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A retrospective study of cases of Post Partum Haemorrhage at tertiary health care centre

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ABSTRACT

Background: Postpartum hemorrhage is one of the infamous triad of maternal death causes, in addition to hypertension and infection, specially in developing countries like India. Pregnancy involves significant health risk to a healthy women not having any preexisting health problem. The present study objectifies the prevention and treatment of post partum hemorrhage in tertiary care centre.

Materials and Methods: It is a retrospective study ,conducted in department of obstetrics and gynecology ,SOLA CIVIL HOSPITAL, Ahmedabad ,Gujarat, India , from July 2024 to July 2025. A total number of 70 cases of postpartum hemorrhage were studied out total 4116 deliveries conducted. According to the inculsion criteria , Data was collected and studied.

Results: In the present study we found , that the incidence of postpartum haemorrhage is 1.7% (70) ,majority of women were multigravida gravida 60%, in the age group of 25 to 30 years, with risk factors seen the patients like pre-existing anemia in 11.4% (8), PIH in 10% (7), previous LSCS in 12% (8) , Placenta previa in 20% (14) , Abruption in 35% (24) cases, multiple pregnancy in 5% (4), coagulation disorders in 7% (5) ,Uterine Antony was seen in 52% (36) cases and retained products in 10% (7) cases, There were 2.8% (4) cases of Uterine inversion, And more than 50% patients required Blood and Blood products, In present study 60s% (42) cases managed by medical method (uterotonic drugs). Surgical methods like cervical and vaginal repair was performed in 25% (17) cases , Uterine packing done in 35.7% (25)cases ,Bakri balloon catheter used in 1.4% (1) cases ,hysterectomy was performed in 2.8% (2) cases. This was possible due early identification and timely intervention.

Conclusion: Post partum hemorrhage is a potential life threatening complication of 3 rd stage of labour. Active management of third stage of labour is recommended in all the cacses. In the present study ,most of the cases are managed by medical methods . Uterotonics and bimanual uterine compression was used , while among surgical methods repair of cervical and vaginal lacerations was mostly required ,hysterectomy was also preformed in the cases if needed.

Keywords: *Post Partum, Haemorrhage, Obsteretrics, most crucial.*

INTRODUCTION

Obsteretrics hemorrgahe is one of the most leading cause of maternal mortality[1].Among all 4 stages of labour ,3rd stage is the most crucial , as the most dreaded complication, PPH occurs even in an uneventful delivery. Postpartum hemorrhage accounts for two-thirds of cases of obsteretrics hemorrhage and one quarter of maternal deaths[2] . PPH is a common complication of delivery and its incidence is commonly reported as 1% - 3% after vaginal delivery and 6% after cesarean section with uterine atony being the cause in about 50% cases. PPH accounts for 28% of all maternal deaths in developing countries while in developed countries it accounts for 13% of maternal deaths. [7]

Postpartum hemorrhage is classically defined as the blood loss from the maternal genital tract of more than 500mL during 3rd stage of labour or within 24 hours after delivery and more than 1000mL during cesarean section. But this theory is not accepted everywhere because almost half of all women delivered vaginally shed that amount of blood or more when losses are carefully measured. Moreover, approximately 5 percent of women delivering vaginally lose >1000 mL of blood (Pritchard, 1962)[1]Almost a third of women undergoing cesarean delivery have blood loss >1000 mL.(Clinical definition: Fall in haematocrit by more than equal to 10% at the time of admission and after delivery and excessive bleeding needing blood transfusion)

The American College of Obstetricians and Gynecologists (2019) now defines postpartum hemorrhage as cumulative blood loss >1000 mL or blood loss accompanied by signs and symptoms of hypovolemia.

Primary and secondary postpartum hemorraghe Primary PPH refers to PPH occurring within the initial 24 h. Secondary PPH is defined as significant vaginal bleeding that occurs between 24 h following placental delivery and throughout the subsequent 6 weeks[3,5]. regular assessment of vaginal bleeding, uterine tonus, fun dal height, temperature, and heart rate (pulse) routinely during the first 24 hours, starting from the first hour after birth should be done in all women
Causes of PPH includes :

1) Tone of Uterus.
2) Traumatic PPH
3) Reatined Placental tissue
4) Decreased Thrombin

The causes of Primary PPH includes,
Uterus atoy; Uterus atony refers to insufficient contraction of myometrial cells in response to release of endogenous oxytocin, if the uterus does not contract adequately, spiral arteries might keep bleeding.

