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SAY GOODBYE TO PPH BY COMPARISON OF TREATMENT BETWEEN MEDICAL METHOD AND MEDICAL & PANICKER SUCTION CANULA

Obstetrics & Gynaecology

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ABSTRACT

Background: Postpartum haemorrhage (PPH) is obstetric emergency that follow vaginal or caesarean delivery. It is estimated it accounts for 27% of the 3,03 000 maternal deaths. a further 20 million women suffer long-term effects. PPH is significant contributor to maternal morbidity and mortality, which is defined as a blood loss of 500 mL or more following childbirth. **Methods:** This is observational study where study conducted in Muzaffarnagar medical college in Jan 2022 to July 2022 Obstetrics and Gynecology department, Muzaffarnagar In large academic medical centre , total conducted this study 25 cases and 25 control based on analytic observations. Group 1 (25) consisted of pregnant women who had been treated by medical method in case of PPH, and group 2 (25) consisted of pregnant women who are treated by PPH panicker suction Cannula **Results:** In my study 25 cases that were treated medically underwent medical treatment for PPH and survived. 25 cases treated by PPH panicker suction canula patients were survived with PPH suction canula **Conclusions:** Haemorrhage is the leading cause of the admissions to the intensive care unit and cause of the maternal mortality of the admissions to the intensive care unit and the most preventable cause of the maternal mortality, attention should be given to the safety of delivery- to reduce the risk of damaging other adjacent organs

KEYWORDS

INTRODUCTION

Postpartum haemorrhage (PPH) is an obstetric emergency that can follow vaginal or caesarean delivery. It is estimated that it accounts for 27% of the 303 000 maternal deaths worldwide. PPH remains a significant contributor to maternal morbidity and mortality throughout the world. Postpartum hemorrhage, which is defined as a blood loss of 500 mL or more following childbirth, was the main outcome, whereas severe postpartum hemorrhage was defined as a blood loss of 1000 mL or more. [1]

Maternal mortality is approximately 100 times greater in resource-poor countries than in resource-rich ones, and these circumstances are widespread. It is significant issue that may prevent the need for womb removal surgery (hysterectomy). Hemorrhage kills the mother is so rapid, that the usually quoted first 1 or 2 hours as "Golden hours" is missing. 2

A vital step in the physiological prevention of PPH is the immediate contraction and retraction of myometrial muscle fibres during and after the third stage of labour. Uterine atony is a condition characterised by the inability of the uterus to contract adequately after the placenta has separated from the uterus. However, the incidence of PPH can be decreased by active management of third stage of labor including use of uterotonic drugs. 3 Furthermore, on-going haemorrhage caused by delays in stopping the bleeding can lead to coagulation problems, which only serves to worsen the bleeding. However, the inability to predict who will stop bleeding spontaneously forces caregivers to intervene aggressively at an early stage .Obstetric haemorrhage continues to be a major cause of maternal mortality 4

A low-cost, effective intervention that can be used by first-level maternity services providers could be a major advance in reducing maternal mortality from PPH, especially in low resource settings where the majority of deaths occur. Risk factors for PPH include; past history of PPH, multiple pregnancy, fetal macrosomia, Primi-gravida, grand multi-parity, older age, preterm births, genital tract injuries, non-use of oxytocics for PPH prophylaxis, labor induction, cesarean birth and intra-uterine fetal deaths . 5 PPH can also occur in patients even if there are no known risk factors, such as multiple pregnancies, surgical deliveries, and chorioamnionitis. Prevention of excess maternal deaths requires a coordinated approach to prevent and by amultidisciplinary team.

