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ORIGINAL RESEARCH

Evaluation of effectiveness of Intraumbilical Vein Injection of Misoprostol in normal vaginal delivery

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Abstract

Aim: To study the effect of Intraumbilical Vein Injection of Misoprostol in normal vaginal delivery and to compare the volume of vaginal blood loss in Intraumbilical Vein Injection of Misoprostol versus normal saline in normal vaginal delivery.

Materials and methods: This study was conducted in the department of obstetrics and gynecology at Pannadhay Rajkiya Mahila Chikitsalaya, RNT Medical College, Udaipur, Rajasthan. The study was conducted on 100 cases admitted in Labor room of PDMC Udaipur. The study comprised of two groups i.e. Group 1: Umbilical vein injection of misoprostol in 50 cases and Group 2: Umbilical vein injection of normal saline in 50 cases.At the time of admission a detailed history regarding name, age, husband's name, occupation, education, address and obstetric history was taken regarding patient's parity, time since last delivery. Intraumbilical vein injection of misoprostol was injected into umbilical vein by 20 cc syringe. The volume of blood loss from the time of umbilical vein injection to delivery of the placenta was measured by placing a pad under the patients buttocks. The pads weighed before use and was weighed after delivery of the placenta using a dedicated electronic scale amount of blood loss was recorded in ml.

Results: Average time of placenta separation was more in control group than study group. Overall blood loss is more in control cases than study cases.One case of PPH was noted in control group that in 4th gravida.

Conclusion: It can be concluded from the results that injection misoprostol in umbilical vein used in 3rd stage of Labor help in early separation of placenta and reduce blood loss.

Introduction

Post partum hemorrhage (PPH) refers to a blood loss of more than 500 ml in normal delivery or 1000 ml during caesarean section after delivery of fetus. Massive PPH refer to loss of 30-40% of the patient's blood volume leading to changes in haemodynamic parameters.[1,2]There is excessive bleeding following delivery and is described as primary and secondary. Primary postpartum haemorrhage (PPH) is loss of blood estimated to be >500 ml, from the genital tract, within 24 hours of delivery (the most common obstetric haemorrhage)[1]. Secondary PPH

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is defined as abnormal bleeding from the genital tract, from 24 hours after delivery until six weeks postpartum.

Measure to arrest bleeding

1. Examination to establish cause, and exclude other causes than uterine atony (the most common cause).
2. If the cause is established to be uterine atony, the following measures are taken in turn:

a. Bimanual uterine compression to stimulate contraction
b. Ensure that the bladder is empty.
c. Oxytocin 5 units by slow IV infusion. May require repeat. The latest Cochrane review supports the use of oxytocin as first-line treatment.
d. Ergometrine 0.5 mg slow IV or IM unless there is a history of hypertension.
e. Oxytocin infusion unless fluid restriction is necessary.
f. Carboprost 0.25 mg IM repeated to a maximum of 8 doses unless there is a history of asthma. It is licensed only for bleeding after a caesarean section in Europe. It is also sometimes used off license as an intramyometrial injection.
g. Misoprostol 1000 micrograms rectally. The Cochrane review determined misoprostol is not as effective as oxytocin, but may be helpful in low resource settings, as it does not need refrigeration or infusion. If these physical and pharmacological methods are not succeeding, then go for surgical options[3-6].

The present study was conducted considering the following aim and objectives:

Aim and Objectives

1. To study the effect of Intraumbilical Vein Injection of Misoprostol in normal vaginal delivery.
2. To compare the volume of vaginal blood loss in Intraumbilical Vein Injection of Misoprostol versus normal saline in normal vaginal delivery.

Materials and methods

This study was conducted in the department of obstetrics and gynecology at Pannadhay Rajkiya Mahila Chikitsalaya, RNT Medical College, Udaipur, Rajasthan. The study was conducted on 100 cases admitted in Labor room of PDMC Udaipur.

The study comprised of two groups i.e.

Group 1: Umbilical vein injection of misoprostol in 50 cases.

Group 2: Umbilical vein injection of normal saline in 50 cases.

Inclusion Criteria

All women who delivered vaginally after 37 weeks of gestation

Exclusion Criteria

a. Multiple pregnancy
b. Previous caesarean delivery
c. Hemodynamically unstable
d. Severe anaemia (Hb<7g)
e. Chorioamnionitis
f. Refusal of the consent for inclusion
g. Pre-eclampsia
h. Medical Illness
i. Clotting Factor Disorder
j. Genital Tract Trauma during Delivery.