Trauma; vaginal and cervical tears are more common in the women who undergo vaginal delivery, trauma occurs in the cases when there is defect in POWER, PASSAGE or PASSENGER during Normal Vaginal delivery.During caesarean section ,the injury to uterine artery, marginal tears or injury to the surrounding structures leads to prolonged bleeding episodes post delivery

Placenta accrete spectrum; PAS refers to the condition in which placental tissues abnormally adheres or invades various layers of uterus onto the myometrium (placenta accrete), infiltration into the myometrium (placenta increta) , or penetration through the myometrium into the surrounding organs (placenta percreta).PAS leads to the turning of pelvis into a highly vascular state that leads to risk of lifethreatning throughout pregnancy but it reaches to critical level during delivery.

The causes of secondary PPH includes;
Retained products of conception; Retained Products of Conception (RPOC) is one of the most common cause for bleeding after delivery ,refers to fetal or placental tissues that remain within the uter ine cavity after delivery or termination of pregnancy. may lead to the persistence and even expansion of physiological maternal arteriovenous shunting in the placental giving a marked vascularity or even an arteri ovenous malformation (AVM) behavior, which leads to bleeding.

The reported percentage of postpartum hemorrhage (PPH) in women with previous cesarean sections (CS) typically ranges from 2.5% to 15%, depending on the mode of current delivery and the number of previous scars.

Incidence by Number of Previous Cesarean Sections

One Previous CS:
Planned Cesarean Delivery: In studies focusing on women with one prior CS, the rate of PPH during a repeat planned cesarean is approximately 2.5%.

Trial of Labor (VBAC): The rate is significantly higher for those attempting a vaginal birth after one cesarean, reported at roughly 7.5%.

General Incidence: Other clinical studies report an overall PPH incidence of approximately 12% for women with a history of one previous CS

Two or More Previous CS:

Repeat Cesarean Section: For women undergoing a second cesarean section (meaning they have one previous scar), the incidence of PPH is approximately 14% to 15%.

Increased Risk with Multiple Scars: The risk of severe PPH (blood loss mL or transfusion) increases significantly with the number of scars. Women with previous CS scars have an adjusted odds ratio (AOR) of 4.08 compared to those with fewer or no scars.

Contributing Risk Factors
Beyond the number of previous scars, the risk of PPH in these patients is further elevated by:
Placental Abnormalities: History of CS increases the risk of placenta previa and placenta accreta spectrum, which are major causes of PPH.

Uterine Atony: Responsible for nearly 80% of PPH cases in cesarean deliveries.
General Anesthesia: Use of general anesthesia during a repeat CS is associated with a 4-fold to 5-fold increase in the odds of severe PPH.

Maternal Anemia: Predelivery hemoglobin is a strong independent predictor of PPH risk.

The percentage of PPH in women with one previous CS ranges from 2.5%
(planned repeat CS) to 12%, while the incidence for those undergoing a second cesarean section is approximately 15%.

National Institutes of Health (.gov)

Show all The risk of postpartum hemorrhage (PPH) in patients with a history of uterine surgery like myomectomy or hysterotomy is notably higher than in the general obstetric population.

Prevalence and Risk Statistics
Previous Myomectomy: The incidence of PPH in women with a history of myomectomy is approximately 10% to 16%.
One study found that 10.9% of patients who had undergone a previous myomectomy experienced PPH.

Another study reported a higher trend, with 16% of women with a prior myomectomy requiring blood transfusions due to hemorrhage compared to 8% in those without such history.

Previous Hysterotomy: While specific standalone percentages for non-cesarean hysterotomy are less frequently cited, any prior uterine scar is a known independent risk factor that significantly increases the odds of severe PPH.

Key Risk Factors
The likelihood of PPH in these patients is influenced by several clinical factors:
Uterine Rupture Risk: A prior myomectomy scar carries a 0.2% to 1.2% risk of uterine rupture during subsequent labor, which is a direct cause of catastrophic PPH.