Although some women have risk factors for PPH that can be identified during pregnancy or during labor or birth, most women to lessen the probability of significant blood loss, women are typically given a medication during labor .Treatment options include blood clotting medications (haemostatic medications like tranexamic acid and recombinant activated factor VII), medications to increase muscle contractions (such as oxytocin, ergometrine, and prostaglandins like misoprostol), surgical procedures (such as tying off or blocking the uterine artery), and radiological interventions (to assist in blocking the main artery to the womb by using gel foams). 6 . The most common factor is uterine atony. The causes of PPH is commonly remembered as 4Ts which include Tone, Tissue,Trauma and Thrombosis

The present study was undertaken to objective is to find a safe, simple and sure technique for preventing and treating PPH, thereby decreasing maternal mortality and morbidity

AIM

- To Compare The Treatment Between Medical Method And Panicker Suction Canula Between Pregnant Women Who Is Under Labor
- To document the incidence, risk factors, and causes of PPH in a low-resource setting
- To document the maternal outcomes of PPH in low-resource setting and thus decrease maternal mortality and morbidty

MATERIALS AND METHOD

This is a observational study where the study conducted in Muzaffarnagar medical college in Jan 2022 to July 2022 Obstetrics and Gynecology department, Muzaffarnagar after the permission of participant before the commencement of study. In our large academic medical centre , total conducted this study 25 cases and 25 control based on analytic observations. Group 1 (25) consisted of pregnant women who had been treated by medical method in case of PPH, and group 2 (25) consisted of pregnant women who are treated by PPH panicker suction Canula .

Blood pressure, pulse rate, haemoglobin haematocrit, platelet count, clotting time and bleeding time were noted.The medications most commonly used in PPH management are uterotonic agents. These medications include oxytocin, misoprostol, methylergometrine, carboprost and dinoprostone.Typically, oxytocin is used as the initial medication for PPH management then other uterotonics are administered if oxytocin fails to stop bleeding. A variety of outcomes related to PPH management are reported. Blood loss itself is measured, although often inaccurately as previously noted. Transfusion and anemia are sometimes used as markers for the amount of blood loss. T

Inclusion

- Age more than 18yrs
- Women who underwent labor and had atonic PPH

Exclusion

Patients with following risk factors were excluded from the study.

- Heart disease
- Epilepsy
- Diabetes
- Traumatic PPH
- Hepatic disorders
- Coagulopathy 6

Fig. 2 & 3: Vacuum retraction of uterus using single bottle suction machine for atonic postpartum hemorrhage.

A specially made stainless steel or plastic cannula of 12 mm in diameter and 25 cm in length with multiple holes of 4 mm diameter at the distal 12 cm of the cannula was introduced into the uterine cavity through the vagina to reach the fundus. 7 The cannula was connected to a suction apparatus, and a negative pressure of 650- 700 mm mercury was produced . 8 The perforations on fundal portion are larger and longitudinal (3mm-W× 2 to 2.5cm-L), and on cervical portion they are small and round (3-4mm-D). The cannulas used for C.S are shorter (4 and 5). Large bore cannula was used when cervix was dilated, and small bore cannula was used when cervix admits only one finger.

Application of PPH canula in Caeserian Section

In case of cesarean section: the cannula was inserted through the uterine wound and brought outside through vagina. The outer end of the cannula was connected to the suction machine through tubing. The uterine wound was closed quickly. Cannula fixation (tip at the level of fundus) was done in the similar way as mentioned in vaginal insertion and then negative pressure was applied. 9

Prophylactic application during vaginal delivery:

The suction cannula system was connecting the suction tube to the cannula and to suction machine) and kept ready before the delivery. After the delivery of the baby and before the delivery of placenta, a wide blade vaginal speculum was applied, and 5cm of anterior cervix was grasped with sponge holder. After the delivery of placenta, the assistant applies mild traction on cervix with sponge holder, and the obstetrician inserts left two fingers in to cervix. The right hand inserts the cannula in to uterus taking the guidance of left fingers. Left palm supporting the fundus per abdomen, bimanually feels the cannula and its position. This helps to avoids perforation. The cannula was held in this position, and a negative pressure of 700mmHg was applied by putting on the suction machine.

A bolus of 5units Oxytocin was given intravenously after the delivery of anterior shoulder. After application of negative pressure for 10 minutes, the suction machine was put off, but the suction cannula system was kept undisturbed. Suction was put on for 10min every hour for 3hrs, or whenever there was recurrence of bleeding. The cannula was kept in position even for up to 24hrs if recurrence of bleeding expected. The blood collected in suction bottle was measured and recorded.