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At the time of admission a detailed history regarding name, age, husband's name, occupation, education, address and obstetric history wastaken regarding patient's parity, time since last delivery. General condition at the time of admission was noted specifically recording of pulse, blood pressure, respiratory rate, condition of heart andlungs.

Following investigations were done in all patients

- Haemoglobin level
- Blood group
- Urine albumin & urine sugar
- Bleeding time
- Clotting time
- USG to rule out multiple pregnancy.

Umbilical Vein Injection Technique

800 µg misoprostol dissolved in 20 ml of normal saline in 20 cc syringe.Intraumbilical vein injection of misoprostol was injected into umbilical vein by 20 cc syringe. The volume of blood loss from the time of umbilical vein injection to delivery of the placenta was measured by placing a pad under the patientsbuttocks. The pads weighed before use and was weighed after delivery of theplacenta using a dedicated electronic scale amount of blood loss was recorded in ml (1 ml=1g).

During study period following side effects were noted and treated symptomatically –

1. Nausea
2. Vomiting
3. Rigor
4. Fever
5. Diarrhea
6. Abdominal Pain

Follow Up

All women followed for Vital signs (BP, PR, RR, and Temperature), Uterine fundal height, Abnormal vaginal bleeding, Pain abdomen, Consistency of uterus (Hardness of uterus)

The Study Include

1. Delivery of the placenta: - Delivery of the placenta who received misoprostol injection.
2. Volume of blood loss.
3. Time from umbilical vein injection to delivery of the placenta.
4. Adverse effect of misoprostol.

Data was collected and subjected to statistical analysis.

Observations and Discussion

Average Hb in control group primigravida 9.8 gm% and in study group primigravida 9.6 gm%. Average Hb in control group 3rd gravida 9.2 gm% and in study group 3rd gravida 9.2 gm%. Average Hb in control group >3rd gravida 9.0 gm% and in study group >3rd gravida 8.8 gm%. Average Hb status was slightly higher in primi gravida than multi gravida as shown in table 1.Average time of placenta separation was more in control group than study group (graph 1).Average time of placenta separation was more in higher age group.

Average blood loss is more in control cases than study cases. Average blood loss is more in multi gravida than primi gravida (graph 2).

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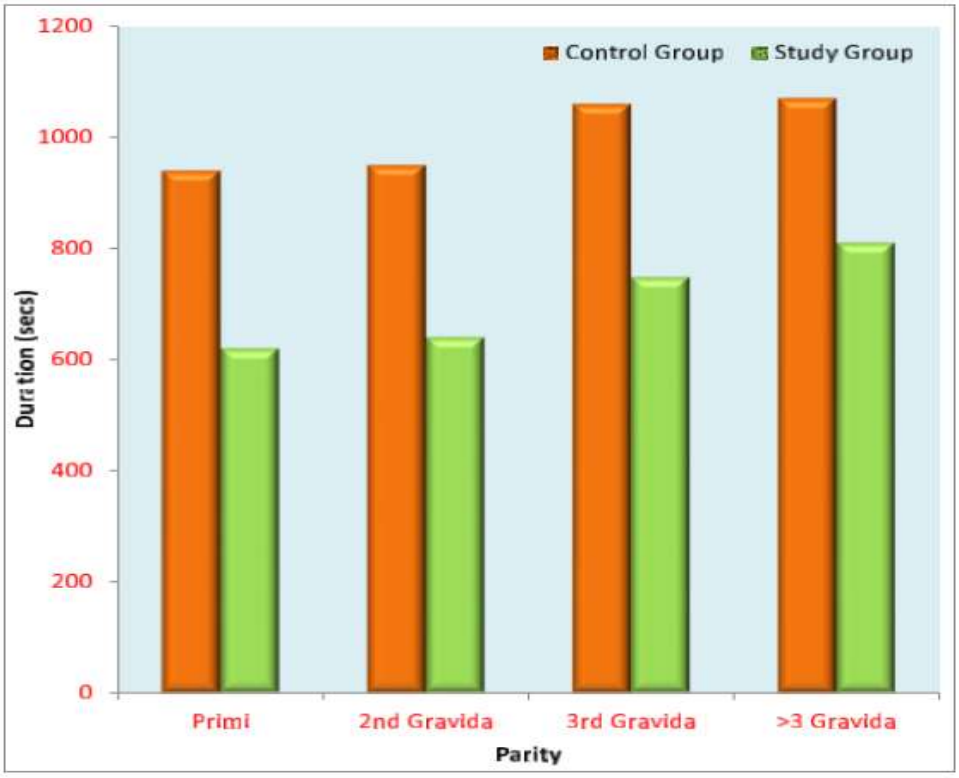
Average blood loss in more than 3rd gravida control group 550ccand primi study group 450cc. 100 cc blood loss more in control group than study group. So overall blood loss is more in control cases than study cases (table 2).

