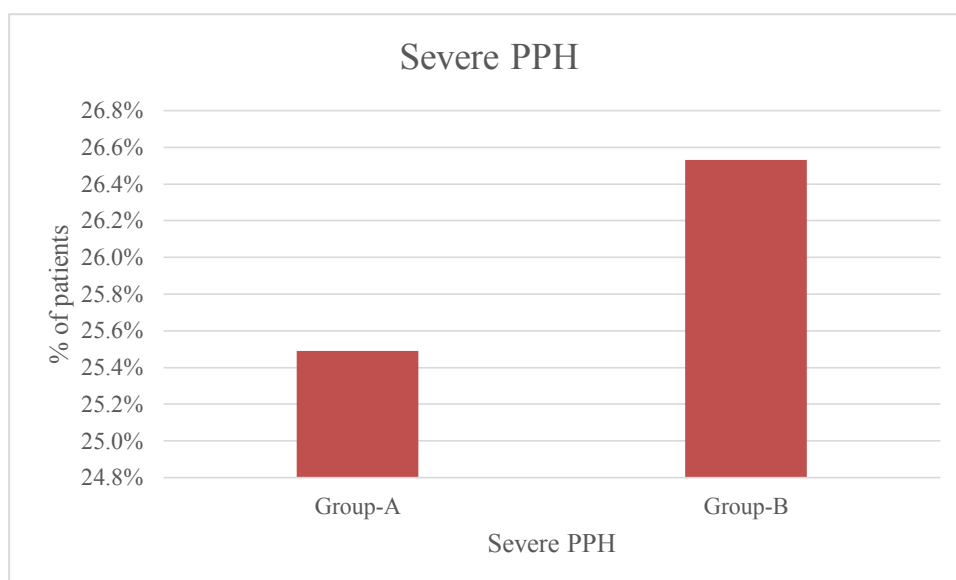


Figure 32: Comparison of incidence of severe PPH in both groups

c) Type of PPH:

I. Atonic PPH:

Table 17 and figure 33 show that in group A, out of 51 pregnant women who developed PPH, 88.2 % had atonic PPH. In group B, out of 44 pregnant women who developed PPH, 89% had atonic PPH.

Thus, in terms of incidence of atonic PPH, both groups were comparable ($p = 0.803$).

Table 17: Comparison of atonic PPH in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Atonic PPH	Yes	45	88.2%	44	89.8%	89	89.0%	0.803
	No	6	11.8%	5	10.2%	11	11.0%	
	Total	51	100.0%	49	100.0%	100	100.0%	

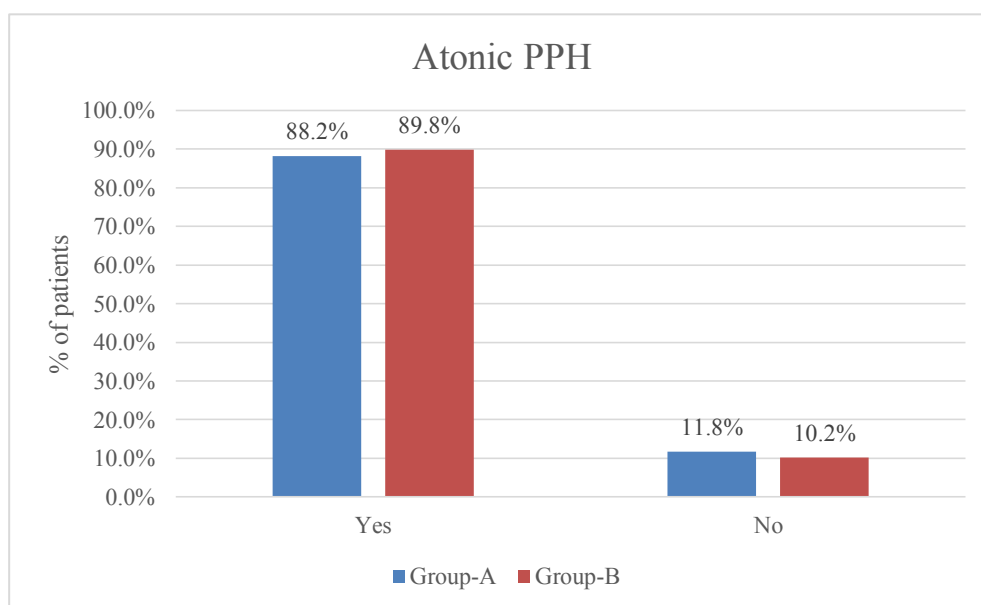


Figure 33: Comparison atonic PPH in both groups

II. Traumatic PPH

Table 18 and figure 34 show that in group A, out of 51 pregnant women who developed PPH, 15.7 % had traumatic PPH. In group B, out of total pregnant women who developed PPH, 14.3% had traumatic PPH. On applying Chi Square test, both groups were comparable in terms of incidence of traumatic PPH ($p=0.845$).

Table 18: Comparison of traumatic PPH in both groups

		Groups						p-value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Traumatic PPH	Yes	8	15.7%	7	14.3%	15	15.0%	0.845
	No	43	84.3%	42	85.7%	85	85.0%	
	Total	51	100.0%	49	100.0%	100	100.0%	

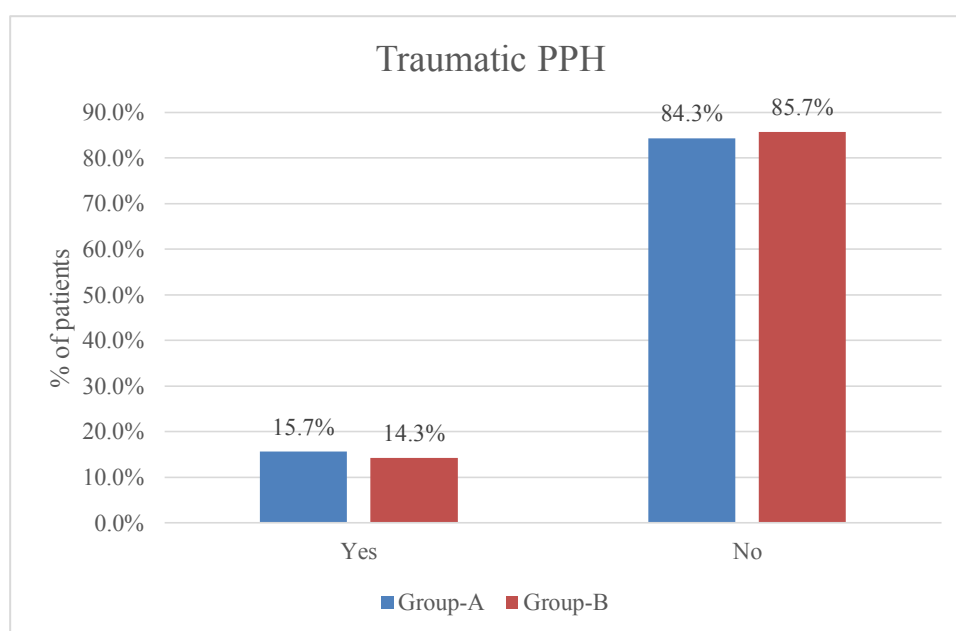


Figure 34: Comparison of traumatic PPH in both groups

d) Comparison Of Secondary PPH:

Table 19 shows that in group A, 0.6% of patients reported secondary PPH and were medically managed. In group B, no secondary PPH was reported.

On applying Chi Square test, both groups were comparable as p value was 0.156.

Table 19: Comparison of Secondary PPH in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Secondary PPH	Exc Blood loss >24HR	0	0.0%	0	0.0%	0	0.0%	0.156
	Seek Medical Intervention	2	0.6%	0	0.0%	2	0.3%	
	Readmission	0	0.0%	0	0.0%	0	0.0%	
	None	318	99.4%	321	100.0%	639	99.7%	
	Total	320	100.0%	321	100.0%	641	100.0%	

B. The potential adverse effects of TXA after vaginal delivery:

a) Immediate Side Effects:

Table 20 and figure 35 show that most common symptom reported was dizziness which was found in 3.1 % and 2.8% of women in group A and group B respectively.

In group A, 2.5 % of women had nausea and 0.9 % had vomiting while none had photopsia.

In group B, 1.9% of women had nausea, 0.3% had vomiting and none had photopsia.

Thus, in terms of side effects, both groups were comparable (p value = >0.05).

Table 20: Comparison of immediate side effects in both groups

		Groups						p- value
		Group-A		Group-B		Total		
		n	n%	n	n %	N	N%	
Nausea	Yes	8	2.5%	6	1.9%	14	2.2%	0.585
	No	312	97.5%	315	98.1%	627	97.8%	
Vomiting	Yes	3	0.9%	1	0.3%	4	0.6%	0.314
	No	317	99.1%	320	99.7%	637	99.4%	
Dizziness	Yes	10	3.1%	9	2.8%	19	3.0%	0.810
	No	310	96.9%	312	97.2%	622	97.0%	
Photopsia	Yes	0	0%	0	0%	0	0%	
	No	320	100%	321	100%	641	100%	
	Total	320	100.0%	321	100.0%	641	100.0%	

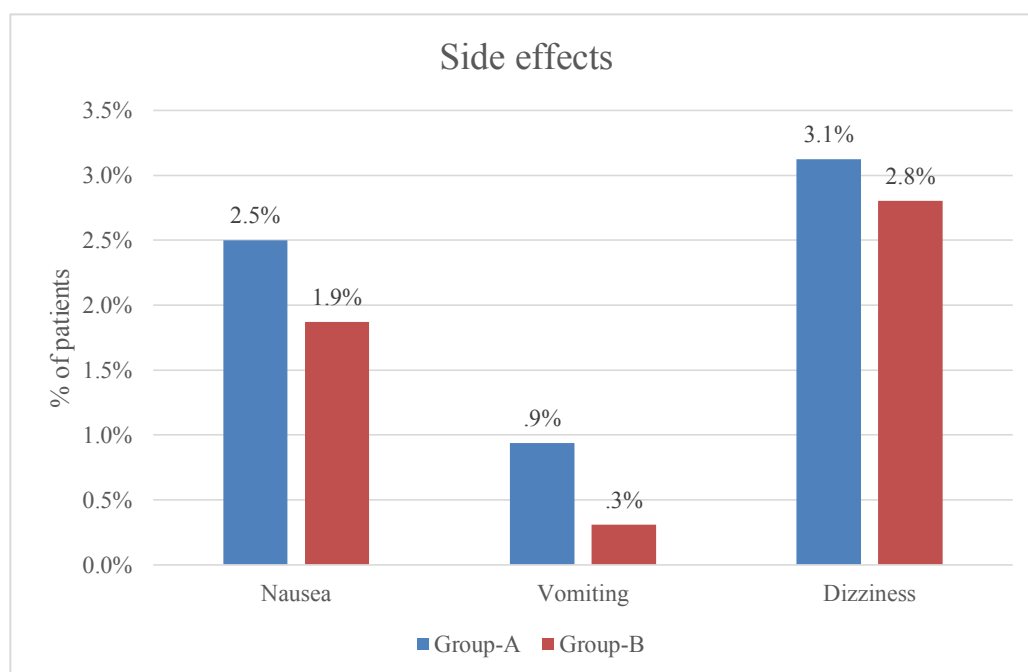


Figure 35: Comparison of immediate side effects in both groups

b) Long Term Side Effects:

On postpartum follow up three months after delivery, no thromboembolic events, seizure, renal failure, and need for anticoagulant was reported in both the groups.

C. Comparison of peripartum changes in Hemogram (hemoglobin, hematocrit), PT/INR, APTT, liver function tests and renal function tests in both groups.

- Comparison of fall in hemoglobin and hematocrit:**

Data distribution of fall in hemoglobin and hematocrit in both groups shown in figure 36-39.

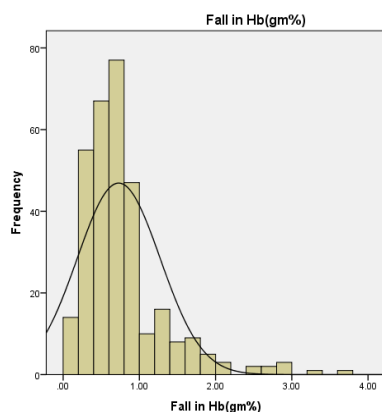


Figure 36: Data distribution of fall in hemoglobin in group A

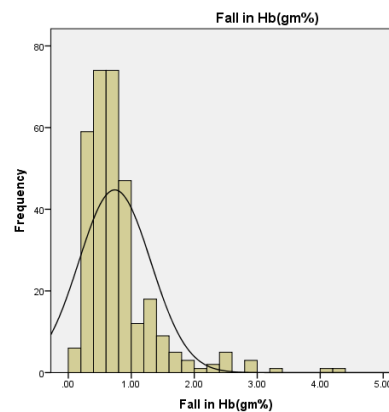


Figure 37: Data distribution of fall in hemoglobin in group B

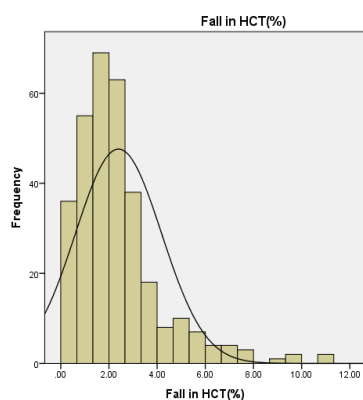


Figure 38: Data distribution of fall in hematocrit in group A

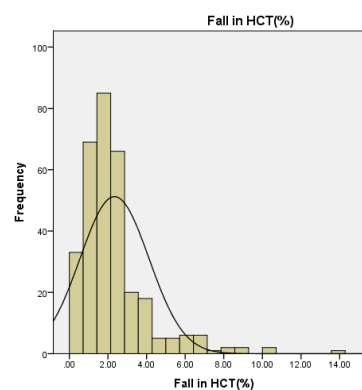


Figure 39: Data distribution of fall in hematocrit in group B

Table 21 and figure 40 show that in group A, the median fall in hemoglobin within 12-24 hour following delivery was 0.60 g% with interquartile range (IQR) 0.4-0.9 g % and in group B, the median fall in hemoglobin was 0.6 g% with IQR 0.4-0.8 g %. Thus, fall in hemoglobin in both groups was comparable (p = 0.955).

Table 21: Comparison of fall in hemoglobin and hematocrit in both groups

	Groups									
	Group-A				Group-B					
	n	Median	Quartile-I	Quartile-III	n	Median	Quartile-I	Quartile-III		
Fall in Hb (g%)	320	0.60	0.40	0.90	321	0.60	0.40	0.80	0.955	
Fall in HCT (%)	320	2.05	1.20	2.80	321	2.00	1.20	2.80	0.663	

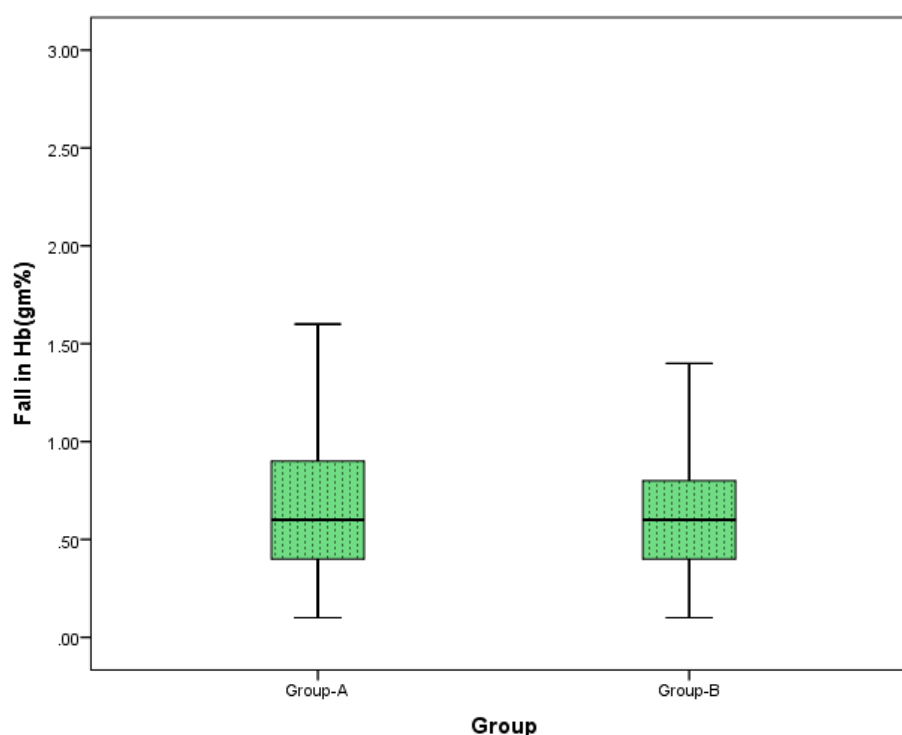


Figure 40: Comparison of fall in hemoglobin in both groups

Table 21 and figure 41 show that in group A, the median fall in hematocrit within 12-24 hour following delivery was 2.05 % with IQR 1.2-2.8% and in group B, the mean fall in hematocrit was 2 g% with IQR 1.2-2.8 g%. Thus, fall in hematocrit in both groups were comparable ($p = 0.663$).

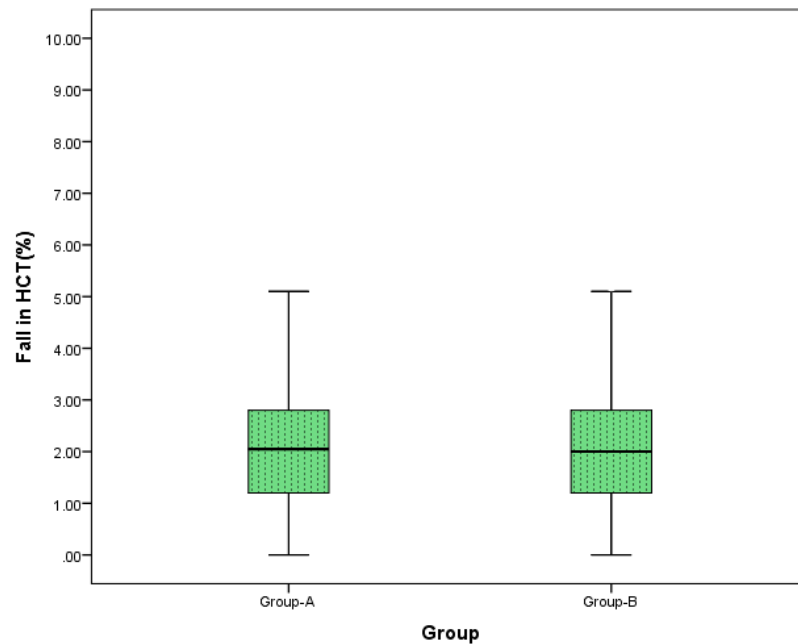


Figure 41: Comparison of fall in hematocrit in both groups

- **Comparison of kidney function tests:**

Data distribution of blood urea and creatinine in group A and B are shown in figure 42-45.