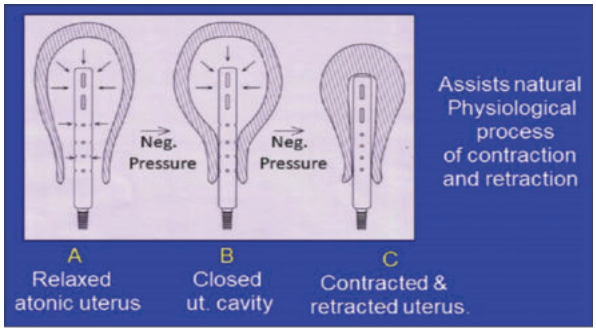
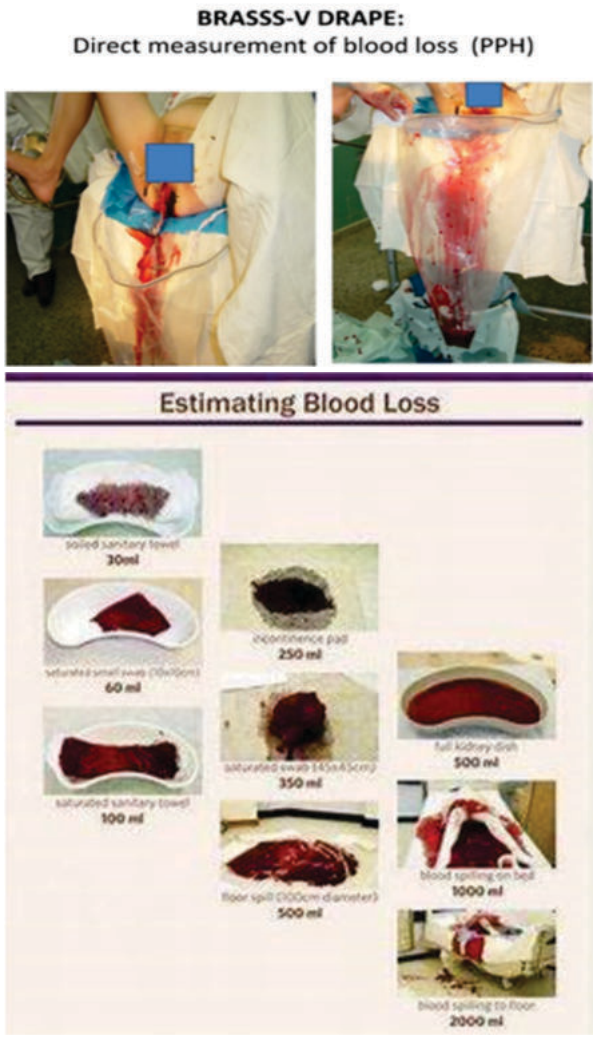


Fig. Visual Estimates for PPH



Cannula removal:

When negative pressure applied, the soft cervical tissues get sucked into the perforations of cervical portion of the cannula and become adherent. The cannula can be removed easily after gentle separation of these adhesions

Rough separation of adhesions results in cervical injury and bleeding. The cannula was removed one hour after last suction in all women. Cannula should not be removed immediately after stopping negative pressure.

RESULTS

Table no. 1 Acc to the parity

Parity	Medical method		Suction canula	
	25	%	25	%
Primi gravida	5	20	10	40
multigravida	20	8	15	60
Total	25		25	

Table 2 The time taken to stop bleeding

Time	No. of patients treated by medical method		No. of patients treated by PPH canula	
	N	%	N	%
< 2 min	19	76	20	8
2.1- 2.9 min	3	12	3	12
3-3.9 min	2	8	1	4
>4 min	1	4	-	
Total	25		25	