Surgical Approach: Previous laparoscopic myomectomy may have a higher associated risk of PPH (aRR 3.54) and subsequent hysterectomy (aRR 7.74) compared to abdominal myomectomy in some cohorts.

Placental Abnormalities: Uterine scars from previous surgeries increase the risk of abnormal placentation (e.g., placenta accreta), which is responsible for over 50% of severe PPH cases requiring hysterectomy.

Fibroid Characteristics: If fibroids are still present, their size (>7.5 cm) and location (lower uterine segment) further escalate the risk of intraoperative and postpartum bleeding.

Uterine myomas: effect of prior myomectomy on pregnancy outcomes

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MATERIALS AND METHODS

Study Design: After due permission of the institutional review board ,this retrospective sobservational study was carried out at GMERS Medical college and Hospital Sola.

Study Time: Study was conducted from July 2024 to July 2025.
Data was collected from indoor case papers and hospital records as per proforma. Analysis of data was done by appropriate statistical methods. Patients who were complicated with both primary and secondary Postpartum hemorrhage were included.

Inculsion Criteria: Those patients who were admitted in GMERS Medical college and Hospital SOLA or reffered from other institutes with more than 28 weeks of pregnency who were complicated with PostPartum Hemorrhage were included.

Exclusion Criteria: Those with less than 28 weeks of pregnency or whose medical records were not included.
The management of the patients was done according to complications. All patients received active management of third stage of labor. Patients with uterine atony additional uterotonics were added. Patients with traumatic postpartum haemorrhage treated with the repair of trauma. Patients with retained placenta treated by doing manual removal of placenta under general anaesthesia. Patients with disorder of coagulation were transfused with blood and blood products. Patients with postpartum haemorrhage analysed for presence of risk factors and cause of bleeding and management was done accordingly

RESULTS

During study period total 4117 deliveries were conducted at GMERS Medical college and Hospital Sola which included both Normal Delivery and Caesarean Section, Amongst them 70 patients were complicated with Postpartum Hemorrhage , incidence of postpartum haemorrhage is 1.7% ,majority of women were multigravida 60%, in the age group of 25 to 30 years, with risk factors seen the patients like pre-existing anemia in 15% (10), PIH in 15% (10), previous LSCS in 12% (502) , Placenta previa in 20% (14) , Abruption in 35% (24) cases, multiple pregnancy in 5% (4), coagulation disorders in 7% (5) ,Uterine Antony was seen in 52% (36%) cases and retained products in 10% (7) cases, There were 2.8% (4) cases of Uterine inversion, And more than 50% patients required Blood and Blood products, In present study 70% (49) cases managed by medical method (uterotonic drugs). Surgical methods like cervical and vaginal repair was performed in 30% (21) cases , hysterectomy was performed in 2.8% (2) cases.

Table 1. Age distribution of cases.

Age	Frequency	Percentage
<25 Years	21	30%
25-30 Years	39	55.7%
>30 Years	10	14.2%
Total	70	100%

Table 2. Distribution of cases according to Parity.

Parity	Frequency	Percentage
Primigravida	28	40%
Multigravida	42	60%
Total	70	100%

Table 3. Distribution of Patients according to Risk Factors.

Risk Factors	Frequency	Percentage
Anemia	8	11.4%
PIH	7	10%
Prev CS	8	12%
Placenta Previa	14	20%
Abruption	24	35%
Multiple Pregnency	4	5%
Coagulation disorders	5	7%
Uterine Atony	36	52%

Table 5: Distribution of cases according to Etiology.

Cause	No of Cases	Percentage
Tone[Atonic]	36	52%
Trauma[Cervicovaginal lacerations, Vulval hematoma]	17	25%
Tissue	21	30%
Thrombin	7	10%

Table 4: Distribution of cases according to Management

Management	Frequency	Percentage
Medical Management (Uterotonic drugs and Bimanual Uterine compression)	42	60%
Surgical Management	28	40%
1.Repair of cervical and vaginal lacerations	17	25%
2.Removal of Retained Placenta	9	12.2%
3.Hysterectomy	2	2.8%
4. Uterine artery ligation	4	4.5%
Total	70	100%

Table 5: Distribution of patients according to Blood and Blood Products transfusion

Transfusion	Frequency	Percentage
PCV transfusion	53	75%
Platelets	14	20%
FFP	10	15%
Cryo	10	15%

DISCUSSION

Post Partum Hemorrhage occurs in approximately 1% to 3% of all deliveries and is leading cause of maternal morbidity and mortality worldwide[10], PPH accounts for 8% of maternal deaths in developing countries and 20% of maternal deaths in developed countries [according to National Institute of Health Liberary].