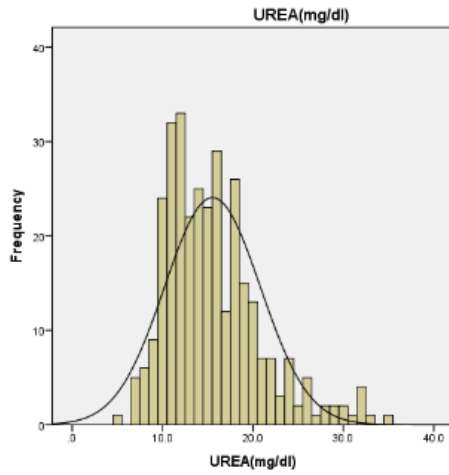


Figure 42: Data distribution of urea in group A

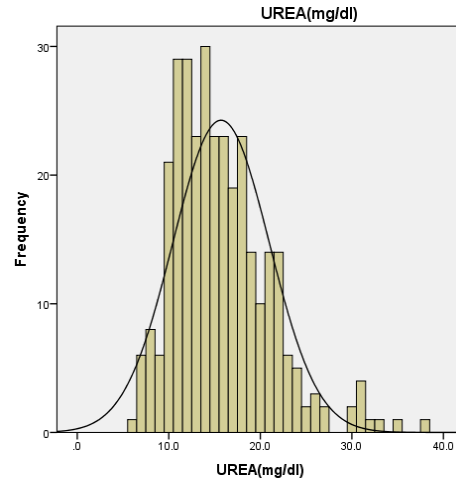


Figure 43: Data distribution of urea in group B

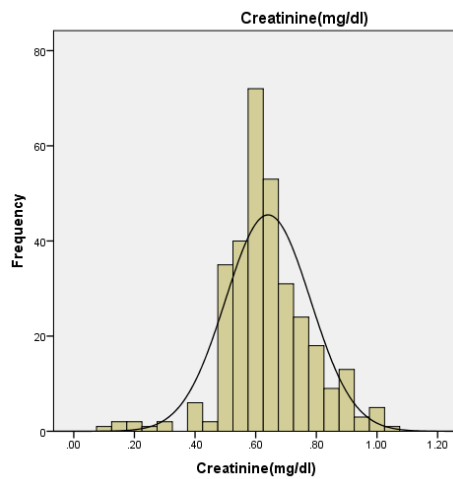


Figure 44: Data distribution of creatinine in group A

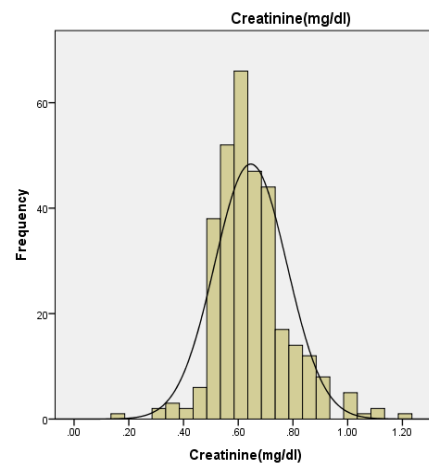


Figure 45: Data distribution of creatinine in group B

Table 22 and figure 46 show that in group A, the median blood urea level within 12-24 hour following delivery was 15 mg/dl with IQR 12-18 mg/dl and in group B, the median was 15 g% with IQR 12-18 mg/dl. Blood urea levels in both groups were comparable as p value was 0.493 which was non-significant.

Table 22: Comparison of urea and creatinine in both groups

	Groups								p value
	Group-A				Group-B				
	N	Median	Quartile-I	Quartile-III	N	Median	Quartile-I	Quartile-III	
Urea (mg/dl)	320	15.0	12.0	18.0	321	15.0	12.0	18.0	0.493
Creatinine (mg/dl)	320	0.62	0.56	0.71	321	0.63	0.57	0.70	0.917

Table22 and figure 47 show that in group A, the median serum creatinine levels within 12-24 hour following delivery was 0.62 mg/dl with IQR 0.56-0.71 mg/dl and in group B, the median was 0.63 mg/dl with IQR 0.57-0.70 mg/dl. Thus, serum creatinine levels in both groups were comparable as ($p = 0.917$).

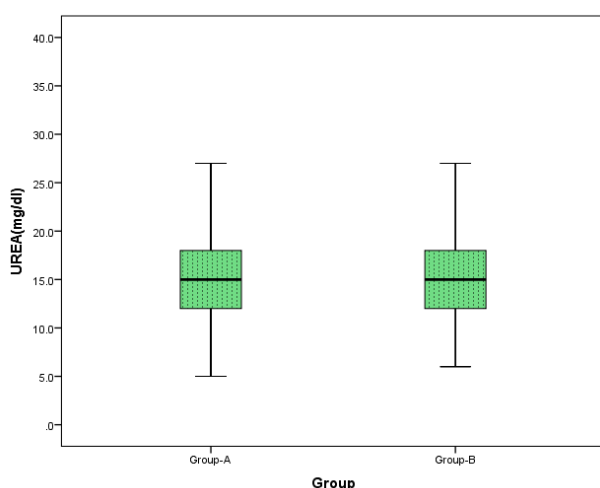


Figure 46: Comparison of median blood urea in both groups

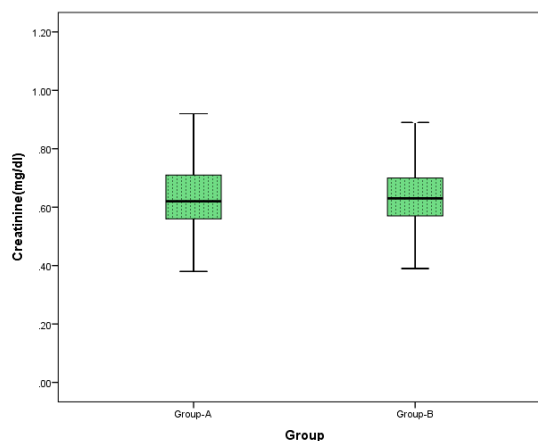


Figure 47: Comparison of median serum creatinine in both groups

- **Comparison of PT/INR and APTT:**

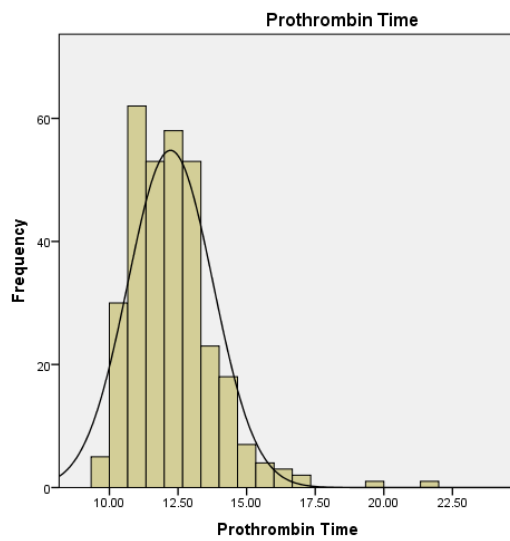


Figure 48: Data distribution of prothrombin time in group A

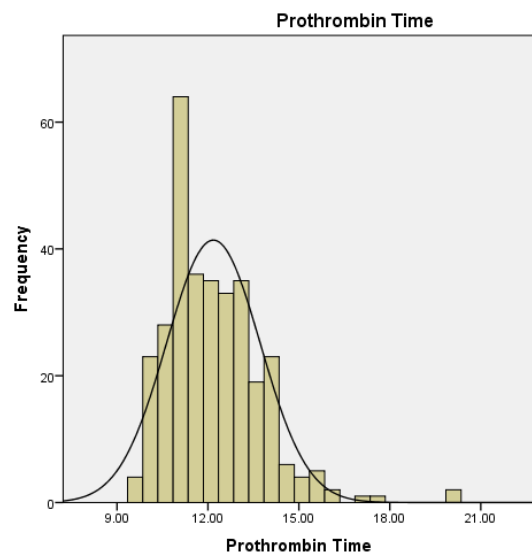


Figure 49: Data distribution of prothrombin time in group B

Table 23: Comparison of PT/ INR and APTT in both groups

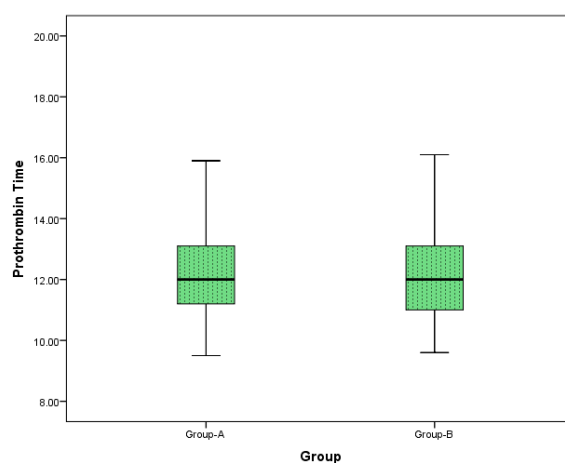
	Groups									
	Group-A				Group-B					
	N	Median	Quartile-I	Quartile-III	N	Median	Quartile-I	Quartile-III		
Prothrombin Time	320	12.00	11.20	13.10	321	12.00	11.00	13.10	0.630	
INR	320	.96	.90	1.01	321	.96	.91	1.01	0.889	
APTT	320	26.300	22.650	29.600	321	26.100	22.700	29.300	0.958	

Table 23 and figure 50 show that in group A, the median PT within 12-24 hour following delivery was 12 sec with IQR 11.2-13.1 sec and in group B, the median PT was 12 sec with IQR 11-13 sec.

Thus, PT in both groups was comparable as p value = 0.63.

Table 23 and figure 51 show that in group A, the median INR within 12-24 hour following delivery was 0.96 with IQR 0.90-1.01 and in group B, the median INR was 0.96 with IQR 0.91-1.01.

Thus, INR in both groups was comparable as p = 0.889.

**Figure 50: Comparison Of median of prothrombin time in both groups**

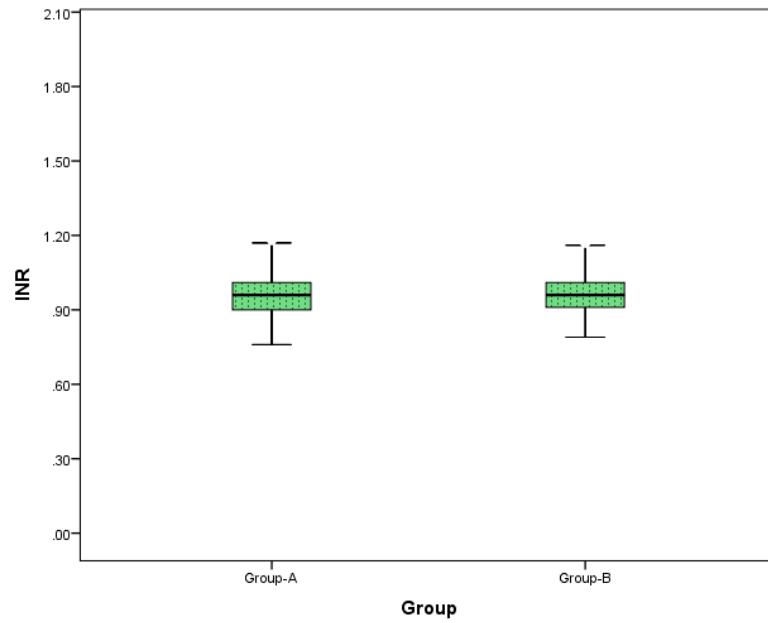


Figure 51: Comparison Of median INR in both groups

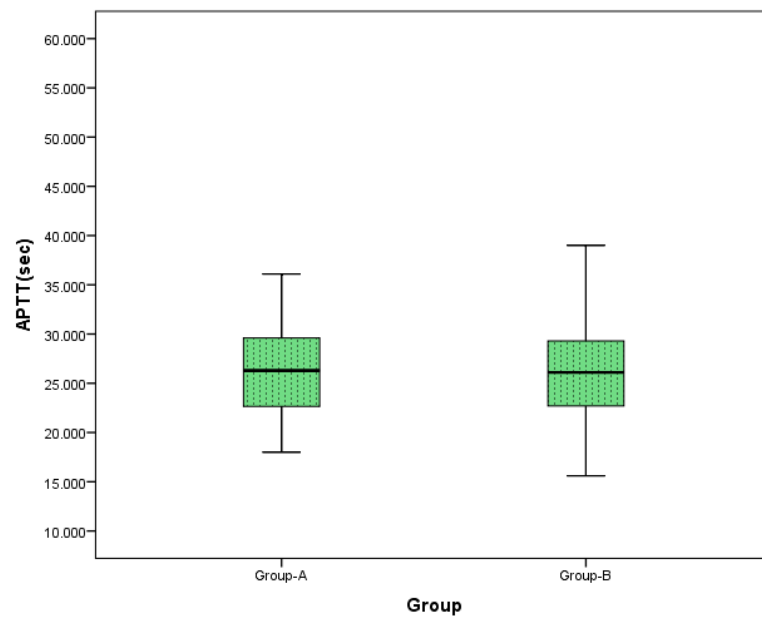


Figure 52: Comparison of median APTT in both groups

Table 23 and figure 52 show that in group A, the median APTT within 12-24 hour following delivery was 26.3 sec with IQR 22.6-29.6 sec and in group B, the median APTT was 26.1 sec with IQR 22.7-29.3 sec. Thus, APTT in both groups was comparable as $p = 0.958$.

- **Comparison of liver function test:**

Table 24 and figure 53-55 show that in group A and B, median SGOT, median SGPT, and total bilirubin levels are comparable as ($p = >0.05$).

Table 24: Comparison of SGOT, SGPT and total bilirubin levels in both groups

	Groups								
	Group-A				Group-B				
	N	Median	Quartile-I	Quartile-III	N	Median	Quartile-I	Quartile-III	p Value
SGOT (mg/dl)	320	24.0	20.0	30.0	321	24.0	20.0	31.0	0.844
SGPT (mg/dl)	320	14.00	11.00	19.00	321	15.00	11.00	20.00	0.233
Total Bilirubin (mg/dl)	320	.41	.30	.58	321	.40	.29	.60	0.619

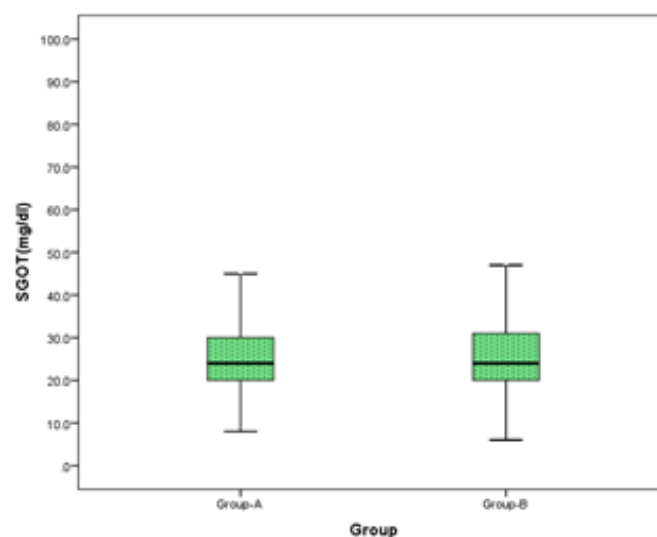


Figure 53: Comparison of median SGOT in both groups

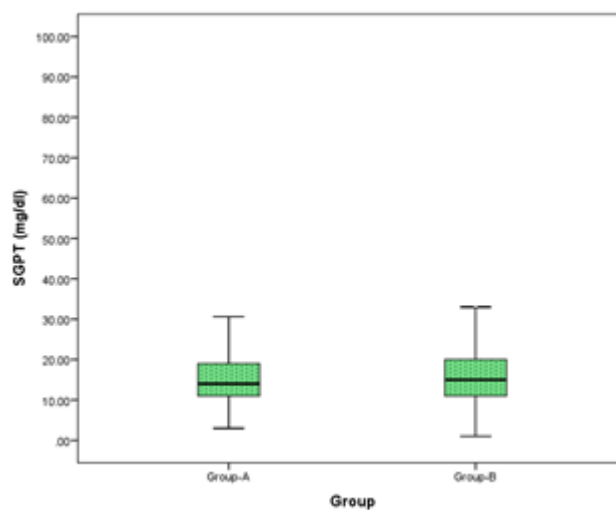


Figure 54: Comparison of median SGPT in both groups

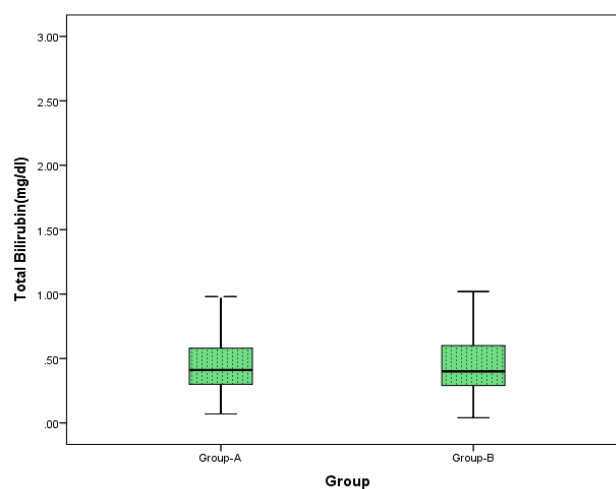


Figure 55: Comparison of total bilirubin in both groups

D) Comparison of need for additional uterotonics and blood transfusion in both groups:

a) Comparison of need for additional uterotonics

Table 25 and figure 56 show that in group A and group B, need for additional uterotonics was reported in 17.5 % and 17.1% respectively. Both groups were comparable as p value was 0.903 which was non-significant.