Table 1: Average Hemoglobin Status

	Control Group (N=50 cases)	Study Group (N=50 cases)
Primi	9.8 gm%	9.6 gm%
2nd Gravida	9.6 gm%	9.2 gm%
3rd Gravida	9.2 gm%	9.2 gm%
>3 Gravida	9.0 gm%	8.8 gm%



Graph 1: Average Duration of Separation of Placenta

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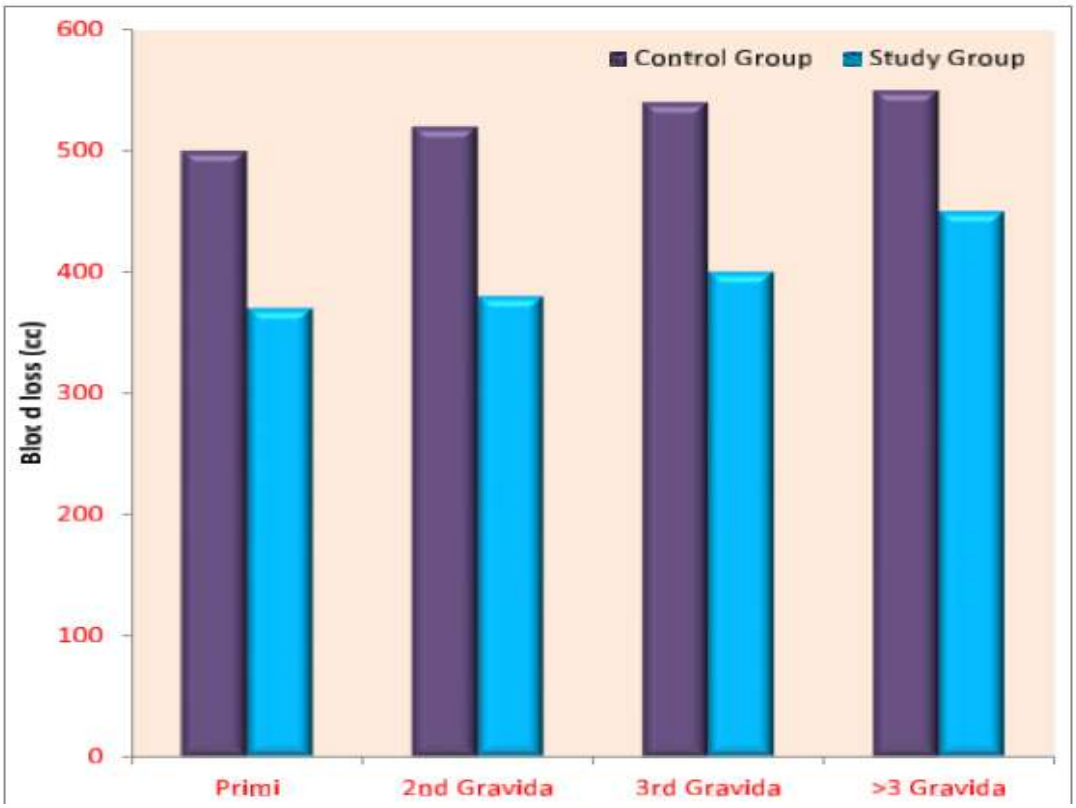

Graph 2: Average Blood Loss According of Parity

Table 2: Difference of Blood Loss in Control and Study Group

Gravida	Control Group (N=50 cases)	Study Group (N=50 cases)	Difference
Primi	500 cc	370 cc	130 cc
2nd Gravida	520 cc	380 cc	140 cc
3rd Gravida	540 cc	400 cc	140 cc
>3 Gravida	550 cc	450 cc	100 cc

In the present study, table 3 shows one case of retained placenta noted in control group that in 5th gravida of age >35 yrs; that is managed in OT by manual removal of placenta under GA. In primi gravida no case of retained placenta reported in control group and study group. In 2nd gravida no case of retained placenta reported in control groupand study group.In 3rd gravida no case of retained placenta reported in control groupand study group.