In our study all the patients who were reffered as well as admitted in the Hospital with more than 28 weeks of pregnency were included . Incidence of the Post partum Hemorrhage is 1.7% which in total 70 cases out of 4117 deliveries conducted at SOLA CIVIL HOSPITAL.In the present study most of the cases were of Primary Post partum Hemorrhage as compared to secondary , amongst them Uterine Atony was the most common cause ,accounting for 52% (36 cases).In Study of Lakshman L [13] shows 52.5% of Atonic PPH, and study of Ramani S [15] shows 79.11% cases of Atonic uterus. In international studies uterine atony was the most common cause of PPH, ranging from 50% to 76% of cases[8,9]. Hence the study signifies the impostance of "Active management of third stage of labour" in minimizing the blood loss Around 60% cases (42 patients) were multigravida. In the study of Yogesh Thawal et al [11] showed 60% cases of Multigravida , Rajeshwari [12] showed 42% PPH in Multigravida and 57% cases in Primigravida, Study of Ramani S [15] showed 50.2% cases of PPH in Multigravida female. Overdestension and Fatigue of the uterine muscles in subsequent pregnencies , reducing the contractility of the muscles. Retained products of conception account for 12.2% cases (9 patients). In the study of Lakshman L et al [13] showed 7.5% cases of PPH having retained products .12% patients (8 cases) had a history of Previous caesarean section , which increases the chances of adherent placenta and can prevent proper detachment and contraction of , increasing the chances of PPH. In the study of Rajeshwari [12] there were 19% cases of previous caesarean section, Lakshman L [13] study had 16.8% cases of previous caesarean section and V Uthpala [14] had 22% cases of previous caesarean section. 40% cases (28 patients) were Primigravida , which are more prone to cervical and vaginal lacerations ,specially with difficuly deliveries. In the present study repair of the lacerations was performed in 25% cases (17 patients).

Among the Risk factors , 11.4% cases (8 patients) had pre-existing anemia. 10% patients in the study of Yogesh Thawal et al [11] were anemic, 11% cases were anemic in the study of Rajeshwari [12] , 28% cases were anemic in the study of V Uthpala [14] . PIH was found in 10% cases (7 patients). 14.2% cases were PIH in study of Lakshman L [13] , 18% PIH cases in the study of V Uthpala [14] . 20% cases (14 patients) were having Placenta Previa . Previa was seen in 5% cases of PPH in the study of Rajeshwari [12] . Abruptio placenta was seen in 35% cases (24 patients). Abruptio placenta was seen in 12% cases of PPH in the study of V Uthpala [14] 7% cases (5 patients) had coagulation disorders. 6.7% cases of coagulation disorders in the study of Lakshman L [13] of PPH.

In the present study more than 50% patients (75% cases) needed Blood transfusion, Platelet transfusion in 20% cases and FFP and Cryoprecipitates in 15% cases of PPH.

CONCLUSION

Obstetrics is a Business of blood , and Post Partum Hemorrhage continues to be one of the most leading cause of maternal mortality and morbidity . Even in a healthy pregnant female with no other comorbidities , PPH can lead to morbidity and mortality of the female. Thus, early identification and treatment of the risk factors , timely interventions during the management of PPH , plays an important role.

In the present study most of the cases of PPH were due to atonic uterus and retained products of conception , suggesting the importance of Active Management of Third Stage of Labour and following all the components of AMTSL. In addition to that promote institutional deliveries, increase awareness regarding timely antenatal visits and maternal risk factors, and increase trained health care professionals. Accurate and prompt measures to minimize the blood loss during and after the delivery should be taken. Timely referral, regular training of the health care workers to tackle obstetric emergencies is the key to reduce the maternal mortality due to obstetric haemorrhage.

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