Table 25: Comparison of need for additional uterotonics in both groups

		Groups						p-value
		Group-A		Group-B		Total		
Additional Uterotonics	Yes	56	17.5%	55	17.1%	111	17.3%	0.903
	No	264	82.5%	266	82.9%	530	82.7%	
	Total	320	100.0%	321	100.0%	641	100.0%	

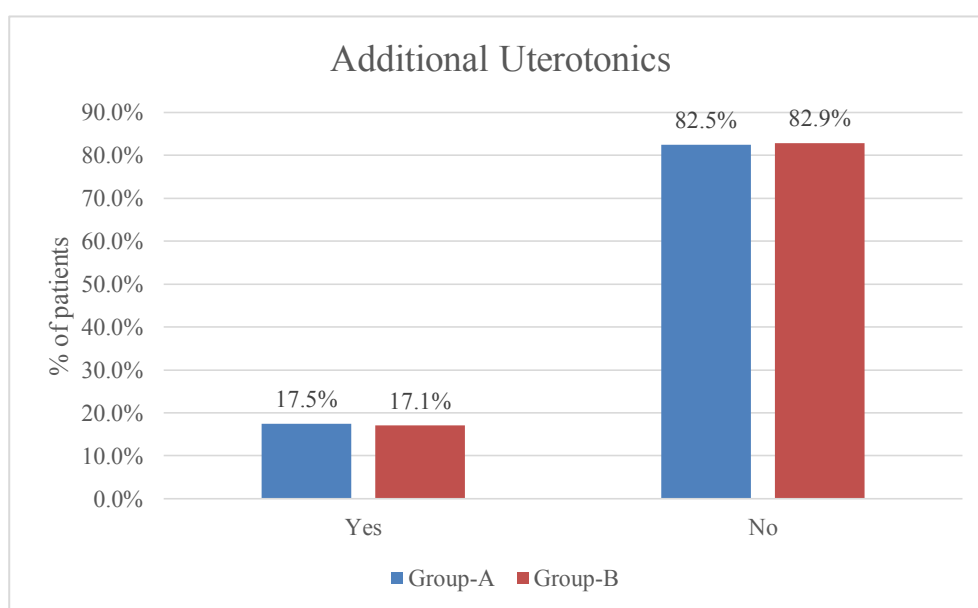


Figure 56: Comparison of need for additional uterotonics in both groups

b) Comparison of need for blood transfusion

Table and figure show that in group A, need for blood transfusion (PRBC) was reported in 0.6% while 0.9% in group B. Both groups were comparable as p value was 0.656 which was non-significant.

Table 26: Comparison of need for blood transfusion in both groups

		Groups						p-value
		Group-A		Group-B		Total		
Blood Transfusion	Yes	2	0.6%	3	0.9%	5	.8%	0.656
	No	318	99.4%	318	99.1%	636	99.2%	
	Total	320	100.0%	321	100.0%	641	100.0%	

Table 27: Comparison of Blood Components received

		Groups						p-value
		Group-A		Group-B		Total		
Additional Blood Component Received	PRBC	2	0.6%	3	0.9%	5	.8%	0.656
	None	318	99.4%	318	99.1%	636	99.2%	
	Total	320	100.0%	321	100.0%	641	100.0%	

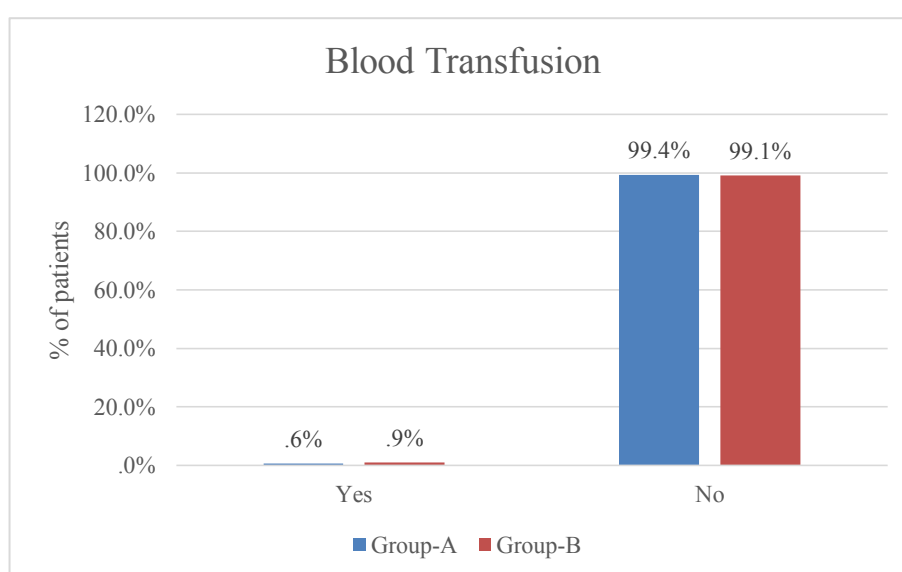


Figure 57: Comparison of need for blood transfusion in both groups

DISCUSSION

PPH remains a leading cause of early maternal death and maternal morbidity secondary to blood loss, anemia, blood transfusion-related complications, and hemorrhage-related ischemic consequences. (7,33,45) Direct causes of PPH are mainly uterine atony, trauma to the genital tract, retained placenta and coagulation abnormalities. (3) Accordingly, many detailed guidelines have been issued for the management of PPH which include the optimal use of uterotonic drugs along with obstetric interventions. (3,10,18) In contrast to this, hemostatic abnormalities as a cause of postpartum bleeding have long been considered but for first-line management of PPH, hemostatic drugs are not routinely used. This concept was challenged after the relationship between the decrease in hemostatic marker fibrinogen and the prediction of the severity of PPH was established. (48) At the same time, it was found that extensive tissue injury can shift the hemostatic equilibrium towards fibrinolysis leading to bleeding and coagulopathy. (49) Systemic antifibrinolytic agents are widely used in planned surgeries to reduce perioperative blood loss. TXA which is an antifibrinolytic agent has been found to reduce blood loss and transfusion needs in various elective surgeries. (32,45,48,51)

Many studies have been done to assess the role of adding TXA in the prophylaxis and management of PPH after both vaginal and CS deliveries. Recent evidence from various high-quality RCTs has shown that IV TXA for patients undergoing CS was safe and effective in reducing blood loss. (51) The systematic review by Kristen et al (2013) has shown the positive effect of TXA in reducing mean uterine blood loss which supports the hypothesis that TXA might be effective for the prevention of PPH in both vaginal and CS deliveries. (52) However, current existing evidence is insufficient to draw definitive recommendations for the prophylactic use of TXA in reducing postpartum blood loss and its use in addition to the conventional steps of AMTSL is still debatable. Further in this dissertation we would discuss these studies and compare our findings with the already existing literature.

This randomized, placebo-controlled, double-blinded trial was conducted at the Department of Obstetrics and Gynecology, AIIMS, Jodhpur. This trial was designed to investigate whether the prophylactic IV administration of TXA (1g) in addition to AMTSL reduces postpartum blood loss during 3rd and 4th stage of labor and decreases

the incidence of PPH after vaginal delivery, as compared to placebo (normal saline), or not.

AMTSL consists of: (1)

- Preventive administration of uterotonic agents (10 Units of intramuscular oxytocin) immediately after delivery of the baby
- Delayed cord clamping and cutting
- Controlled cord traction (CCT) for delivery of placenta and membranes

A handful of studies have been done to assess the role of TXA in addition to AMTSL in the prophylaxis of PPH following vaginal deliveries. (31, 34, 35, 38, 40, 45) Among these studies, only the present study and the study conducted by Igboke et al have followed AMTSL in all participants while the remaining studies used either one or two above-mentioned components of AMTSL. (45)

Comparison of baseline maternal characteristics and intrapartum characteristics of the participants during third stage of labor:

Age is considered an important risk factor for PPH. In the present study, the mean age of participants was 26.28 ± 3.99 years in group A and 25.6 ± 3.65 years in group B which was comparable in both groups and to most of previous studies conducted in vaginal delivery. (31-44)

Gestation age at delivery:

In the present study, in group A (TXA), 92.8% of pregnant women had POG ≥ 37 weeks whereas, in group B (placebo), 94.1% pregnant women had POG ≥ 37 weeks ($p = 0.167$). In the present study, we recruited women with POG ≥ 34 weeks so as to include women being electively induced for high-risk obstetric factors as well as those presenting with late pre-term labor and preterm-premature rupture of membranes (PPROM).

Among the previous studies done for assessing the effect of prophylactic TXA administration in postpartum blood loss following vaginal deliveries, only two studies had included patients with the period of gestation < 37 weeks. (34, 40) Gurgorduk et al recruited women with gestation age between 34-42 weeks while Sentilhes et al

recruited women with gestation age 35 weeks or more. (34, 40) In most of these previous RCTs, women with a singleton pregnancy were enrolled except one study conducted by Gurgorduk et al in which multiple gestation women were also randomized. (34)

Parity at delivery:

In the present study, we included both nulliparous and multiparous women. In group A, the majority of pregnant women were primigravida (50.6%) while in group B, the majority of pregnant women were multigravida (54.8%). However, this difference was not significant ($p = 0.167$). Most of the RCTs conducted for assessing the effect of prophylactic TXA administration in postpartum blood loss in vaginal deliveries included both primiparous and multiparous except one conducted by Yang et al. (31) Grand multiparity (≥ 5) is an important risk factor for PPH which was considered under exclusion criteria in only one study conducted by Mirghafourvand et al. (35)

Episiotomy rates:

In the present study, 72.2% of pregnant women who received TXA had episiotomy while in group B, 73.9% of pregnant women had an episiotomy ($p = 0.311$). Hence, the episiotomy rates are comparable in the two groups, and hence, episiotomy-related blood loss is not likely to act as an effect modifier. In the study by Mirghafourvand et al episiotomy rates were higher (group A 87% and group B 87%) while in the study conducted by Gungorduk et al episiotomy rates were lower (group A:114, 51.8% vs Group B:100, 45.7 %) and lowest in the study conducted by Sentilhes et al. in (group A 23.4% and group B 22.8%).(34,35,40) This difference can be explained by the difference in study population, maternal age, parity, sample size, operative vaginal delivery rates, perineal tear rates (maximum in the study conducted by Sentilhes et al and skills of attending obstetrician. (40)

Operative vaginal delivery rates:

Operative vaginal delivery has been a known risk factor for severe PPH. (53) In our study, in group A (TXA) and B (placebo), 5.3% and 4.7% pregnant women had operative vaginal delivery respectively. Out of total operative vaginal deliveries, the majority of women had vacuum-assisted vaginal delivery. Operative vaginal delivery rates were found to be comparable in both groups ($p = 0.710$). Most of the RCTs

conducted for assessing the prophylactic use of TXA in vaginal delivery had not reported the operative vaginal delivery rates except the study by Sentilhes et al wherein the operative vaginal delivery rates were found to be higher (group A-17.8%, group B-17.1%) as compared to our study. (40) However, the type of operative vaginal delivery was not reported by them.

Perineal tear rates:

Table 10 and 11 show the different types of perineal tears and their incidence in both study groups. Only a few studies compared the perineal tear rates and type of perineal tears in intervention and control groups. (34, 40) In the study conducted by Gundorduk et al, only third {group A-5,(2.3%) vs group B-3(1.4%); $p = 0.37$ } and fourth-degree perineal tear rates {group A-2(0.9%) vs group B-1(0.5%); $p = 1$ } were reported in two groups which was comparable to our study. (34) In the study conducted by Sentilhes et al, perineal tear rates were higher (group A-56.5%, group B 57.5%) as compared to our study. (40) In this study, type of perineal tears was not reported and this difference can be explained due to differences in maternal age, parity, study population, more operative vaginal delivery rates and lesser episiotomy rates. (39)

In the present study, 0.9% of pregnant women had cervical tear and likewise, 0.9% had vaginal wall tears while in group B, 0.3% of pregnant women had cervical tears while none had any vaginal tears ($p = 0.132$). Most of the RCTs reported only episiotomy and perineal tear rates and have not reported on genital tract trauma.

Study Outcomes

Primary Outcome:

Postpartum blood loss after vaginal delivery:

The primary outcome of our study was to assess the effect of IV TXA (1 g) in reducing postpartum blood loss during 3rd and 4th stages of labor following vaginal delivery in addition to AMTSL. In the present study, in group A, the mean blood loss was 378.5 ml (SD = 261.2 ml) and in group B, the mean blood loss was 383 ml (SD = 258.9 ml). There was no difference in postpartum blood loss in the experimental and

control groups ($p = 0.939$) indicating no role in routinely adding TXA to AMTSL in the prophylaxis of PPH.

We have found only a few studies on the effect of prophylactic TXA use on postpartum blood loss following vaginal delivery. (31, 34, 35,38, 40, 45) Among these RCTs, our primary outcome results are consistent with the one conducted by Sentihs et al. {220.3(280) vs 236.9(291.6), $p= 0.07$ }. (40)

Yang et al in 2001 used TXA for the first time in preventing postpartum blood loss following vaginal delivery in China. 400 primiparous women were randomized into 4 groups to receive: 1 g IV TXA; 0.5 g IV TXA; 0.5 g IV amino methyl benzoic acid or no treatment. The intervention regime was given 2-3 minutes after the delivery of the anterior shoulder along with 10 IU of injection oxytocin as an uterotonic agent under AMTSL whereas cord clamping and controlled cord traction were not reported. However, this study was not blinded, group allocation and treatment sequence were not concealed, randomization was not described properly and some cases (macrosomia) were excluded after randomization which could have introduced the bias. Weight and volume of blood loss were measured immediately after delivery of baby to expulsion of the placenta and placental expulsion till 2 hours of delivery. TXA was found to be efficient and safe in reducing postpartum blood loss in the dose of 1 g. Also, in this study, very few outcomes were reported and postpartum follow-up for secondary PPH and adverse events were not reported. (31)

A double-blinded RCT conducted in Turkey in 2013 by **Gurgorduk et al** in which 228 women between 34-42 weeks of period of gestation with singleton or multiple gestations were randomized to receive either 1 gram IV TXA over a 5 minutes following a vaginal delivery or 5% glucose along with AMTSL and uterine massage. Mean blood loss volume was calculated by weighing a blood-soaked sheet from the end of the vaginal delivery to 2 hours after birth which was significantly lower in the intervention group as compared to the placebo group {261.5 (146.8) versus 349.98 (188.85) mL, $p < 0.001$ }. Mean hemoglobin (9.9 ± 1.4 vs $9.3 \text{g/L} \pm 0.9 \text{g/L}$; $p < 0.001$) and hematocrit ($30.2 \pm 1.2\%$ vs $29 \pm 1.3\%$; $p < 0.001$) were also higher after delivery in the experimental group as compared to the placebo group. However, there are some concerns regarding the validity of this data because the authors have not used a precisely objective tool for blood loss assessment. Also, it was a very short duration

trial (from March 2011 to August 2011) and the trial was underpowered to assess the incidence of PPH and adverse events. However, in our study, pre-weighed graduated blood collection bags were used along with pre-weighed gauze and pads, providing better precision for blood loss measurement. (34)

Another small double-blinded RCT conducted by **Mirghafourav et al** in Iran in 2015 in which 120 low-risk women between 38-42 weeks POG were randomized to receive either 1gm of TXA dissolved in 200 ml saline or placebo over 10 minutes along with 10 units of oxytocin as a uterotonic agent. Early cord clamping was done. Mean blood loss was calculated by weighing a sterile graduated bag with a plastic cover, pre-weighed blood-soaked gauze, gowns, sheets, and tampons at two times, firstly after delivery of fetus to placenta {241.3 (171.5) vs 264.1 (215.8) ml; $p=0.52$ } and from placental expulsion to 2 hours postpartum {68.9 (39) vs 107.6(52.6); $p=0.01$ }. It was found that blood loss >1000 ml was lower in the TXA group (7% vs 18%; $p=0.48$). This trial concluded that prophylactic TXA reduces blood loss after vaginal delivery. However, a few limitations in this study were 1) inadequately powered, 2) AMTSL was not followed, 3) no lost to follow up from study group were reported in either group, 4) high-risk patients were excluded, 5) patients with POG <37 were not enrolled, 6) trial was underpowered to assess the incidence of PPH and adverse events. (35)

Roy et al conducted a small randomized, placebo, controlled trial in India in which 100 women with singleton pregnancy after >38 weeks POG were randomized to receive either injection oxytocin and injection TXA or injection oxytocin and placebo. The primary outcome was to evaluate the efficacy of parenteral TXA in reducing blood loss. Blood loss was measured by weighing the blood collection bag along with the pre-weighed soaked swabs used. Mean blood loss at the end of 2 hours was statistically low in the intervention group (105 ml vs 252 ml) with mean hemoglobin fall and need for uterotonics were lower in the intervention group as compared to the placebo group. However, limitations were 1) randomization and blinding were unclear, 2) drug regime dosage not defined, 3) high risk patients were excluded, 4) maternal characteristics were not compared, 5) an underpowered trial to comment on the efficacy of TXA, 6) incidence of PPH and long-term side effects were not reported. (37)

TRAAP trial conducted **Sentilhes et al.** (40) in 2018 which was a multicentric, double-blinded, RCT in which 4079 women with singleton live fetuses at 35 or more weeks of POG were randomly assigned in a 1:1 ratio to receive 1 g IV TXA or placebo. A graduated bag was used to measure blood loss in both groups. The primary outcome was PPH which occurred in 156/1921 women (8.1%) in the TXA group while in the placebo group, 188/1918 (9.8%) had PPH (RR- 0.83; 95% CI, 0.68 to 1.01; p = 0.07). However, mean blood loss (220.3 ± 280 ml vs 236 ± 291 ml; p= 0.07) was comparable in both the intervention and placebo groups which is in coherence with the present study. Hence, concluding that prophylactic TXA use following vaginal delivery did not reduce postpartum blood loss. However, a few limitations were 1) in this trial, block randomization of varying sizes was done and stratified according to a trial site which could have introduced bias, 2) all components of AMTSL were not followed (CCT 42.5% vs 42.8%), 3) blood-soaked gauze and pads were not included in blood loss while the perineal tear rates were high in both the groups in this study, 3) causes of PPH and secondary PPH were not reported. (40)

Another small RCT was conducted **Igboke et al** in which 176 women were randomly assigned into 2 groups to either 1 gm IV TXA or 10 ml water slowly (over 30-60 sec) within 2 minutes after birth along with AMTSL. Blood loss after vaginal delivery was estimated by weighing an improvised BRASS-V, a disposable conical, graduated plastic collection bag which was inserted after all the liquor was drained and along with pre-weighed sanitary pads utilized within 2 hours of birth. It was found that the mean blood loss was lower in group A as compared to group B (174.87 ± 119.83 ml versus 341.07 ± 67.97 ml with $P < 0.0001$) In group A, 5.13% had PPH while in group B, 7.14 % women had PPH. The need for additional uterotonics was found more in the control group as compared to the intervention group {14(16.67%) versus 3(3.85%), p-value= 0.007}. This trial needs to be evaluated on largescale to conclude the efficacy and safety of intravenous tranexamic acid as it is underpowered to assess the postpartum blood loss which was almost double in control group. (45)

Secondary Outcomes

Incidence of PPH or severe PPH

In the present study, in the intervention group, 15.9 % of women (n= 51) had PPH and in the placebo group, 15.3 % of women (n =49) had primary PPH (p=0.814). Among 51 pregnant women who had primary PPH, 13 women (25.5 %) had severe PPH in group A while in group B, 13 (26.5%) out of 49 women had severe PPH (p=0.906). In group A, out of 51 pregnant women who developed PPH, 88.2 % had atonic PPH and 15.7 % had traumatic PPH. In group B, out of 44 pregnant women who developed PPH, 89% had atonic PPH and 14.3% had traumatic PPH. However, the present study was not adequately powered to comment on the incidence of PPH.