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Table 3: Retained Placenta According to Parity

Parity	Control Group (N=50 cases)	Study Group (N=50 cases)
Primi gravid	Nil	Nil
2nd Gravida	Nil	Nil
3rd Gravida	Nil	Nil
>3 Gravida	1	Nil

In present study graph 3 shows one case of PPH was noted incontrol group that in 4th gravida. Management was by:

- Explore uterine cavity.
- Uterine massage.
- Give uterotonic drugs.

In primi gravida no case of PPH reported in control group and study group. In 2nd gravida no case of PPH reported in control group and study group. In 3rd gravida no case of PPH reported in control group and study group.

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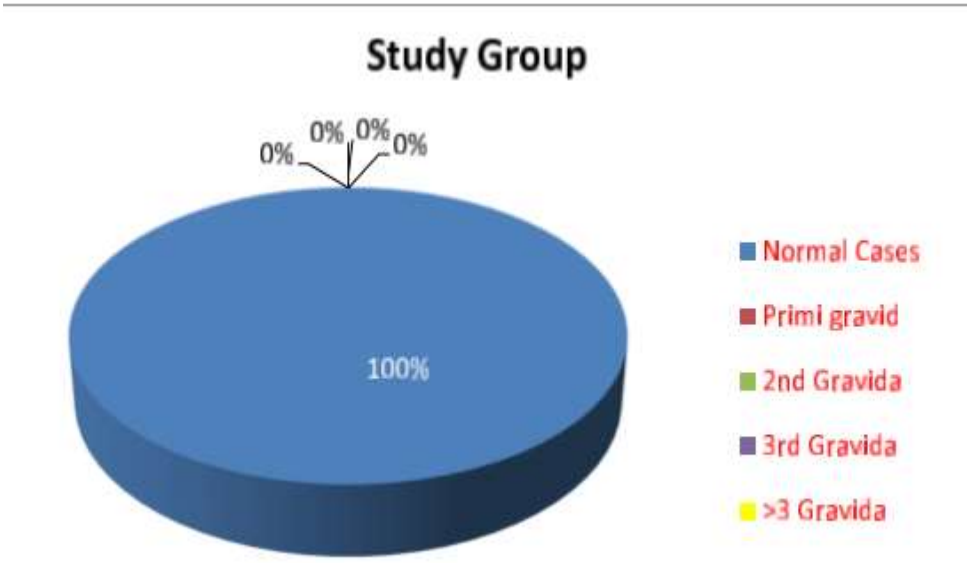

Graph 3: Chances of PPH According to Parity

Comparison between Group 1 and Group 2:

1. Average duration of placenta separation in primi gravid age group 20-25 years is 10 minutes 20 seconds in study group and 15 minutes 40seconds in control group.
2. Average duration of placenta separation in 2nd gravida age group 26-30years in study group is 10 minutes 40 seconds and in control group 15minutes 50 seconds.
3. Average duration of placenta separation in 3rd gravid age group 31-35years in study group 12 minutes 28 seconds and in control group 17minutes 40 seconds.
4. Average duration of placenta separation in more than 3rd gravid andage more than 35 years in study group is 13 minutes 30 seconds andcontrol group 17 minutes 50 seconds.
5. Average blood loss in primi gravida age 20-25 years in study group is370ml and control group 500ml.
6. Average blood loss in 2nd gravida age 26-30 years in study group is380 ml and control group 520ml.
7. Average blood loss in 3rd gravida age 31-35 years in study group is400ml and control group 540ml.
8. Average blood loss in more than 3rd gravida age more than 35 years instudy group is 450ml and control group 550ml.

Conclusion

At the end of present study injection misoprostol in umbilical vein used in 3rd stage of Labor help in early separation of placenta and reduce blood loss. Injection misoprostol in umbilical vein reduce chance of retained placenta. Overall injection misoprostol in umbilical vein help in:

a. Early separation of placenta
b. Reduce blood loss
c. Reduce chances of retained placenta.

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