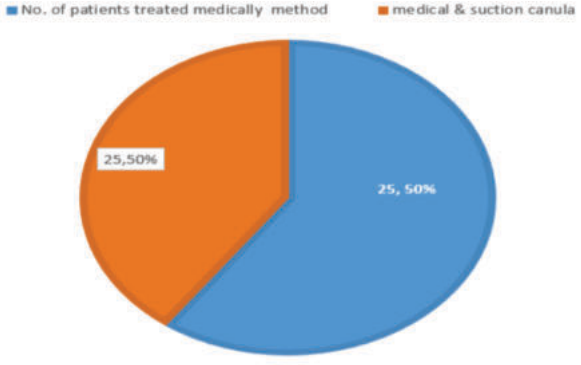
Table no. 3 Blood Loss

Blood loss	No. of patients treated by medical method		No. of patients treated by PPH canula	
	N	%	N	%
100 ml	8	32	22	88
101-200 ml	12	98	2	8
201-300 ml	2	8	1	4
>300 ml	3	12	-	-
Total	25		25	

Table 3 Mode of delivery

Mode of delivery	No. of patients treated by medical method		No. of patients treated by PPH canula	
	N	%	N	%
Vaginal delivery	10	4	20	80
LSCS	15	60	5	20
Total				

Table 4 Superiority of PPH suction canula



No mortality due to DIC .
All were saved by Medical and Panicker suction canula

Total 5 Risk factors related to PPH

PPH risk factors	No. of patients treated by PPH	
	N	%
Poly-hydramnios	4	8
Prolonged Labour	1	2
Obstructed Labour	3	6
Severe PIH	8	16
Abruption placentae	10	2
Placenta previa	18	36
Twins	4	8
Macrosomia	2	4
Total	50	

Table 6 Hospital care

Hospital care	No. of patients	
	N	%
ICU care	20	40
Postop room	30	60
Total	50	

Table 7

Gestational wk	No. of patients of PPH	
	N	%
20—24wk	16	32
24-28wk	9	18
28-34wk	9	18
35-37wk	7	14
37-39wk	9	18
Total	50	

Table 8 Distribution of cases according to blood transfusion

Cases	No. of patients treated by	
	PPH	%
Blood transfusion	40	16
Platelet transfusion	2	8
FFP transfusio	8	32
Total	50	

Table 9 Distribution of cases according to maternal morbidity

According To Maternal Morbidity	Cases	%
Anemia	2	4
CCF	0	-
Sepsis	2	4
No morbidity	44	88
Shock	2	4
Total	50	

DISCUSSION

PPH is one of the leading causes of maternal mortality and an important cause for serious morbidity in the developing and developed world. Uterine atony, in which there is failure of the uterine muscle to contract normally following delivery of the baby and placenta, Tachycardia may be the earliest sign of postpartum hemorrhage. Other signs such as hypotension, orthostasis, nausea, dyspnea, oliguria, and chest pain may indicate hypovolemia from significant hemorrhage. If excess bleeding is diagnosed, the four T'(uterine atony (tone); laceration, hematoma, inversion, rupture (trauma); retained tissue and coagulopathy (thrombin) used in specific causes. The use of calibrated drape in assessment of PPH since assessment of postpartum blood loss using a calibrated drape is more objective way of determining the rate of PPH. 10

In my study 20 % primi treated by medical method and 40% teated by PPH suction canula and 80% treated by medical method and 60% treated by suction canula. In Dr. Manju Meena 2018 study 24 % primi and 28% multigravida treated by PPH. 9 In Thawal Y et al 40 % primigravida and 60% multigravida treated by PPH

In my study time taken to control bleeding by PPH suction canula 8% cases within <2min, 12 % cases within 2.1-2.9mm , 4 % cases within >4min and no case >4min. In Dr. Manju Meena , Dr. Pradeep Meena 2018 10 (40%) cases were stopped bleeding within 3-3.9 min followed by 06(24%) cases were stopped bleeding between 2.1-2.9 min and 06(24%) patients were stopped bleeding 4min .9