The third and fourth stages of labor is a critical period for PPH prevention. The most common cause of PPH is uterine atony and various preventive measures have already been proposed to prevent PPH which can be schematically divided into 1) mechanical measures 2) those involving prohaemostatic agents. (12) The underlying principle for the effectiveness of AMTSL by obtaining a uterine retraction necessary for good local hemostasis, has already been proved. (15,54) However, in addition to these measures, complementary methods for biochemical hemostasis using prohemostatic drugs may be expected to reduce blood loss further and there is a clear theoretical rationale for use of TXA as an antifibrinolytic agent to reduce postpartum blood loss. (33, 55, 56, 57)

As per the existing literature, a definitive conclusion about the effect of prophylactic administration of TXA on the incidence of PPH in vaginal delivery could not be made because the definition and criteria of obstetrical hemorrhage vary in different regions, which might cause a higher heterogeneity. Most of trials regarded PPH as over ≥ 500 mL blood loss after vaginal delivery while one trial conducted by Yang et al used a ≥ 400 mL as a threshold. (31, 34, 35, 40, 45). While some trials used graduated bags and others calculated the mean blood loss volume by measuring blood-soaked sheets of pads from the end of delivery to 2 hours after birth.(31, 34,35,40)

Only two studies have shown statistically significant results to prove the efficacy of TXA in preventing primary PPH.(34, 40) In the study by Gurgorduk et al, primary PPH (blood loss > 500 ml) and severe PPH (blood loss > 1000 ml) were reported

higher in the placebo group as compared to the intervention group (6.8%, n=15 vs 1.8%, n= 4 ; p= 0.01) (2.3%, n= 5 vs 0.5%, n=1; p= 0.12 respectively) which showed the reduction of blood loss > 500 ml was statistically significant. (34) This could have been because Gurgorduk et al had recruited high-risk women for PPH but this study was not adequately powered to conclude the efficacy of prophylactic TXA use in reducing the incidence of PPH. In another study by Sentilhes et al, 7.8%(n=7.8%) had primary PPH in the intervention group as compared to 10.4%(n=203) in the placebo group(p=0.04). (40) However, in studies conducted by Yang et al, Mirghafourvand et al (group A – 45%, n=27 and group B – 59%, n= 34; p= 0.14) and Igboke et al (group A –5.13%, n=4 and group B – 7.14%, n= 6 ; p= 0.59) concluded no significant difference in reducing the incidence of primary PPH between intervention and placebo group. (31, 35, (45) Blood loss >1000 ml was statistically reduced only in study by Mirghafourvand et al (p=0.04). (34) However no statistically significant fall in postpartum hemoglobin level was reported in either of these two studies .(34), 40). This difference can be explained by the difference in study populations, presence of high-risk factors, sample size, selection bias, methodologic limitations, AMTSL and use of additional uterotonics as discussed earlier which are limiting us to justifying the widespread use of TXA in preventing PPH. Furthermore, in these RCTs, type of PPH and secondary PPH were not reported which is an important factor in the management of PPH.

A small triple-blinded, placebo-controlled RCT, conducted by Zargar et al in which 248 pregnant women, with atonic PPH undergoing CS or vaginal delivery, were randomly assigned to receive 4g TXA for an hour followed by 1g over 6 hours infusion or prostaglandin analog. No statistically significant difference in postoperative bleeding was reported between the two groups (68.2±6.1 ml and 69.1±175.73 ml, respectively, p =0.6) showing no role of prophylactic TXA in atonic PPH. (57)

In the present study that 0.6% of patients in group A reported secondary PPH and were medically managed while in group B, no secondary PPH was reported (p=0.156). However, this difference was not significant. To our knowledge, no studies have been performed evaluating the incidence of secondary PPH in women where prophylactic TXA was used after vaginal delivery.

Maternal Adverse effects:

In the present study, dizziness was reported as the most common side effect in both groups (group A-3.1% and group B 2.8%; $p= 0.81$) which was mainly reported in women who developed PPH. In group A, 2.5 % of women had nausea and 0.9 % of had vomiting while none had photopsia. In group B, 1.9% women had nausea, 0.3% had vomiting and none had photopsia. On postpartum follow-up interviews at three months after delivery, no thromboembolic events, seizure, renal failure, and need for anticoagulant was reported in both the group.

Immediate Adverse effects:

The study conducted by Yang et al (2001) reported no major adverse effects with TXA use. (30) One study reported nausea, vomiting, diarrhea, pyrexia, tachycardia, headaches, giddiness, and shivering significantly higher in the woman who received TXA however, no thromboembolic events were reported (Gungorduk 2013). Among various studies, Mirghafourvand et al reported dizziness and nausea, Sentilhes et al reported on nausea/vomiting ($p<0.001$), photopsia and dizziness while Igboke et al reported on reported diarrhea. (34, 35, 40, 45)

Long Term Adverse effects:

On theoretical grounds, an increase in thromboembolic events might be expected from the use of TXA. Although recent evidence from the CRASH-2 trial showed a statistically significant decrease in global mortality with no increase in thromboembolic events in bleeding trauma patients. (31) In addition, the evidence from WOMAN trial shows no statistically significant increase in thromboembolic events in the TXA group. (24) On comparing various RCTs conducted for assessing the role of TXA in both prophylaxis and treatment of PPH after vaginal delivery, it was found that thromboembolic events were reported in only two studies conducted by Ducloy Bouthours et al (DVT in group A- 2, 3% and DVT in group B- 1, 1%; $p= 0.4$) and Sentilhes et al (group A- 1, 0.1 % and group B- 0%) and they found no statistically significant difference. (33, 40) Pregnancy in itself is a hypercoagulable state and the evidence available for assessing the safety profile of TXA in the prevention and treatment of PPH is limited for pregnant patients as compared to non-pregnant. (58) Caution is necessary before recommending this drug in routine practice. Larger trials are required to prove its safety profile in pregnancy.

Need for additional uterotonics:

In the present study, 17.7% and 17.1 % of women required additional uterotonics in group A and Group B respectively ($p=0.903$) which was comparatively higher than the previous studies. However, it was comparable in both the intervention and placebo groups excluding it from being an effect modifier. This difference can be explained by the fact that our institute, being a tertiary care center, had a greater number of deliveries of high-risk patients. So, additional uterotonics were given either for the prophylaxis or management of PPH. Recent evidence from WOMAN trial has also shown no statistically significant difference in the use of additional uterotonics in the TXA and the control group. (24)

Statistically significant decrease in the need for additional uterotonic was found in studies conducted by Gungorduk et al (6, 2.7% vs 19, 8.7%; $p=0.007$), Sentilhes et al (141, 7.2% vs 189 9.7%; $p=0.04$), Igboke et al (3, 3.85% vs 14,16.67%; $p=0.007$) and Roy et al (1,2% vs 11, 22 %; $p<0.001$). (34, 39, 45) Although in these RCTs, none of them have reported whether the additional uterotonics were given for prophylaxis or management of PPH. Surprisingly, incidence of PPH in these RCTs did not complement to need for additional uterotonic agents. Additional uterotonics when given after delivery, can act as an effect modifier on blood loss and incidence of PPH.

Need for blood transfusion

In the present study, 0.6% and 0.9 % of participants required blood transfusion in the intervention and placebo groups respectively ($p=0.656$). This is in coherence with the findings in most studies that compared efficacy of prophylactic TXA to placebo after vaginal delivery. (24, 33,39,45) However, the present study was not sufficiently powered to assess the need for blood transfusion in two groups. Blood transfusion was needed in the treatment group due to primary PPH which could have happened to either group.

Peripartum change in the hemogram

In our study, the median fall in hemoglobin within 12-24 hours following delivery in group A was 0.60 g% (IQR 0.4-0.9) and in group B, the median fall in hemoglobin was 0.6 g% (IQR 0.4-0.8). In group A, median fall in hematocrit within 12-24 hours following delivery was 2.05 % (IQR 1.2-2.8) and in group B, median fall in

hematocrit was 2 g% (IQR 1.2-2.8 g%). The present study findings complement with mean blood loss in both the intervention and placebo groups. Thus, TXA has no role in the peripartum change in hemoglobin and hematocrit levels in both groups. This was in coherence with the findings reported by Mirghafourvand et al and Sentilhes et al. (34, 39)

However, the statistically significant difference of postpartum hemoglobin and hematocrit levels among two groups were reported by Gurgorduk et al (mean hemoglobin after delivery: 9.9 ± 1.4 vs 9.3 ± 0.9 ; $p < 0.001$ and mean HCT after delivery- 30.2 ± 1.2 vs 29 ± 1.3 ; $p < 0.001$), Igboke et al (mean hemoglobin change after 48 hours- 0.94 ± 0.43 vs 1.21 ± 0.63 ; $p = 0.0019$ and mean HCT change after 48 hours- 03.14 ± 0.94 vs 4.11 ± 1.1 ; $p = 0.0018$) and Roy et al (for postdelivery hemoglobin and HCT $p < 0.0001$). (34, 37, 45). On comparing available literature, a definitive conclusion about the effect of prophylactic TXA use on peripartum change in hemoglobin and hematocrit levels after vaginal delivery could not be made because criteria of assessment of change in hemoglobin and hematocrit vary in different studies, which might cause a higher heterogeneity. The difference in populations, presence of high-risk factors, sample size, methodologic limitations, use of additional uterotonics, and data distribution in two groups were also limiting factors.

Comparison of renal function tests, liver function tests, and coagulation profile:

In the present study, in group A, the median blood urea level within 12-24 hours following delivery was 15 mg/dl (IQR:12-18) and in group B, the median was 15 g% (IQR:12-18) which was comparable in both groups ($p = 0.493$).

In the present study, in group A, the median serum creatinine level within 12-24 hours following delivery was 0.62 mg/dl (IQR: 0.56-0.71) and in group B, the median was 0.63 mg/dl (IQR: 0.57-0.70) which was comparable in both groups ($p = 0.917$). Thus, the present study shows that prophylactic TXA does not affect renal functions of participants when administered after vaginal delivery. However, there are few reports of acute renal failure and renal cortical necrosis caused by TXA (59). Only a few trials have evaluated the effect of prophylactic TXA use on renal function tests following vaginal delivery. Studies conducted by Gurgorduk et al and Sentiles et al have shown no statistically significant difference in postpartum blood urea and creatinine levels in experimental (TXA) and placebo groups after vaginal delivery

while recent evidence from WOMAN trial have shown no increase in organ failure in both groups. (42, 33, 39)

In the present study, in group A and B no statistically significant difference was reported in median SGOT, median SGPT, and total bilirubin levels ($p = >0.05$) in both groups which were in coherence with the findings by Gurgorduk et al while Sentiles et al reported a statistically significant difference in serum aspartate transaminase levels ($p= 0.01$). (34, 40)

The drug TXA has no effects on various blood coagulation parameters however pregnancy has altered coagulation homeostasis, so the effect of an antifibrinolytic agent needs to be evaluated. (60) In the present study in group A, the median Prothrombin time within 12-24 hours following delivery was 12 sec (IQR- 11.2-13.1 sec) and in group B, the median prothrombin time was 12 sec (IQR:11-13sec) with $p = 0.63$ while the median INR was 0.96 (IQR: 0.90-1.01) and in group B, median INR was 0.96 sec (IQR:0.91-1.01).

In group A, the median APTT within 12-24 hours following delivery was 26.3 sec (IQR: 22.6-29.6 sec) and in group B, the median INR was 26.1 sec (IQR: 22.7-29.3sec) which was comparable in both groups as $p = 0.958$.

No statistically significant finding was reported for coagulation profile after prophylactic TXA use in vaginal delivery by Gungorduk et al and Sentilhes et al. (33, 40)

STRENGTH AND LIMITATIONS OF THE STUDY

Strengths of study:

- The major strength of the present study was the study design which was a randomized, placebo-controlled, double-blinded trial wherein all the parameters were recorded in real-time, ensuring their accuracy.
- The sample size was calculated to conduct this study with adequate power to assess the primary outcome.
- Randomization of the study ensured that various maternal antepartum and intrapartum characteristics were equally distributed among the two groups to minimize the bias caused by effect modifiers and confounders.
- The participants of both groups were followed till 3 months post-delivery for secondary PPH and long-term adverse effects of TXA.
- A few new variables were studied including the incidence of genital tract trauma, type of PPH, and incidence of secondary PPH which were never studied in previous similar studies.
- Both nulliparous and multiparous women with gestation age >34 weeks were included in the study.
- The methodology of the study clearly defines the method of blood loss measurement which is easily reproducible.
- Only a few RCTs have been reported on the prophylactic use of TXA after vaginal delivery. In India, the present study is the largest RCT conducted in women after vaginal delivery.

Limitations of study: Some limitations of this study should be acknowledged:

- Multiple gestations and grand multiparous women were not included which might be the subset benefitting from an additional hemostatic measure of PPH prophylaxis.
- The present study was underpowered to comment on the efficacy of TXA on the rate of PPH, severe PPH, need of blood transfusion, and thromboembolic events.
- Hemoglobin and hematocrit before delivery was performed as a part of routine ANC. However, some of them were done out of hospital laboratories.
- Our trial was not powered to perform subgroup analysis in high-risk patients.

SUMMARY AND CONCLUSION

- This was a single-centered, placebo-controlled, double-blinded randomized controlled trial with two parallel arms aimed to determine the effect of prophylactic intravenous administration of (1 g) TXA, as an adjunct to AMTSL, in reducing postpartum blood loss following vaginal delivery in comparison with placebo.
- It was conducted at the Department of Obstetrics and Gynecology, AIIMS Jodhpur from March 2021 to August 2022.
- The study is registered at the Clinical Trial Registry of India (CTRI/2021/02/040861).
- After informed consent, all eligible women with singleton pregnancy at ≥ 34 weeks of gestation undergoing vaginal delivery were randomly assigned (block randomization) in a 1:1 ratio to receive either a single dose of 1 g intravenous TXA or a placebo (10 ml normal saline) over 2 minutes of vaginal delivery along with AMTSL.
- Blood loss was measured by weighing the blood collection bag which was opened just after delivery of the baby to collect and measure postpartum blood loss during 3rd and 4th stages of labor and pre-weighed blood-soaked swabs and pads utilized during episiotomy closure.
- Baseline maternal characteristics and various intrapartum characteristics during 3rd stage of labor were comparable in both groups.
- In the present study, in group A, the mean blood loss was 378.5 ml \pm 261.2 ml and in group B, the mean blood loss was 383 ml \pm 258.9 ml. There was no difference in postpartum blood loss in the experimental and the control group ($p = 0.939$) indicating no role of adding TXA to AMTSL in PPH prophylaxis.
- In the intervention group, 15.9 % of women ($n = 51$) and in the placebo group, 15.3 % of women ($n = 49$) had primary PPH ($p = 0.814$). Among 51 pregnant women who had primary PPH, 13 women (25.5 %) had severe PPH in group A while in group B, 13 (26.5%) out of 49 women had severe PPH ($p = 0.906$). However, the present study was not adequately powered to find difference in

the incidence of PPH and severe PPH in the two groups.

- In group A, out of 51 pregnant women who developed PPH, 88.2 % had atonic PPH and 15.7 % had traumatic PPH. In group B, out of 44 pregnant women who developed PPH, 89% had atonic PPH and 14.3% had traumatic PPH.
- On follow-up interview call at 6 weeks postpartum, in group A, 0.6% of patients reported secondary PPH and were medically managed while in group B, no secondary PPH was reported($p=0.156$). To our knowledge, no studies have been performed evaluating the incidence of secondary PPH in women where prophylactic TXA was used after vaginal delivery.
- In the present study, dizziness was reported as most common side effect in both groups (Group A-3.1% and Group B 2.8% with $p= 0.81$) which was mainly reported in women who developed PPH. In group A, 2.5 % of women had nausea and 0.9 % had vomiting while none had photopsia. In group B, 1.9% of women had nausea, 0.3% had vomiting and none had photopsia.
- On postpartum follow up interviews at three months after delivery, no thromboembolic events, seizure, renal failure, and need for anticoagulant was reported in both the groups.
- 17.7% and 17.1 % of women required additional uterotonics in group A and group B respectively ($p=0.903$).
- In present study 0.6% and 0.9 % participants required blood transfusion in the intervention and the placebo group respectively ($p=0.656$).
- Within 12-24 hours following delivery, peripartum changes in a hemogram (hemoglobin and hematocrit) in intervention group and placebo group were compared along with post-delivery levels of PT/INR, APTT, liver function test (SGOT/SGPT/total bilirubin) and renal function test(urea/creatinine). No statistically significant difference was reported in laboratory parameters in both groups.
- We conclude from our study that the addition of prophylactic TXA to conventional AMTSL has no role in reducing postpartum blood loss following vaginal delivery. However, TXA use was not associated with any major adverse effect or thromboembolic event. Further implementation research is

needed to assist decision-makers and practitioners in developing TXA-inclusive PPH prophylaxis packages in vaginal deliveries of high-risk patients including grand multiparous, multifetal gestation, and those with already existing coagulation disorders.

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ANNEXURE - I



अखिल भारतीय आयुर्विज्ञान संस्थान, जोधपुर
All India Institute of Medical Sciences, Jodhpur
संस्थागत नैतिकता समिति
Institutional Ethics Committee

No. AIIMS/IEC/2021/3431

Date: 12/03/2021

ETHICAL CLEARANCE CERTIFICATE

Certificate Reference Number: AIIMS/IEC/2021/3326

Project title: "Effect of intravenous tranexamic acid (TXA) in addition to active management of third stage of labour on postpartum blood loss in vaginal delivery: A double blinded, randomized controlled trial"

Nature of Project: Research Project Submitted for Expedited Review
Submitted as: M.D. Dissertation
Student Name: Dr. Pratibha
Guide: Dr. Garima Yadav
Co-Guide: Dr. Pratibha Singh, Dr. Navdeep Kaur Ghuman, Dr. Charu Sharma & Dr. Priyanka Kathuria

Institutional Ethics Committee after thorough consideration accorded its approval on above project.

The investigator may therefore commence the research from the date of this certificate, using the reference number indicated above.

Please note that the AIIMS IEC must be informed immediately of:

- Any material change in the conditions or undertakings mentioned in the document.
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research.
- In case of any issue related to compensation, the responsibility lies with the Investigator and Co-Investigators.

The Principal Investigator must report to the AIIMS IEC in the prescribed format, where applicable, bi-annually, and at the end of the project, in respect of ethical compliance.

AIIMS IEC retains the right to withdraw or amend this if:

- Any unethical principle or practices are revealed or suspected
- Relevant information has been withheld or misrepresented

AIIMS IEC shall have an access to any information or data at any time during the course or after completion of the project.

Please Note that this approval will be rectified whenever it is possible to hold a meeting in person of the Institutional Ethics Committee. It is possible that the PI may be asked to give more clarifications or the Institutional Ethics Committee may withhold the project. The Institutional Ethics Committee is adopting this procedure due to COVID-19 (Corona Virus) situation. If the Institutional Ethics Committee does not get back to you, this means your project has been cleared by the IEC.

On behalf of Ethics Committee, I wish you success in your research.


Dr. Praveen Sharma
Member Secretary
Member secretary
Institutional Ethics Committee
AIIMS, Jodhpur

Basni Phase-2, Jodhpur, Rajasthan-342005; Website: www.aiimsjodhpur.edu.in; Phone: 0291-2740741 Extn. 3109
E-mail : ethicscommittee@aiimsjodhpur.edu.in; ethicscommitteeaiimsjd@gmail.com

ANNEXURE 2

All India Institute of Medical Sciences Jodhpur, Rajasthan

(Department of Obstetrics & Gynecology)

PATIENT INFORMATION SHEET (PIS)

You are invited to take part in this study entitled “Effect of Intravenous Tranexamic Acid (TXA) In Addition To Active Management Of Third Stage Of Labor On Postpartum Blood Loss In Vaginal Delivery: A Double Blinded , Randomized Controlled Trial”

It is informed that it is entirely voluntary and you may refuse to take part or discontinue at any time without losing your right to adequate gynecological care.

This research is aimed at study of effect of prophylactic administration of 1 gram of TXA IV in reducing blood loss after vaginal delivery.

Even if you refuse to participate in this study the investigations and the appropriate treatment will be carried out as a regular protocol.

The study requires routine investigations to be performed and hence the cost of the investigations has to be borne by you.

The expected duration of your participation in this study is less than the duration of follow up.

There is no specific complication due to the study.

All the records will be kept confidential.

You have the right to ask for any further information that you require.

In case of any doubt regarding the study you are welcome to contact the undersigned personally or telephonically. (9050385232)

ANNEXURE 3

अखिल भारतीय आयुर्विज्ञान संस्थान जोधपुर, राजस्थान

(प्रसूति एवं स्त्री रोग विभाग)

रोगी सूचना पत्रक (पीआईएस)

आप इस अध्ययन में भाग लेने के लिए आमंत्रित कर रहे हैं - “**योनि प्रसव में श्रम के तीसरे चरण के सक्रिय प्रबंधन के अलावा प्रसवोत्तर रक्त हानि पर ट्रेनएक्सएमिक एसिड (TXA) का प्रभाव: एक डबल अंधा, यादृच्छिक नियंत्रित परीक्षण**”

यह बताया गया है कि यह पूरी तरह से स्वैच्छिक है और आप पर्याप्त स्त्री रोग देखभाल के अपने अधिकार को खोने के बिना किसी भी समय भाग लेने या बंद करने से मना कर सकते हैं।

इस शोध का उद्देश्य योनि प्रसव के बाद रक्त की कमी को रोकने में नसों के साथ 1 ग्राम TXA के रोगनिरोधी प्रशासन के प्रभाव का अध्ययन करना है।

यहां तक कि अगर आप इस अध्ययन में भाग लेने से इनकार करते हैं तो जांच और उचित उपचार एक नियमित प्रोटोकॉल के रूप में किया जाएगा।

अध्ययन के लिए नियमित जांच किए जाने की आवश्यकता है और इसलिए जांच की लागत आपको वहन करनी होगी।

इस अध्ययन में आपकी भागीदारी की अपेक्षित अवधि अनुवर्ती अवधि से कम है।

पढ़ाई के कारण कोई खास उलझन नहीं है।

सभी अभिलेखों को गोपनीय रखा जाएगा।

आपको किसी भी और जानकारी के लिए पूछने का अधिकार है जिसकी आपको आवश्यकता है।

अध्ययन के बारे में किसी भी संदेह के मामले में आप व्यक्तिगत रूप से या टेलीफोनिक रूप से धोहस्ताक्षरी से संपर्क करने के लिए स्वागत कर रहे हैं। (9050385232)

ANNEXURE 4

All India Institute of Medical Sciences Jodhpur, Rajasthan

Informed Consent Form

Title of the project: **Effect of Intravenous Tranexamic Acid (TXA) In Addition To Active Management Of Third Stage Of Labor On Postpartum Blood Loss In Vaginal Delivery: A Double Blinded, Randomized Controlled Trial.**

Name of the Principal Investigator : Dr. Pratibha Tel. No.9050385232

Patient/Volunteer Identification No. _____

I, _____ W/o or D/o _____ R/o _____

_____ give my full, free, voluntary consent to be a part of the “**Effect of Intravenous Tranexamic Acid (TXA) In Addition To Active Management Of Third Stage Of Labor On Postpartum Blood Loss In Vaginal Delivery: A Double Blinded , Randomized Controlled Trial**” the procedure and nature of which has been explained to me in my own language to my full satisfaction. I confirm that I have had the opportunity to ask questions.

I understand that my participation is voluntary and am aware of my right to opt out of the study at any time without giving any reason. I understand that the information collected about me and any of my medical records may be looked at by responsible individual from AIIMS Jodhpur or from regulatory authorities. I give permission for these individuals to have access to my records.

Date: __

Place: _____ Signature/Left thumb impression

This to certify that the above consent has been obtained in my presence.

Date: _____

Place: _____

Signature of PG Student

Witness 1 _____

2. Witness _____

Signature

Signature

Name _____

Name _____

Address: _____

Address _____

ANNEXURE 5

अखिल भारतीय आयुर्विज्ञान संस्थान जोधपुर, राजस्थान

प्रसूति एवं स्त्री रोग विभाग

सूचित सहमति प्रपत्र

थीसिस / निबंध का शीर्षक: योनि प्रसव में श्रम के तीसरे चरण के सक्रिय प्रबंधन के अलावा प्रसवोत्तर रक्त हानि पर ट्रेनएक्सएमिक एसिड (TXA) का प्रभाव: एक डबल अंधा, यादृच्छिक नियंत्रित परीक्षण

पीजी छात्रा का नाम: डॉ **प्रतिभा**

दूरभाष। संख्या : 9050385232

रोगी / स्वयंसेवक पहचान संख्या: _____

मैं, _____ पत्नी / पुत्री _____ रहने का स्थान _____ अध्ययन “श्रम के

तीसरे चरण के सक्रिय प्रबंधन के अलावा नसों में ट्रेनएक्सेमिक एसिड योनि प्रसव में प्रसवोत्तर रक्त की कमी को कम करता है: एक डबल अंधा, यादृच्छिक नियंत्रित परीक्षण”का एक भाग बनने के लिए मेरी पूर्ण, स्वतंत्र, स्वैच्छिक सहमति देती हूँ, जिसकी प्रक्रिया और प्रकृति मुझे अपनी पूरी संतुष्टि के लिए अपनी भाषा में समझाई गई है। मैं पुष्टि करता हूँ कि मुझे प्रश्न पूछने का अवसर मिला है। मैं समझती हूँ कि मेरी भागीदारी स्वैच्छिक है और मुझे किसी भी कारण दिए बिना किसी भी समय अध्ययन से बाहर निकलने के मेरे अधिकार की जानकारी है।

मैं समझती हूँ कि मेरे और मेरे मेडिकल रिकॉर्ड के बारे में एकत्रित की गई जानकारी को अखिल भारतीय आयुर्विज्ञान संस्थान (कंपनी नाम) या विनियामक प्राधिकरणों से जिम्मेदार व्यक्ति द्वारा देखा जा सकती है। मैं इन लोगों के लिए मेरे रिकॉर्डों तक पहुंच की अनुमति देती हूँ

तारीख : _____

जगह: _____

हस्ताक्षर / बाएं अंगूठे का छाप

यह प्रमाणित करने के लिए कि मेरी उपस्थिति में उपरोक्त सहमति प्राप्त की गई है

तारीख : _____

जगह: _____

पीजी छात्र के हस्ताक्षर

1. गवाह 1

2. गवाह 2

हस्ताक्षर

हस्ताक्षर

नाम

नाम: _____

पता

पता : _____

ANNEXURE 6

CASE RECORD SHEET: -

Group A-

☐

Group B -

☐

Name of Patient:

Husband/Guardian name:

Age:

Hospital ID:

Occupation:

Address:

Phone number

Alternate Phone number

LMP _____

EDD _____

OBSTETRIC HISTORY:

PAST HISTORY

FAMILY HISTORY

PERSONAL HISTORY

ALLERGY HISTORY

OBSTETRIC CO MORBIDITIES

Delivery Details

Blood loss in 3 rd and 4 th stage of labor (in ml)	
AMTSL 1. Prophylactic uterotonic agent 1. Cord clamping 2. Controlled cord traction	Yes/no, if yes, a. oxytocin b. misoprostol c. methergine d. carboprost early/delayed yes/ no
Operative vaginal delivery	Yes/no If yes – Vacuum/forceps
Episiotomy	Yes/no
Perineal tear	Yes/no
Study treatment	a. Received assigned treatment within two minutes of birth- yes/no b. Received no treatment c. Received management of PPH/ or any other uterotonic agent,

Outcome measures

Primary outcome: PPH, defined by blood loss ≥ 500 mL	yes/no
Severe PPH, defined by blood loss ≥ 1000 mL	Yes/no
Additional uterotonics	yes/no, if yes: a. oxytocin b. misoprostol c. methergine d. carboprost
Blood transfusion required	Yes/no If yes, No of PRBC Additional blood component
Secondary PPH (> 24 hour – 6 weeks)	1). Report excessive blood loss after 24 hours 2). Seek medical intervention 3). Re admission after discharge 4). None of above

Blood sample results (12-24 hour)	GROUP-
Fall Haemoglobin (gm%)	
Fall Haematocrit	
Urea nitrogen — mmol/l	
Creatinine — μ mol/l	
PT/INR	
Active prothrombin time — s	
Liver function test SGOT/SGPT	
Total bilirubin	

Adverse effects

Immediate adverse effects	
Nausea	
Vomiting	
Photopsia	
Dizziness	
Postpartum up to three months after delivery	
Thromboembolic event	Yes/no If yes- a. Deep vein thrombosis b. Pulmonary embolism c. Ovarian vein thrombosis d. Superficial vein thrombosis e. Retinal vascular occlusion f. Myocardial infarction g. Stroke
Seizure	
Renal failure	
Anticoagulant therapy at and after discharge	

MASTER CHART

Group	Name	AIIMS/ID	Age	Obstetric history	Rapid labour	Augmented Labour	Labour Induction	Preeclampsia	Scarred Uterus	Large Fetus	Hydrominos	Fibroid	Prolong Labor	Anemia	History of PPH	Operative Vaginal Delivery	Type of Operative Delivery	Episiotomy	Perineal Tear	Type of Perineal Tear	Secondary PPH	Other Tear	Blood Loss(ml)	Primary Outcome : PPH	Atonic PPH	Traumatic PPH	Additional Uterotonics	Blood Transfusion	Additional Blood Component Received	Fall in Hb(gm%)	Fall in HCT(%)	UREA(mg/dl)	Creatinine(mg/dl)	Prothrombin Time	INR	APTT(sec)	SGOT(mg/dl)	SGPT (mg/dl)	Total Bilirubin(mg/dl)	Nausea	Vomiting	Dizziness	Long Term adverse effects
Group-A	Sonu	2020/08/009096	33	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	Cervical Tear	430				No	No	None	0.8	2.9	15	0.7	11	1.2	23.7	27	17	0.8	No	No	No	No
Group-A	Priyanka	2020/10/005370	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	218				No	No	None	0.5	1.6	13	0.5	12	1.7	30.3	19	19	0.2	No	No	No	No
Group-A	Rashmi	2020/12/001058	30	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	720	PPH	Yes	No	Yes	No	None	1.8	4.7	14	0.7	11	1.3	22.6	27	13	0.5	No	No	No	No
Group-A	Hansa	2021/01/022448	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	20				No	No	None	0.1	0.3	10	0.5	17	1.3	32.4	40	19	0.5	No	No	No	No
Group-A	Ishrat	2020/10/003643	29	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.7	0.9	15	0.6	17	1.3	28.8	24	8	0.4	No	No	No	No
Group-A	Madhvi	2020/08/001211	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	50				No	No	None	0.1	0.1	10	0.6	16	1.2	29.3	14	8	0.4	No	No	No	No
Group-A	Sangeeta	2020/06/002257	29	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	112				No	No	None	0.2	0.6	10	0.6	16	1.2	35.7	23	8.2	0.6	No	No	No	No
Group-A	Prem	2020/09/001655	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	106				No	No	None	0.3	1.2	24	0.7	13	1.2	28.6	25	9	0.7	No	No	No	No
Group-A	Sandhya	2020/10/002071	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	350				No	No	None	0.4	0.6	19	0.6	16	1.2	30.6	21	8	0.3	No	No	No	No
Group-A	Guddi	2020/02/011260	32	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	1200	Severe PPH	Yes	No	Yes	No	None	2.6	7.2	11	0.5	14	1.2	56.5	34	16	0.6	Yes	No	Yes	No
Group-A	Kina	2020/09/011108	18	Primi gravida	No	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	478				No	No	None	1	7.1	16	0.7	16	1.2	28.1	213	211	1.3	No	No	No	No
Group-A	Jolly	2020/10/004457	25	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	354				No	No	None	0.5	3	11	1	16	1.2	31.2	43	16	0.5	No	No	No	No
Group-A	Jyoti	2020/12/000737	25	Primi gravida	No	Yes	No	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	220				No	No	None	0.4	1.4	18	0.8	15	1.2	30.5	27	12	0.3	No	No	No	No
Group-A	Savita	2021/01/020432	29	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	0.9	1	16	0.5	15	1.1	32.7	30	10	0.5	No	No	No	No
Group-A	Mannat	2020/12/008940	26	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	Vaginal Wall Tear	380				No	No	None	0.6	3	12	0.7	14	1.1	32.6	64	68	0.7	No	No	No	No
Group-A	Sunita	2020/09/009803	19	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	Cervical Tear	680	PPH	Yes	Yes	Yes	No	None	1.3	4.2	17	0.6	14	1.1	28.4	26	11	0.3	No	No	No	No
Group-A	Shanti	2021/04/014133	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	292				No	No	None	0.6	1.3	12	0.6	15	1.1	30.5	33	32	0.5	No	No	No	No
Group-A	Ritika	2020/12/010110	36	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	470				No	No	None	1.4	1.9	15	0.7	15	1.1	34.1	23	12	0.8	No	No	No	No
Group-A	Manju	2020/09/004234	29	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	180				No	No	None	0.3	1	26	0.7	15	1.1	25	28	16	0.5	No	No	No	No
Group-A	Guddi devi	2018/03/002090	32	Multi gravida	No	Yes	No	No	No	No	No	No	No	Yes	No	No	None	No	Yes	1st degree	None	None	134				No	No	None	0.3	0.5	17	0.7	15	1.1	32.9	22	9	0.5	No	No	No	No
Group-A	Kiran	2017/05/017025	33	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	483				No	No	None	0.9	3.1	13	0.7	15	1.1	32.3	18	39	0.4	No	No	No	No
Group-A	Madina	2021/02/003952	28	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	860	PPH	Yes	No	Yes	No	None	1.3	5.1	13	0.6	15	1.1	33.3	31	14	0.2	No	No	Yes	No
Group-A	Poonam	2021/02/004668	23	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	496				No	No	None	1	2.3	19	0.6	15	1.1	31.2	21	7	0.4	No	No	No	No
Group-A	Guddi	2018/03/002090	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	240				No	No	None	0.6	1.2	12	0.5	13	1.1	30.7	20	11	0.2	No	No	No	No
Group-A	Kamla	2020/12/000495	27	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	410				No	No	None	0.6	1.9	14	0.6	10	1.1	18	28	17	0.3	No	No	No	No
Group-A	Suman	2021/04/009074	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	800	PPH	No	Yes	Yes	No	None	1.5	4.7	23	0.7	14	1.1	29.9	24	17	0.2	No	No	No	No
Group-A	Ashrulekha	2020/09/008244	31	Multi gravida	No	No	No	Yes	No	No	No	No	No	No	No	No	None	No	No	None	None	None	122				No	No	None	0.4	2.3	13	0.6	15	1.1	27.3	29	21	0.7	No	No	No	No
Group-A	Mamta	2021/03/006325	28	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	Yes	Vaccume	No	No	None	None	None	481				No	No	None	0.9	2.6	8	0.5	15	1.1	33	31	6.9	0.1	No	No	No	No
Group-A	Pooja	2019/10/007649	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	352				No	No	None	0.7	1	9	0.6	14	1.1	29.8	23	11	0.6	No	No	No	No
Group-A	Dhapu	2020/12/009933	29	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	460				Yes	No	None	0.9	2.8	14	0.6	13	1.1	41.5	22	8	0.6	No	No	No	No
Group-A	Manisha	2021/02/009781	19	Primi gravida	No	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	360				No	No	None	0.7	2.5	19	0.6	14	1.1	31.2	27	9	0.6	No	No	No	No
Group-A	Poonam	2021/05/010186	27	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	300				No	No	None	0.7	4	26	0.6	14	1.1	30.4	18	19	0.3	No	No	No	No
Group-A	Mamta	2021/05/006512	22	Multi gravida	No	No	Yes	Yes	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	80				No	No	None	0.2	0.6	12	0.6	14	1.1	25	18	14	0.5	No	No	No	No
Group-A	Nirma	2021/06/013383	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	608	PPH	Yes	No	Yes	No	None	1.9	4	17	0.7	14	1.1	29	30	13	0.5	No	No	No	No
Group-A	Suman	2020/12/009512	24	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	382				No	No	None	0.7	2.3	15	0.6	14	1.1	34.7	25	11	0.5	No	No	No	No
Group-A	Puja	2019/05/020808	30	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	370				No	No	None	0.7	1.2	18	0.6	14	1.1	31.7	28	15	0.6	No	No	No	No
Group-A	Jethu	2021/07/001765	28	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	100				No	No	None	0.2	1.7	32	0.7	11	1.1	24.6	18	8	0.5	No	No	No	No
Group-A	Munni	2020/12/009071	32	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	700	PPH	Yes	No	Yes	No	None	1.3	4.7	20	0.7	14	1.1	33.6	21	11	0.4	No	No	No	No
Group-A	Parvati	2021/04/000287	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	456				No	No	None	0.6	3.3	11	1	11	1.1	22.7	28	11	0.6	No	No	No	No
Group-A	Bindu	2021/02/006596	26	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.7	2.6	16	0.6	14	1.1	29.3	22	10	0.4	No	No	No	No
Group-A	Khushbu	2021/03/000799	32	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	294				No	No	None	0.5	1.9	12	0.7	12	1.1	32.9	26	14	0.5	No	No	No	No
Group-A	Anjana	2018/01/028471	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	Yes	Vaccume	No	No	None	None	None	200				No	No	None	0.4	2.5	15	0.7	14	1.1	36.1	23	13	0.3	No	No	No	No
Group-A	Divya	2021/04/0036																																									