In my study blood loss occur by PPH suction canula 100ml blood loss in 88 % cases, 8% cases in 101- 200ml, 201-300ml in 4% cases in PPH suction canula and >300ml no case. . In Dr. Manju Meena , Dr. Pradeep Meena 2018 10 (40%) cases were collected blood in bottle ranged from 101-200ml and 09(36%) patients were collected blood 300ml. 9 Damor P et al. 2021 Blood collected in bottle after SR Cannula Application ranged from 100-150 ml, 36 women (30%) of 60 women (50%) blood collected in bottle ranged from 101-150 ml, of 13 women (10.8%) blood collected in bottle ranged from 151-200 ml, 3 women (2.5%) blood collected in bottle ranged from 201-300 ml, 8 women (6.7%) blood collected in bottle more the 300 ml. 10 In Samartha et al. the amount of blood collected in suction bottle ranged from 50-200 ml. this amount of blood collected is comparable to our study in which 60% of patients were collected 101-150 ml of blood.

In my study 80 % 5 patients underwent vaginal delivery who had blood loss controlled by PPH sction canula and 20 % cases. In Damor P et al. 2021 Maximum deliveries were vaginal deliveries (61.7%) followed by operative vaginal delivery (20.8%) and caesarean section (17.5%). 10 Similar findings were reported by Samartha et al. Maximum number of patients (59%) with vaginal delivery, few had emergency caesarean section.

In my study 40 cases (16%) underwent blood transfusion, (8%)2 cases underwent platelet tansfusion and 32% 8 cases underwent FFP transfusion . In Damor P et al. 2021 19 women (15.83%) were transfused one unit packed cell volume, 8 women (6.67%) were transfused two unit packed cell volume, two women (1.67%) were

transfused three unit PCV and 10 women (8.33%) women transfused. 10 In Thawal Y et al. 2019 44 (55.0) cases had blood transfusion, 6 (7.5) cases had platelet transfusion and 2 (5.0) cases had FFP transfusion 13

In my study 2 cases (4%) cases of anemia , sepsis and shock and 44 cases (88 %) has no maternal morbidity. In the Thawal Y et al 2019 study it was observed 38 (62.5) cases had fever, 12 (15.0) cases had anemia, 2 (5.0) cases had CCF and 2 (2.5) cases had Sepsis. 13 S imilar maternal morbidity reported in study conducted by Kodla CS et al

In my study 40 % (20) underwent ICU and 60 % cases (30) in postop ward. In my study 32% cases of 20-24wk , 20 % (10)cases of 24-28wk, 14 % cases (7) of 25-37wk , 16 % (8) cases of 28-34wk . In Dr. Manju Meena , Dr. Pradeep Meena 2018 study 21 (84%) cases were delivered between 36–40 Weeks of gestational age and 2 (08%) patients had delivery between 40 week gestation.9

In my study 4 cases (8%) cases of plyhydramnios, 2 % cases (1) of prolong labour, 6 % cases (3) of obstructed labor, 6 % (8) cases of severe PIH, 2 % cases of abruption (10) 36 % cases of placenta previa (18), 8 % (4) cases of Twins, 4 % cases (2) of macrosomia . In Dr. Manju Meena, Dr. Pradeep Meena 2018 study obstructed labour 04(16%) and placenta previa 04(16%) was the commonest indication for use of SR cannula. 9 Next common indication for SR cannula use was polyhydroamniose 03(12%), prolonged labour 03(12%), severe PIH 03(12%), abruption placentae 03(12%) followed by macrosomia 02(08%) and multifetal pregnancy 02(08%).

In my study 25 cases that were treated medically and survived. 25 cases treated by PPHpanicker suction canula all patients were survived with PPH suction canula

CONCLUSION

Haemorrhage is the leading cause of the admissions to the intensive care unit and cause of the maternal mortality of the admissions to the intensive care unit and the most preventable cause of the maternal mortality. 13 and attention should be given to the safety of delivery-related procedures to reduce the risk of damaging other adjacent organs.There is not a universally agreed management strategy for PPH .12 Seventy percent cases were managed by medical methods while rest of the cases required for surgical evacuation of retained placenta tissue. 11 Thus we conclude that medical method is not sufficient for treatment of pph ,but medical method with Panicker suction canula is Gold Standard and savior in treatment of PPH

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