Group-A	Preeti	2020/12/007856	23	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.2	2.1	19	0.6	12	1	22.8	56	65	0.3	No	No	No	No
Group-A	Sumitra	2019/01/021699	22	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	380				No	No	None	0.4	0.9	10	0.6	14	1	33.4	61	22	0.4	No	No	No	No
Group-A	Sheetal	2020/12/009624	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	206				No	No	None	0.3	1.2	21	0.6	12	1	30.1	17	5	0.6	No	No	No	No
Group-A	Meena	2021/04/004085	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	280				No	No	None	0.5	1.6	18	0.8	11	1	26.7	18	10	0.4	No	No	No	No
Group-A	Chandini	2021/05/005929	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	428				No	No	None	0.8	2.4	14	0.7	14	1	33.3	47	16	0.3	No	No	No	No
Group-A	Lalita	2021/08/002886	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.4	1.3	10	0.4	11	1	28.6	18	10	0.5	No	No	No	No
Group-A	sangita	2021/08/002948	30	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	450				No	No	None	0.8	2.6	11	0.6	14	1	30.1	49	21	0.3	No	No	No	No
Group-A	Mamta	2021/03/010612	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	150				No	No	None	0.3	1.5	16	0.4	17	1	23.1	18	12	0.3	No	No	No	No
Group-A	Suraj	2021/07/004589	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	30				No	No	None	0.3	0.7	22	0.7	9.8	1	28.2	43	13	0.2	No	No	No	No
Group-A	Seema	2021/06/006022	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	250				No	No	None	0.5	1.4	9	0.5	12	1	22.8	31	10	0.6	No	No	No	No
Group-A	Mamta	2017/08/015573	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	Vaginal Wall Tear	650	PPH	No	Yes	Yes	No	None	1.6	4	8	0.6	14	1	31.8	27	12	0.5	No	No	No	No
Group-A	Khushboo	2016/01/015319	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	172				No	No	None	0.3	1.3	20	0.6	14	1	29.6	21	15	0.5	No	No	No	No
Group-A	Anjali	2021/03/002231	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	50				No	No	None	0.2	0.3	17	0.7	12	1	25.9	17	10	0.4	No	No	No	No
Group-A	Sanju	2020/12/008297	25	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	172				No	No	None	0.4	2.4	14	0.6	12	1	18.4	25	14	0.2	No	No	No	No
Group-A	Bablu	2018/09/013675	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	204				No	No	None	0.2	0.6	11	0.8	11	1	22	18	12	0.3	No	No	No	No
Group-A	Deepali	2021/01/020501	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.6	1.8	10	0.9	12	1	22	32	18	0.7	No	No	No	No
Group-A	Chunni	2020/12/003994	36	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.5	1.5	15	0.6	12	1	22.4	23	14	0.3	No	No	No	No
Group-A	Poonam	2021/07/000801	25	Primi gravida	No	No	No	No	No	No	No	No	Yes	No	No	Yes	Vaccume	Yes	No	None	None	450				Yes	No	None	0.8	3.5	10	0.5	12	1	19	23	8	0.5	No	No	No	No
Group-A	Sakshi	2021/05/004838	22	Primi gravida	No	No	No	No	No	No	No	No	Yes	No	No	No	None	Yes	No	None	None	346				No	No	None	0.7	3.2	12	0.6	12	1	22	35	12	0.5	No	No	No	No
Group-A	Nirma	2021/08/006846	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	460				No	No	None	0.7	2.1	22	0.9	14	1	29.1	38	38	0.3	No	No	No	No
Group-A	Guddi	2021/02/001279	28	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	None	Yes	No	None	None	296				No	No	None	0.5	1.7	14	0.7	14	1	26.8	23	13	0.2	No	No	No	No
Group-A	Nikisha	2021/07/004911	27	Multi gravida	No	No	No	No	No	No	No	No	Yes	No	No	None	No	Yes	2nd degree	None	None	100				No	No	None	0.2	0.6	11	0.6	13	1	19.5	28	30	0.3	No	No	No	No
Group-A	Pooja	2021/02/006568	18	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	257				No	No	None	0.6	1.9	11	0.7	12	1	19.8	37	21	0.7	No	No	No	No
Group-A	Mamta	2021/06/008672	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.3	0.8	18	0.2	12	1	23.8	18	11	0.2	No	No	No	No
Group-A	Kavita	2021/04/013784	24	Multi gravida	No	No	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	380				No	No	None	0.6	1.8	12	0.9	13	1	22.6	12	10	0.4	No	No	No	No
Group-A	Seema	2021/06/003972	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	250				No	No	None	0.4	1.2	12	0.5	12	1	22	23	20	0.7	No	No	No	No
Group-A	Lavina	2021/04/014321	25	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.4	1.1	11	0.9	13	1	22.6	12	10	0.4	No	No	No	No
Group-A	Nisha	2021/05/008958	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	86				No	No	None	0.2	0.4	12	0.9	10	1	28.2	8	12	0.6	No	No	No	No
Group-A	Hemlata	2020/12/007665	26	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	134				No	No	None	0.3	1	11	0.6	12	1	29.6	23	18	0.6	No	No	No	No
Group-A	Jamna	2018/02/001576	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	276				No	No	None	0.6	1.1	14	0.5	13	1	30.5	23	20	0.2	No	No	No	No
Group-A	Bantu	2021/07/017003	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	180				No	No	None	0.4	2.4	12	0.6	12	1	28.6	28	10	0.6	No	No	No	No
Group-A	Monika	2021/02/002910	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.5	1.8	7	0.5	12	1	24.1	20	15	0.3	No	No	No	No
Group-A	Minaksji	2018/02/006507	32	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	460				No	No	None	0.5	1.8	32	0.7	12	1	19.2	30	20	0.6	No	No	No	No
Group-A	Geeta	2021/08/014164	33	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	24				No	No	None	0.2	0.5	17	0.8	10	1	28.4	76	118	0.7	No	No	No	No
Group-A	Bhagvashri	2021/08/005545	34	Multi gravida	No	No	No	No	Yes	Yes	No	No	No	Yes	No	None	Yes	No	None	None	None	350				No	No	None	0.4	1.4	13	0.6	13	1	23.7	31	20	0.8	No	No	No	No
Group-A	Reena	2019/02/003945	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	950	PPH	Yes	No	Yes	No	None	1.6	5.3	28	0.7	13	1	26.4	18	10	0.2	No	No	No	No
Group-A	Jeevanshi	2021/01/014156	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	820	PPH	No	Yes	Yes	No	None	1.6	5.5	15	0.7	13	1	23.2	23	10	0.6	No	No	No	No
Group-A	Neetu	2021/02/009166	21	Primi gravida	No	No	Yes	No	No	No	Yes	No	No	No	No	None	Yes	No	None	None	None	230				No	No	None	0.3	0.6	11	0.8	10	1	23.6	18	17	0.2	No	No	No	No
Group-A	Soniya	2020/03/003563	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.4	1.4	13	0.9	12	1	28.2	29	11	0.4	No	No	No	No
Group-A	Dhapu	2021/08/013942	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	380				No	No	None	0.5	1.5	19	0.6	13	1	28.5	29	17	0.5	No	No	No	No
Group-A	Kishori	2021/02/002318	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	120				No	No	None	0.3	0.8	10	0.5	13	1	32.3	21	9	0.7	No	No	No	No
Group-A	Guddi	2021/08/008051	26	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	780	PPH	Yes	No	Yes	No	None	1.4	3.8	11	0.5	9.8	1	28	178	216	0.8	No	No	No	No
Group-A	Neetu	2021/06/006147	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	296				No	No	None	0.5	2.4	18	0.7	13	1	29.2	24	27	0.5	No	No	No	No
Group-A	Soni	2021/02/001525	26	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	222				No	No	None	0.6	1.4	16	0.6	13	1	29.3	95	95	0.3	No	No	No	No
Group-A	Priya	2021/01/014630	28	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	386				No	No	None	0.7	1.7	18	0.8	13	1	30.4	24	9	0.2	No	No	No	No
Group-A	Shanti	20																																								

Group-A	Laxmi	2021/09/010512	29	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	404				No	No	None	0.9	2.7	21	0.8	13	1	27.8	22	17	0.4	No	No	No	No
Group-A	Mona	2021/03/015142	20	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	380				No	No	None	0.7	1.4	16	0.5	13	1	29	38	12	0.7	No	No	No	No
Group-A	Mamta	2021/03/03648	27	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.3	0.9	13	0.6	11	1	34.1	26	12	0.7	No	No	No	No
Group-A	Soomn	2021/10/001009	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.6	2.8	19	0.5	12	1	26	56	49	0.5	No	No	No	No
Group-A	Sita	2021/06/008865	32	Primi gravida	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	1600	Severe PPH	Yes	No	Yes	No	None	2.8	8.8	18	0.7	12	1	21	36	14	0.4	No	No	Yes	No
Group-A	Soni	2021/03/008974	20	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	260				Yes	No	None	0.3	3.3	19	0.3	12	1	24.2	25	13	0.5	No	No	No	No
Group-A	Monika	2021/07/014145	20	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	456				No	No	None	0.7	3.7	21	0.8	13	1	22.7	22	17	0.4	No	No	No	No
Group-A	Kanta	2021/09/013611	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	0.6	1.2	20	0.7	13	1	32.9	37	17	0.7	Yes	No	No	No
Group-A	Ramdulari	2021/08/012554	24	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	310				No	No	None	0.4	1.6	15	0.6	12	1	18	18	12	1	No	No	No	No
Group-A	Sunita	2021/03/000862	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	360				No	No	None	1	2.3	10	0.6	10	1	22.7	18	10	0.3	No	No	No	No
Group-A	Dr. Jyoti	2021/01/014124	26	Primi gravida	No	Yes	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	347				No	No	None	0.8	2.6	11	0.7	13	1	27.1	30	17	0.6	No	No	No	No
Group-A	Darsha	2021/10/002392	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.6	1.4	24	0.9	11	1	22.2	18	20	0.7	No	No	No	No
Group-A	Sejal	2020/07/007482	28	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	354				No	No	None	0.4	1.2	18	0.7	12	1	21.9	41	16	1.3	No	No	No	No
Group-A	Kavita	2021/09/011848	26	Multi gravida	No	No	Yes	Yes	No	No	No	No	No	No	No	Yes	Vaccume	No	No	None	None	420	None			No	No	None	0.9	2.5	19	0.6	13	1	28.6	24	9.5	0.2	No	No	No	No
Group-A	Pinky	2021/04/062854	30	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	480				No	No	None	0.8	2.6	16	0.7	12	1	27.4	65	69	1	No	No	No	No
Group-A	Tinu	2021/02/007342	20	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	50				No	No	None	0.1	1	10	0.5	13	1	30.5	25	15	0.4	No	No	No	No
Group-A	Deepa	2021/03/000903	23	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	386				No	No	None	0.7	2.4	13	0.8	12	1	30	16	15	0.4	No	No	No	No
Group-A	Usha	2021/07/001554	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.3	1	13	0.6	13	1	29.1	12	6.7	0.4	No	No	No	No
Group-A	Nisha	2021/07/015964	34	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	318				No	No	None	0.6	1.8	11	0.6	12	1	27.9	46	18	0.8	No	No	No	No
Group-A	Kanika	2021/06/010389	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	608	PPH	Yes	No	Yes	No	None	0.9	4.3	17	0.7	13	1	29.8	25	18	0.6	No	No	No	No
Group-A	Deepika	2021/03/005036	22	Primi gravida	No	No	No	No	No	No	Yes	No	No	No	No	None	None	Yes	No	None	None	308				No	No	None	0.8	2.4	11	0.9	12	1	25.5	29	14	0.5	No	No	No	No
Group-A	Kajal	2021/09/009328	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	310				No	No	None	0.6	1.6	11	0.7	12	1	25	24	9	0.2	No	No	No	No
Group-A	Seema	2021/04/006779	29	Primi gravida	No	No	No	No	No	No	No	Yes	No	No	No	None	No	Yes	None	None	None	355				No	No	None	0.9	1.6	14	0.7	13	1	27	134	176	1.3	No	No	No	No
Group-A	Amba	2019/06/012645	30	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	403				No	No	None	0.6	2.7	15	0.6	13	1	26.5	17	5	0.3	No	No	No	No
Group-A	Gita	2021/08/013865	30	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.4	1.4	25	0.9	12	1	28.8	26	9	0.5	No	No	No	No
Group-A	Manju	2021/10/019400	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	Yes	1st degree	None	None	465				No	No	None	0.6	1.8	15	0.6	13	0.9	30.6	21	11	0.3	No	No	No	No
Group-A	Sadiya	2021/07/004545	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	1.2	2.4	12	0.6	11	0.9	28.2	24	16	0.4	No	No	No	No
Group-A	Kusum	2021/04/002445	23	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	Yes	No	None	No	No	None	None	None	250				No	No	None	0.3	0.3	17	0.7	11	0.9	21.1	20	9.9	0.3	No	No	No	No
Group-A	Divya	2021/10/002957	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	478				No	No	None	0.9	2.9	13	0.5	11	0.9	25.9	27	6	0.5	No	No	No	No
Group-A	Prem	2021/04/002573	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	380				No	No	None	0.7	3.2	14	0.6	12	0.9	23.5	113	146	0.5	No	No	No	No
Group-A	Sameena	2021/09/013708	34	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	490				No	No	None	1	4.8	20	0.6	11	0.9	35.1	14	9	0.3	No	No	No	No
Group-A	Anjali	2021/04/009317	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	700	PPH	Yes	No	Yes	No	None	1.7	5.6	15	0.6	11	0.9	23.9	36	17	0.9	No	Yes	No	No
Group-A	Sunita	2021/10/003216	23	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	280				No	No	None	0.7	2	21	0.8	11	0.9	24.6	30	16	1	No	No	No	No
Group-A	Pushpa	2021/07/005824	25	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.5	1.8	11	0.6	11	0.9	21.2	26	11	0.4	No	No	No	No
Group-A	Mona	2021/01/022522	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	220				No	No	None	0.5	1	26	1	11	0.9	19.9	11	6	0.2	No	No	No	No
Group-A	Bhavana	2021/09/001461	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	0.7	2.3	30	0.7	11	0.9	20.7	34	28	0.4	No	No	No	No
Group-A	Vimla	2021/08/008865	25	Multi gravida	No	No	Yes	No	No	No	No	No	No	Yes	No	None	No	Yes	1st degree	None	None	80				No	No	None	0.3	1	18	0.7	11	0.9	22.7	18	12	1.2	No	No	No	No
Group-A	Minakshi	2021/03/014933	33	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	700	PPH	Yes	No	Yes	No	None	1.4	3.2	30	0.5	11	0.9	22.4	30	20	0.4	No	No	No	No
Group-A	Neha	2021/06/003716	20	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	312				No	No	None	0.7	2.2	11	0.4	12	0.9	29.2	30	12	0.8	No	No	No	No
Group-A	Manisa	2021/09/010459	25	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	No	No	None	None	None	388				No	No	None	0.6	1.5	11	0.6	11	0.9	22.2	22	11	0.3	No	No	No	No
Group-A	Sangeeta	2021/11/010292	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.9	2.1	20	0.8	11	0.9	19.2	30	14	0.9	No	No	No	No
Group-A	Santosh	2021/05/008266	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	1380				Yes	No	None	2.8	7.4	19	0.6	13	0.9	26.7	42	12	0.4	Yes	Yes	No	No
Group-A	Sapna	2021/01/020202	40	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	800	PPH	Yes	No	Yes	No	None	1.2	6.2	12	0.7	13	0.9	31.6	22	11	0.3	No	No	No	No
Group-A	Tinkle	2021/09/005478	21	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	322				No	No	None	0.7	2	8	0.6	12	0.9	29.2	30	12	0.8	No	No	No	No
Group-A	Aarushi	2021/06/013159	21	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	300				No	No	None	0.8	2.9	11	0.6	11	0.9	29.9	138	139	0.6				

Group-A	Priyanka	2021/12/004890	31	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	None	None	545	PPH	Yes	No	Yes	No	None	1.7	3.3	7	0.4	11	0.9	23.5	19	10	0.3	No	No	No	No	
Group-A	Seema	2022/02/012212	19	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	380			No	No	None	0.7	2.1	14	0.7	12	0.9	27.8	26	13	0.8	No	No	No	No	
Group-A	Lalita	2021/03/012086	20	Primi gravida	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	None	Yes	No	None	226			No	No	None	0.4	2.1	15	0.7	13	0.9	30.6	39	21	0.4	No	No	No	No	
Group-A	Bhagoti	2021/06/000823	21	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	430			No	No	None	0.6	2.8	16	0.7	13	0.9	32.1	36	21	0.5	No	No	No	No	
Group-A	Pooja	2022/05/008640	21	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	276			No	No	None	0.3	0.8	9	0.5	14	0.9	25.7	20	18	0.1	No	No	No	No	
Group-A	Puja	2022/05/007499	21	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	250			No	No	None	0.1	0.2	11	0.5	13	0.9	31.3	24	11	0.8	No	No	No	No	
Group-A	Suman	2022/03/000316	23	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	380			No	No	None	0.7	2	16	0.5	12	0.9	33	23	27	0.2	No	No	No	No	
Group-A	Sarla	2020/10/001916	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	330			No	No	None	0.6	1.8	35	0.7	12	0.9	22.7	28	8	0.2	No	No	No	No	
Group-A	Suman	2021/06/010866	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	250			No	No	None	0.3	1.2	12	0.5	11	0.9	19.2	15	12	0.3	No	No	No	No	
Group-A	Mamta	2022/05/015111	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	540	PPH	Yes	No	Yes	No	None	1.2	3.8	15	0.6	12	0.9	25.2	29	12	0.3	No	No	No	No
Group-A	Prachi	2022/01/030057	26	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	850	PPH	Yes	No	Yes	No	None	1.2	6	12	0.6	11	0.9	23	22	15	0.5	No	No	No	No
Group-A	Krishna	2022/04/004296	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	800	PPH	Yes	No	Yes	No	None	1.7	6.1	32	0.9	11	0.9	18.3	24	14	0.7	No	No	No	No
Group-A	Nalini	2021/11/005930	26	Multi gravida	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	120			No	No	None	0.2	0.6	24	0.7	12	0.9	19.7	78	90	0.2	No	No	No	No	
Group-A	Shardha	2022/05/013124	37	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	20			No	No	None	0.2	0.2	16	0.5	11	0.9	24.3	21	11	0.4	No	No	No	No	
Group-A	Shweta	2022/04/003983	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	400			No	No	None	0.8	2.4	11	0.6	12	0.9	27.3	16	14	0.3	No	No	No	No	
Group-A	Shradha	2022/05/005834	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	333			No	No	None	0.5	2.1	16	0.6	11	0.9	26.3	29	18	1	No	No	No	No	
Group-A	Mamta	2022/01/032358	29	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	None	Yes	No	None	202			No	No	None	0.7	2.2	10	0.5	12	0.9	29	48	39	0.3	No	No	No	No	
Group-A	Lavina	2021/12/004413	24	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	350			No	No	None	0.5	1.8	12	0.5	11	0.9	23.5	22	11	0.4	No	No	No	No	
Group-A	Rupo	2019/09/005011	29	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	850	PPH	Yes	No	No	No	None	1.2	6	33	1.1	11	0.9	23	22	15	0.5	No	No	No	No
Group-A	Mamta	2022/01/026011	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	430			No	No	None	0.7	2.4	13	0.6	11	0.9	22.8	20	14	0.3	No	No	No	No	
Group-A	Niku	2021/03/008488	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	400			No	No	None	0.6	1.8	12	0.8	11	0.9	25	17	6	0.3	No	No	No	No	
Group-A	Manisha	2020/09/002448	23	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	368			No	No	None	0.7	2.9	10	0.6	10	0.9	24.2	18	6	0.2	No	No	No	No	
Group-A	Mona	2021/10/012702	33	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	222			No	No	None	0.5	0.5	10	0.5	11	0.9	22.6	17	13	0.4	No	No	No	No	
Group-A	Sadhana	2021/10/008648	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	200			No	No	None	0.7	3	16	0.6	11	0.9	32.7	44	22	0.2	No	No	No	No	
Group-A	Dixha	2022/01/035531	36	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	457			No	No	None	0.9	2.7	18	0.6	11	0.9	24.1	21	18	0.5	No	No	No	No	
Group-A	Payal	2021/12/011694	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	150	Seek Medical Intervention			No	No	None	0.4	1.2	16	0.5	11	0.9	26.3	18	13	0.3	No	No	No	No
Group-A	Kanta	2021/11/008768	24	Multi gravida	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	400			No	No	None	0.6	1.8	20	0.8	12	0.9	26.2	17	9	0.5	Yes	No	No	No	
Group-A	Sonu	2021/12/001574	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	312			No	No	None	0.7	2.1	9	0.5	11	0.9	24.3	21	11	0.8	No	No	No	No	
Group-A	Manju	2022/03/010654	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	270			No	No	None	0.5	1	13	0.6	11	0.9	26.7	24	11	0.2	No	No	No	No	
Group-A	Shanti	2022/05/003388	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	42			No	No	None	0.3	1	18	0.8	12	0.9	21.2	20	15	0.3	No	No	No	No	
Group-A	Munesh	2022/02/014297	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	250			No	No	None	0.5	2.5	16	0.7	11	0.9	27.8	19	10	0.4	No	No	No	No	
Group-A	Sanjana	2021/12/007222	34	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	80			No	No	None	0.2	0.6	15	0.6	11	0.9	26.2	23	15	0.3	No	No	No	No	
Group-A	Arti	2020/11/007191	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	330			No	No	None	0.5	2.2	15	0.5	11	0.9	29.1	20	23	0.3	No	No	No	No		
Group-A	Puja	2022/03/016184	24	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	490			Yes	No	None	1	7	24	0.6	11	0.9	20	24	21	0.8	No	No	No	No	
Group-A	Geeta	2022/02/010095	20	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	50			No	No	None	0.1	0.3	15	0.5	12	0.9	26.2	18	12	0.3	No	No	No	No	
Group-A	Jamilo	2022/05/016512	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	300			No	No	None	0.8	1.6	14	0.6	11	0.9	22.9	41	21	0.3	No	No	No	No	
Group-A	Yasoda	2021/12/003289	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	294			No	No	None	0.5	1.3	24	1	11	0.9	24.5	50	12	0.4	No	No	No	No	
Group-A	Rachika	2022/03/019401	25	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	450			No	No	None	0.9	2.8	16	0.6	11	0.9	20.7	37	38	0.3	No	No	No	No	
Group-A	Leela	2018/08/011260	28	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	300			No	No	None	0.8	2.8	16	0.6	11	0.9	22.7	21	14	0.5	No	No	No	No	
Group-A	Bhagwani	2018/07/013015	31	Primi gravida	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	None	Yes	No	None	320	Seek Medical Intervention			No	No	None	0.9	2.1	10	0.5	11	0.9	24.3	20	11	0.8	No	No	No	No
Group-A	Megha	2022/03/007065	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	360			No	No	None	0.5	2.7	11	0.6	11	0.9	33.9	25	13	0.5	No	No	No	No	
Group-A	Mamta	2022/04/007323	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	900	PPH	Yes	No	Yes	No	None	1.3	3.9	13	0.6	11	0.9	24.9	18	20	9	No	No	No	No
Group-A	Sonal	2022/03/002360	32	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	1200	Severe PPH	Yes	No	Yes	No	None	2.5	7.5	12	0.6	12	0.9	36	15	16	0.3	No	No	No	No
Group-A	Monika	2021/11/015306	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	349			No	No	None	0.7	2.7	15	0.7	11	0.9	23.2	18	11	0.4	No	No	No	No	
Group-A	Vimla	2021/04/003784	24	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	900	PPH	Yes	No	Yes	No	None	1.3	3.9	13	0.										

Group-A	Suwa	2022/04/016084	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	No	No	None	None	None	94				No	No	None	0.1	0.4	19	0.6	12	0.4	27.4	16	11	0.2	No	No	Yes	No
Group-A	Priya	2022/05/005793	21	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	0.5	1.8	14	0.6	15	0.3	22.6	30	13	0.6	No	No	No	No
Group-B	Dipika	2021/03/010975	26	Multi gravida	No	No	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	280				No	No	None	0.4	1.4	14	0.6	11	1	26.7	16	11	1.8	No	No	No	No
Group-B	Sangeeta	2020/08/000606	28	Multi gravida	No	No	No	No	Yes	No	No	No	No	No	No	None	Yes	No	None	None	None	305				No	No	None	0.5	1.5	14	0.6	16	4.8	21.7	34	24	0.7	No	No	No	No
Group-B	Santosh	2020/10/005620	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	180				No	No	None	0.4	1.3	11	0.6	20	1.5	40.4	39	11	0.2	No	No	No	No
Group-B	Manjulata	2021/01/012383	20	Multi gravida	No	No	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	1100	Severe PPH	Yes	No	Yes	Yes	PRBC	2.8	5.7	17	0.7	18	1.3	22	26	7	0.5	No	No	No	No
Group-B	Misbah	2020/09/003529	23	Multi gravida	No	Yes	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	450				No	No	None	0.9	4.5	14	0.7	17	1.3	29.4	39	27	0.4	No	No	No	No
Group-B	Manju	2020/08/006160	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	360				No	No	None	0.7	2.6	19	0.7	16	1.3	59.8	22	9	0.4	No	No	No	No
Group-B	Hema	2019/01/022165	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	280				No	No	None	0.5	1.5	12	0.6	20	1.3	28.1	41	29	0.3	No	No	No	No
Group-B	Aruna	2021/02/011702	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	190				No	No	None	0.3	0.6	11	0.5	16	1.3	67.1	23	10	0.4	No	No	No	No
Group-B	Suraj	2021/06/007576	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	70				No	No	None	0.3	0.5	14	0.7	15	1.2	59	43	23	0.3	No	No	No	No
Group-B	Lado	2021/01/016699	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	246				No	No	None	0.3	0.6	21	0.6	16	1.2	22	12	23	0.6	No	No	No	No
Group-B	Mamta	2021/02/006041	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	70				No	No	None	0.2	0.6	22	0.8	10	1.2	23	25	26	0.2	No	No	No	No
Group-B	Seema	2020/12/005267	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	422				No	No	None	0.7	2.1	31	1.2	11	1.2	29.1	36	29	0.7	No	No	No	No
Group-B	Trikshita	2021/01/020617	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	420				No	No	None	0.8	2.8	7	0.9	12	1.2	37	42	32	0.8	No	No	No	No
Group-B	kaivita	2021/04/003994	28	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	488				No	No	None	0.8	2.7	14	0.7	12	1.2	30.9	30	7	0.6	No	No	No	No
Group-B	Sarita	2018/09/000881	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	80				No	No	None	0.2	0.4	15	0.6	16	1.2	30.8	25	15	0.8	No	No	No	No
Group-B	Lata	2021/01/012879	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	300				Yes	No	None	0.5	1.5	10	0.6	16	1.2	15.6	39	12	0.3	No	No	No	No
Group-B	Saraswati	2020/12/002976	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	338				No	No	None	0.6	1.3	14	0.7	16	1.2	32.7	32	18	0.5	No	No	No	No
Group-B	Manju lata	2021/02/008448	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	190				No	No	None	0.4	2.1	12	0.7	15	1.2	34.5	28	12	1	No	No	No	No
Group-B	Priyanka	2020/10/008499	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	352				No	No	None	0.3	1.4	14	0.6	15	1.2	31.6	29	21	0.6	No	No	No	No
Group-B	Bharti	2021/03/013146	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	275				No	No	None	0.6	1.8	13	0.7	14	1.1	38	15	10	0.5	No	No	No	No
Group-B	Rinku	2021/03/003829	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	300				No	No	None	0.4	1.9	14	0.6	14	1.1	122.7	25	11	0.4	No	No	No	No
Group-B	Nisha	2021/03/012800	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	200				No	No	None	0.3	1	21	0.6	15	1.1	39	29	21	0.9	No	No	No	No
Group-B	Leela	2021/05/000378	22	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	320				No	No	None	0.6	1.4	15	0.6	11	1.1	70.2	28	17	0.7	No	No	No	No
Group-B	Vinita	2014/05/000400	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	20				No	No	None	0.1	0.2	24	0.6	15	1.1	33.2	261	385	0.5	No	No	No	No
Group-B	Ritu	2021/01/016921	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	120				No	No	None	0.3	0.4	13	0.7	14	1.1	24.1	53	21	0.7	No	No	No	No
Group-B	Savita	2021/1/016706	21	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	1800	Severe PPH	Yes	No	Yes	Yes	PRBC	4.1	14	21	0.7	15	1.1	30.4	33	15	0.4	No	No	Yes	No
Group-B	Reena	2020/10/003719	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	550				No	No	None	1	3.7	11	0.7	13	1.1	19.5	46	30	0.4	No	No	No	No
Group-B	Manju	2021/01/018688	30	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	320				No	No	None	0.6	1.8	14	0.6	10	1.1	21	28	15	0.2	No	No	No	No
Group-B	Sanju	2021/05/006709	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	128				No	No	None	0.5	0.8	13	0.6	15	1.1	40.4	21	10	0.3	No	No	No	No
Group-B	Santosh	2021/03/000666	24	Multi gravida	No	No	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	1180	Severe PPH	Yes	No	Yes	No	None	2.4	8.4	11	0.6	15	1.1	32	23	12	0.2	No	No	No	No
Group-B	Divya	2021/01/014902	28	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	453				No	No	None	0.5	3	15	0.7	11	1.1	23.6	12	8.3	0.4	No	No	No	No
Group-B	Surata	2021/03/007730	29	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	363				No	No	None	0.7	2	14	0.6	14	1.1	30.8	25	7	0.6	No	No	No	No
Group-B	Gudiya	2021/02/005776	22	Multi gravida	No	No	No	No	No	No	No	No	Yes	No	No	None	No	Yes	1st degree	None	None	150				No	No	None	0.5	1.2	14	0.6	14	1.1	26.6	114	75	1.5	No	No	No	No
Group-B	Sumitra	2020/12/007628	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	860	PPH	Yes	No	Yes	No	None	2.5	5.9	17	0.7	14	1.1	27.3	49	14	0.2	No	No	No	No
Group-B	Shilpa	2020/12/003261	22	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	520	PPH	Yes	No	Yes	No	None	1.1	3.3	18	0.5	14	1.1	33.6	31	25	0.3	No	No	No	No
Group-B	Komal	2021/03/006753	25	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	No	No	None	None	None	1100	Severe PPH	No	Yes	Yes	No	None	1.3	3.8	10	0.7	12	1.1	27.8	30	19	0.6	No	No	No	No
Group-B	Pooja	2021/01/018849	20	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	0.5	1.6	10	0.5	14	1.1	28.1	20	11	0.3	No	No	No	No
Group-B	Mamta	2020/07/001340	21	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	477				No	No	None	0.9	2.7	17	0.8	14	1.1	22.7	22	8	0.8	No	No	No	No
Group-B	Ganga	2021/02/008670	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	203				No	No	None	0.4	2.1	9	0.6	14	1.1	30.8	32	19	0.5	No	No	No	No
Group-B	Samu	2020/10/007868	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	None	None	None	50				No	No	None	0.2	0.8	21	0.9	9.8	1.1	23.7	18	12	0.7	No	No	No	No
Group-B	Kalpana	2021/03/006223	25	Primi gravida	No	Yes	No	No	No	Yes	No	No	No	No	Yes	Vaccume	No	No	None	None	None	744	PPH	Yes	No	Yes	No	None	1.4	2.4	15	0.6	14	1.1	28.7	24	13	0.3	No	No	No	No
Group-B	Honey	2021/01/016097	22	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	340				No	No	None	0.5	1.5	10	0.7	13	1.1	27.8	35	19	0.6	No	No	No	No
Group-B	Aachuki	2020/11/000841	28	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	290				No	No	None	0.6	2.2	23	0										

Group-B	Rosha	2021/08/007291	25	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	349				No	No	None	0.5	1.7	17	0.7	12	1	22.5	29	12	0.5	No	No	No	No
Group-B	Anita	2016/07/000175	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	180				No	No	None	0.3	1.6	24	0.7	12	1	28.2	29	32	0.9	No	No	No	No
Group-B	Dayal	2021/08/001466	29	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	Yes	None	None	None	236				No	No	None	0.6	2.3	22	0.6	11	1	22.2	32	11	0.4	No	No	No	No
Group-B	Kanchan	2021/06/006810	30	Primi gravida	Yes	No	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	900	PPH	Yes	No	Yes	No	None	2.5	7.8	9	0.5	12	1	19.9	20	11	0.3	No	No	No	No
Group-B	Chanda	2021/08/008569	28	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	280				No	No	None	0.6	0.3	15	0.9	14	1	23.3	16	13	0.3	No	No	No	No
Group-B	Saroj	2021/06/011208	28	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	602	PPH	Yes	No	Yes	No	None	1.2	3.8	32	0.9	12	1	20.6	31	8	0.3	No	No	No	No
Group-B	Aadesh	2021/04/009347	19	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	420				No	No	None	0.8	1.8	10	0.9	12	1	22.6	15	8	0.8	No	No	No	No
Group-B	Reema	2018/07/015676	20	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	342				No	No	None	0.3	1	11	0.6	14	1	22.7	23	11	0.5	No	No	No	No
Group-B	Neetu	2021/07/010049	20	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.5	1.8	12	0.7	10	1	18	22	18	0.3	No	No	No	No
Group-B	Manju	2021/07/010544	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	108				No	No	None	0.3	1	21	0.6	12	1	23.5	152	122	0.5	No	No	No	No
Group-B	Madhu	2021/05/001855	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.8	2.8	10	0.8	10	1	23.7	18	12	0.8	No	No	No	No
Group-B	Diksha	2021/07/008301	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	330				No	No	None	0.7	2.3	12	0.6	14	1	31.1	44	18	0.4	No	No	No	No
Group-B	Varsha	2021/04/007509	27	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	278				No	No	None	0.6	2.1	33	0.6	14	1	32	25	24	0.3	No	No	No	No
Group-B	Santosh	2021/03/006768	29	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	300				No	No	None	0.7	0.9	11	0.5	12	1	25.2	26	13	0.5	No	No	No	No
Group-B	Renu	2014/11/000131	32	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.7	3	31	0.7	13	1	30.2	10	6	0.2	No	No	No	No
Group-B	Sonia	2020/03/003563	32	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	Vaccume	Yes	No	None	None	None	1260	Severe PPH	Yes	No	Yes	No	None	2.2	6.5	21	0.6	11	1	24.4	55	68	0.2	No	No	Yes	No
Group-B	Mamta	2021/01/015302	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	100				No	No	None	0.2	0.8	12	0.6	10	1	22.6	18	18	0.7	No	No	No	No
Group-B	Neelam	2021/03/001369	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	356				No	No	None	0.7	2.1	7	0.6	13	1	29.8	26	15	0.3	No	No	No	No
Group-B	Payal	2021/08/015797	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	90				No	No	None	0.2	0.8	15	0.8	14	1	23.7	34	20	0.5	No	No	No	No
Group-B	Anuradha	2021/03/004122	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.4	1.2	12	0.6	12	1	27.3	23	15	0.3	No	No	No	No
Group-B	Suman	2021/02/011489	32	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	300				No	No	None	0.5	0.6	22	0.8	12	1	26.4	26	22	0.5	No	No	No	No
Group-B	Nidhi	2021/04/012107	30	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	172				No	No	None	0.3	1.2	25	0.6	13	1	29.2	30	33	0.9	No	No	No	No
Group-B	Anita	2021/01/016323	20	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	600	PPH	Yes	No	Yes	No	None	1.6	5.8	18	0.5	13	1	29.9	24	13	0.1	No	No	No	No
Group-B	Saroj	2018/05/012890	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	520	PPH	Yes	No	Yes	No	None	1.5	1.1	13	0.6	13	1	36.3	21	12	0.2	No	No	No	No
Group-B	Chandrakala	2021/06/010483	21	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	900	PPH	Yes	No	Yes	No	None	0.8	1.9	12	0.6	13	1	28.4	38	24	0.5	No	No	No	No
Group-B	Urmila	2021/01/014523	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	490				No	No	None	1	2.8	13	0.8	13	1	30.5	20	10	0.7	No	No	No	No
Group-B	Kritika	2021/09/010225	26	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	430				No	No	None	0.9	2.9	11	0.6	14	1	31.7	26	14	0.4	No	No	No	No
Group-B	Priyanka	2017/12/011522	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	290				No	No	None	0.6	1.8	22	0.6	13	1	26.4	18	10	0.2	No	No	No	No
Group-B	Kiran	2021/08/019353	25	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	250				Yes	No	None	0.4	1.8	8	0.5	13	1	31.1	20	10	0.7	No	No	No	No
Group-B	Suman	2021/05/008529	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	356				No	No	None	0.7	2.4	18	0.6	13	1	29.3	35	26	0.9	No	No	No	No
Group-B	Premolata	2021/03/000807	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	330				No	No	None	0.6	2.1	19	0.8	11	1	28.2	20	23	0.8	No	No	No	No
Group-B	Dimple	2021/01/020260	27	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	240				No	No	None	0.8	3.3	20	0.8	13	1	33.9	39	25	0.4	No	No	No	No
Group-B	Afsana	2021/03/009194	28	Multi gravida	No	No	No	No	Yes	No	No	No	No	No	No	None	Yes	No	None	None	None	336				No	No	None	0.4	2.6	31	0.9	11	1	21	10	19	0.7	No	No	No	No
Group-B	Kavita	2021/06/010562	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	440				No	No	None	0.7	2.2	14	0.4	12	1	23.8	21	15	0.4	No	No	No	No
Group-B	Poonam	2021/09/005132	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	420				No	No	None	1.2	2.2	20	0.6	13	1	31.4	26	20	0.3	No	No	No	No
Group-B	Meema	2021/07/013015	28	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	Yes	None	None	None	456				No	No	None	0.9	2.7	11	0.6	13	1	26.8	119	88	0.5	No	No	No	No
Group-B	Deepika	2021/07/000087	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.2	2.2	26	0.7	12	1	27.6	24	8	0.6	No	No	No	No
Group-B	Manju	2021/04/005730	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	120				No	No	None	0.1	0.5	12	0.6	11	1	30.7	16	12	0.4	No	No	No	No
Group-B	Mansi	2021/06/008549	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	100				No	No	None	0.2	0.7	12	0.6	11	1	22.6	20	15	0.3	No	No	No	No
Group-B	Urmila	2021/05/006080	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.8	3.8	16	0.5	13	1	29.6	18	9	0.2	No	No	No	No
Group-B	Anita	2021/07/012652	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	335				No	No	None	0.4	2.8	30	0.9	10	1	20	6	8	0.6	No	No	No	No
Group-B	Jyoti	2021/07/004904	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	220				No	No	None	0.5	0	10	0.6	13	1	30	28	14	0.8	No	No	No	No
Group-B	Akansha	2021/07/001433	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	238				No	No	None	0.5	0.4	17	1	13	1	26.2	20	12	0.4	No	No	No	No
Group-B	Santosh	2021/08/011980	29	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	80				No	No	None	0.2	0.4	6	0.4	12	1	23.1	19	15	0.2	No	No	No	No
Group-B	Kiran	2021/09/006394	32	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	160				No	No	None	0.3	1	16	0.7	11	1	29	16	17	0.9	No	No	No	No
Group-B	Sukhi																																									

Group-B	Swastika	2021/02/003857	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	459				No	No	None	0.9	2.7	26	0.7	11	1	23.7	24	20	0.5	No	No	No	No
Group-B	Rekha	2021/04/012994	28	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	370				No	No	None	0.4	1.2	18	0.7	11	1	21.7	32	16	1.1	No	No	No	No
Group-B	Mamta	2021/04/005291	29	Primi gravida	No	No	Yes	No	No	No	No	No	Yes	No	No	No	None	Yes	No	None	None	None	None	280				No	No	None	0.5	2.5	10	0.6	11	1	26.3	20	12	0.4	No	No	No	No
Group-B	Satki	2021/09/006569	31	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	400				No	No	None	0.8	2.4	12	0.6	12	1	22	30	18	0.4	No	No	No	No
Group-B	Jyoti	2021/02/002846	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	None	80				No	No	None	0.2	0.6	16	0.6	12	1	25.1	22	13	0.3	No	No	No	No
Group-B	Shri devi	2021/07/011207	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	None	100				No	No	None	0.7	2.4	11	0.8	12	1	28.5	22	11	0.2	No	No	No	No
Group-B	Santosh	2021/07/005661	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	None	300				No	No	None	0.4	1.3	12	0.6	12	1	23.5	22	11	0.5	No	No	No	No
Group-B	Priyanka	2021/09/003292	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	282				No	No	None	0.7	1.3	12	0.6	12	1	23.1	17	10	0.7	No	No	No	No
Group-B	Gayatri	2017/10/013833	36	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	400				No	No	None	0.7	3.2	16	0.6	12	1	22.1	10	13	0.4	No	No	No	No
Group-B	Parmila	2021/04/003690	21	Primi gravida	No	Yes	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	None	None	750	PPH	Yes	No	Yes	No	None	1.6	8.9	19	0.7	13	1	27.1	29	13	0.5	No	No	No	No
Group-B	Asha	2021/10/012529	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	580	PPH	Yes	No	Yes	No	None	1.1	3.3	13	0.6	13	1	28.8	13	10	0.3	No	No	No	No
Group-B	Sunita	2021/06/002889	20	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	400				No	No	None	0.7	3.2	16	0.6	12	1	25.1	24	13	0.2	No	No	No	No
Group-B	Nisha	2020/12/009485	20	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	706				No	No	None	1.7	5.1	27	0.7	11	1	18.8	21	16	0.3	No	No	No	No
Group-B	Priyanka	2019/10/016285	23	Multi gravida	No	No	No	Yes	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	None	322				No	No	None	0.5	1.5	35	0.5	13	0.9	28.1	21	11	0.3	No	No	No	No
Group-B	Padma	2021/04/001756	26	Multi gravida	No	No	No	No	Yes	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	620	PPH	Yes	No	Yes	No	None	1.2	3.6	20	0.6	13	0.9	23.8	18	8	0.2	No	No	No	No
Group-B	Gunjan	2021/03/016720	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	360				No	No	None	0.7	2	12	0.5	11	0.9	22.9	55	40	0.7	No	No	No	No
Group-B	Kavita	2021/09/000487	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	330				No	No	None	0.4	1.2	14	0.5	13	0.9	28.2	22	19	0.3	No	No	No	No
Group-B	Monika	2021/06/001454	27	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	None	100				No	No	None	0.3	0.9	14	0.5	13	0.9	28.7	29	19	0.3	No	No	No	No
Group-B	Sushila	2017/04/005639	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	352				No	No	None	0.8	2.4	18	0.7	13	0.9	28.3	21	21	0.3	No	No	No	No
Group-B	Suvinnee	2014/07/007008	30	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	None	150				No	No	None	0.3	0.9	23	0.7	13	0.9	37.6	11	15	0.4	No	No	No	No
Group-B	Mamta	2021/09/010468	31	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	Yes	No	No	None	Yes	No	None	None	None	None	380				No	No	None	0.7	2.2	14	0.6	13	0.9	30.1	21	17	0.7	No	No	No	No
Group-B	Neelu	2021/06/005909	32	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	100				No	No	None	0.2	0.8	15	0.8	11	0.9	26.3	26	20	0.4	No	No	No	No
Group-B	Poonam	2021/06/006117	26	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	Yes	Forceps	Yes	No	None	None	None	None	None	820	PPH	Yes	No	Yes	No	None	1.8	6.6	12	0.5	13	0.9	30.6	40	37	0.3	No	No	No	No
Group-B	Jyotsna	2021/04/010502	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	None	470				No	No	None	0.7	2.1	11	0.8	11	0.9	28.5	22	11	0.2	No	No	No	No
Group-B	Sarita	2021/09/016573	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	600	PPH	Yes	No	Yes	No	None	1.2	3.6	14	0.5	13	0.9	28.5	31	16	0.4	No	No	No	No
Group-B	Payal	2021/08/009532	18	Primi gravida	No	No	Yes	No	No	No	No	No	Yes	No	No	No	None	Yes	No	None	None	None	None	360				No	No	None	0.7	2.1	19	0.7	13	0.9	38.2	40	16	0.2	No	No	No	No
Group-B	Kavita	2021/03/014665	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	350				No	No	None	0.6	1.8	11	0.5	11	0.9	28.1	16	35	1.2	No	No	No	No
Group-B	Mumal	2021/11/002501	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	460				No	No	None	0.9	3	19	0.6	13	0.9	22.9	30	23	0.5	No	No	No	No
Group-B	Padam	2021/09/011854	26	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	210				No	No	None	0.7	1.5	12	0.6	11	0.9	21.4	89	75	0.7	No	No	No	No
Group-B	Urmila	2021/07/0146041	34	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	650	PPH	Yes	No	Yes	No	None	1.1	3.3	11	0.6	11	0.9	25.4	16	21	0.3	No	No	No	No
Group-B	Anurachna	2021/07/001562	32	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	800	PPH	Yes	No	Yes	No	None	1.3	3.9	15	0.7	11	0.9	25.1	70	60	0.7	No	No	No	No
Group-B	Rajdeep	2020/01/030921	22	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	200				No	No	None	0.4	0.2	31	0.8	11	0.9	23.44	37	20	0.5	No	No	No	No
Group-B	Poonam	2019/01/029482	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	120				No	No	None	0.4	0.2	17	0.8	11	0.9	25.7	24	11	0.4	No	No	No	No
Group-B	Jamu	2015/11/001536	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	256				No	No	None	0.3	1.6	16	0.6	11	0.9	23.8	27	13	0.4	No	No	No	No
Group-B	Soniya	2021/12/008963	21	Primi gravida	No	No	No	No	No	No	No	No	Yes	No	Yes	Vaccume	Yes	No	None	None	None	None	None	250				No	No	None	0.3	0.9	13	0.6	13	0.9	30.7	30	15	0.6	No	No	No	No
Group-B	Sumitra	2021/03/001153	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	None	100				No	No	None	0.3	1	19	0.7	11	0.9	22.1	19	19	0.4	No	No	No	No
Group-B	Vishnu	2021/07/015434	29	Primi gravida	Yes	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	722	PPH	Yes	No	Yes	No	None	1.6	4	23	0.7	13	0.9	26.8	32	23	0.2	No	No	No	No
Group-B	Rinku	2020/11/001733	27	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	350				No	No	None	0.5	2.8	14	0.7	11	0.9	22.7	38	23	0.5	No	No	No	No
Group-B	Samta	2022/02/004223	21	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	392				No	No	None	0.8	2.2	26	0.8	12	0.9	21	22	12	1	No	No	No	No
Group-B	Puja	2019/06/016907	22	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	439				No	No	None	0.8	2.4	14	0.7	11	0.9	24.5	37	20	0.6	No	No	No	No
Group-B	Pooja	2022/03/003721	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	300				No	No	None	0.7	2.6	10	0.6	11	0.9	18.5	27	13	0.4	No	No	No	No
Group-B	Geetanjali	2022/01/029188	24	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	300				No	No	None	0.8	4.4	20	0.7	11	0.9	25.6	29	17	1	No	No	No	No
Group-B	Gaju	2021/08/003783	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	None	390				No	No	None	0.9	2.2	16	0.7	11	0.9								

Group-B	Shridevi	2021/11/016584	23	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	200				No	No	None	0.4	1.2	20	0.6	13	0.9	28.3	28	26	0.2	No	No	No	No
Group-B	Deepi	2021/12/003476	32	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	70				No	No	None	0.1	0.3	10	0.7	12	0.9	24.2	13	8	0.3	No	No	No	No
Group-B	Shivangi	2021/07/013147	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	410				No	No	None	0.8	2.2	22	0.6	12	0.9	22.2	32	13	0.5	No	No	No	No
Group-B	Sangeeta	2022/02/009462	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	250				No	No	None	0.3	1.6	16	0.5	12	0.9	27.7	34	27	0.3	No	No	No	No
Group-B	Anita	2022/04/008993	23	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	193				No	No	None	0.4	1.9	22	0.6	13	0.9	29.8	29	12	0.3	No	No	No	No
Group-B	Anita	2022/05/002578	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	300				No	No	None	0.5	2.8	12	0.6	13	0.9	30.8	32	16	1.7	No	No	No	No
Group-B	Suman	2022/04/001509	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	480				No	No	None	0.9	1.4	19	0.6	13	0.9	24.9	22	13	0.6	No	No	No	No
Group-B	Maine	2022/02/001550	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	350				No	No	None	0.7	2.6	11	0.9	12	0.9	34	18	10	0.8	No	No	No	No
Group-B	Khushbu	2021/12/017582	30	Multi gravida	No	No	No	No	No	No	No	No	No	Yes	No	No	None	No	No	None	None	150				No	No	None	0.3	0.6	11	0.6	12	0.9	22.7	18	19	0.5	No	No	No	No
Group-B	Kamlesh	2022/03/005461	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	580	PPH	Yes	No	Yes	No	None	0.7	4.5	16	0.6	13	0.9	30.4	26	12	0.4	No	No	No	No
Group-B	Priya	2022/01/026338	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	225				Yes	No	None	0.3	0.7	8	0.5	11	0.9	27	21	11	0.3	No	No	No	No
Group-B	Hasmi	2022/05/001568	29	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	450				Yes	No	None	0.8	2.8	15	0.6	11	0.9	28	29	14	0.4	No	No	No	No
Group-B	Sundar	2021/10/001849	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	300				No	No	None	0.4	1.8	14	0.6	13	0.9	28.7	31	12	0.2	No	No	No	No
Group-B	Brandra	2022/03/015959	24	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	No	No	None	None	None	300				No	No	None	0.6	1.4	11	0.7	13	0.9	29.4	16	11	0.5	No	No	No	No
Group-B	Sonu	2022/03/009877	28	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	400				No	No	None	0.4	1.4	20	0.7	13	0.9	30.4	31	15	0.2	No	No	No	No
Group-B	Sarupi	2021/11/006437	35	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	Yes	1st degree	None	None	234				No	No	None	0.4	1.3	10	0.6	11	0.9	25	28	15	0.5	No	No	No	No
Group-B	Varsha	2022/04/004452	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	341				No	No	None	0.5	1.5	12	0.5	11	0.9	23.5	25	11	0.4	No	No	No	No
Group-B	Sangeeta	2021/12/010321	23	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	182				No	No	None	0.3	1.5	12	0.5	11	0.9	26.3	15	10	0.5	No	No	No	No
Group-B	Manju	2021/10/012122	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	310				No	No	None	0.6	2.6	13	0.6	13	0.9	28.1	16	11	0.5	No	No	No	No
Group-B	Jyoti	2022/01/032895	26	Multi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	No	No	None	None	None	300				No	No	None	0.6	1	18	0.7	11	0.9	23.4	44	23	0.5	No	No	No	No
Group-B	Guddi	2022/04/006080	26	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	300				No	No	None	0.6	2.2	18	0.7	10	0.9	22.6	18	20	0.9	No	No	No	No
Group-B	Kiran	2021/12/012312	32	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	200				No	No	None	0.3	0.9	16	0.5	11	0.9	24.2	20	11	0.2	No	No	No	No
Group-B	Pushpa	2022/01/031164	25	Primi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	800	PPH	Yes	No	Yes	No	None	1.5	3.5	16	0.6	11	0.9	20.7	30	18	0.3	No	No	Yes	No
Group-B	Vanadana	2022/03/012778	28	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	620	PPH	Yes	No	Yes	No	None	1.5	3.9	15	0.6	11	0.9	22.8	19	18	1	No	No	No	No
Group-B	Jyoti	2021/11/001390	22	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	430				No	No	None	0.8	2.6	11	0.6	11	0.9	32.2	22	19	0.4	No	No	No	No
Group-B	Neha	2021/11/008722	30	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	380				No	No	None	0.7	2.1	38	1	11	0.9	20.3	18	6	0.6	No	No	No	No
Group-B	Rinka	2022/06/009781	21	Multi gravida	No	No	No	No	Yes	No	No	No	No	No	No	None	Yes	No	None	None	None	160				No	No	None	0.3	0.9	13	0.5	11	0.9	26.5	30	42	0.8	No	No	No	No
Group-B	Sarika	2021/12/004664	22	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	368				No	No	None	0.4	2	17	0.7	11	0.9	20.2	19	14	0.3	No	No	No	No
Group-B	Nirma	2017/06/006933	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	300				No	No	None	0.3	1.6	17	0.7	11	0.9	20.2	19	14	0.3	No	No	No	No
Group-B	Usha	2022/03/010683	25	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	130				No	No	None	0.3	0.5	21	0.7	11	0.9	18.7	21	19	0.3	No	No	No	No
Group-B	Suhani	2022/05/019062	25	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	180				No	No	None	0.3	0.7	18	0.7	11	0.9	22.4	28	29	0.8	No	No	No	No
Group-B	Monika	2022/04/016070	30	Primi gravida	No	No	No	No	No	No	No	No	No	No	Yes	Vaccume	Yes	No	None	None	None	600	PPH	Yes	No	Yes	No	None	1.2	6.2	17	0.6	11	0.9	23.1	24	14	0.2	Yes	No	Yes	No
Group-B	Doli	2022/06/004198	30	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	900	PPH	Yes	No	Yes	No	None	2.5	7	14	0.7	12	0.9	29.1	22	11	0.4	Yes	No	Yes	No
Group-B	Heera	2022/06/011457	20	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	343				No	No	None	0.8	2.4	11	0.9	11	0.9	22.8	21	8	0.4	No	No	No	No
Group-B	Nirma	2022/06/013356	24	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	724	PPH	Yes	No	Yes	No	None	1.3	4	10	0.9	12	0.9	29.4	12	9	0.2	No	No	No	No
Group-B	Anjali	2022/04/008325	28	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	250				No	No	None	0.3	1.2	27	0.7	10	0.9	19.9	132	158	0.7	No	No	No	No
Group-B	Vimla	2022/04/016932	20	Multi gravida	No	No	Yes	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	492				No	No	None	0.9	2.6	15	0.6	10	0.9	19.9	21	16	0.2	No	No	No	No
Group-B	Rashi	2021/11/000001	21	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	348				No	No	None	0.4	1.4	13	0.5	10	0.9	22.2	24	13	0.3	No	No	No	No
Group-B	Chanchal	2021/04/003030	23	Multi gravida	No	Yes	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	320				No	No	None	0.6	1.6	17	0.6	10	0.9	21.4	24	14	0.2	No	No	No	No
Group-B	Yogita	2022/01/026296	31	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	No	No	None	None	None	300				No	No	None	0.5	2.8	15	0.6	10	0.9	25.3	27	17	1	No	No	No	No
Group-B	Khusboo	2022/04/016619	23	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	Yes	1st degree	None	None	250				No	No	None	0.3	0.9	15	0.7	11	0.9	23.1	21	9	0.3	No	No	No	No
Group-B	Manisha	2021/01/018519	25	Primi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	1100	Severe PPH	Yes	No	Yes	No	None	1.3	3.9	17	0.6	12	0.9	25	15	12	0.3	No	No	No	No
Group-B	Santu	2022/06/009345	25	Multi gravida	No	No	No	No	Yes	No	No	No	No	No	No	None	Yes	No	None	None	None	600				Yes	No	None	1.3	3.9	21	0.7	10	0.9	18.6	23	10	0.4	No	No	No	No
Group-B	Pooja	2021/12/005943	23	Multi gravida	No	No	No	No	No	No	No	No	No	No	No	None	Yes	No	None	None	None	276				No	No	None	0.6	1.8	18	0.6	12	0.9	26.1	24	18	0.3	No	No	No	No
Group-B	Manisha	2021/11/003535	23	Primi gravida	No	Yes	Yes	No	No	No	No	No	No	Yes	No	None	Yes	No	None	None	None	800	PPH	Yes	No	Yes	No	None	2.4	7.1	15</											