Section: Obstetrics & Gynecology

Original Research Article

RETROSPECTIVE STUDY ON EVALUATION OF TYPE, INTERVENTION DONE AND MATERNAL OUTCOME OF PPH IN A TERTIARY CARE HOSPITAL

Seeli Pranathi Raj[1], Yarlagadda Srilakshmi[2], Palaparthi Venkata Raghava Rao[3], Kovelamudi Vedasri[4]

[1,4]Third year, Department of Obstetrics & Gynecology, DR.PSIMS&RF, Chinoutpalli, Gannavaram, Andhra Pradesh, India.
[2]Associate Professor, Department of Obstetrics & Gynecology, DR.PSIMS&RF, Chinoutpalli, Gannavaram, Andhra Pradesh, India.
[3]Professor, Department of Obstetrics & Gynecology, DR. PSIMS & RF, Chinoutpalli, Gannavaram, Andhra Pradesh, India.

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Corresponding Author:
Dr.Yarlagadda Srilakshmi,
Associate Professor, Department of Obstetrics & Gynecology, DR. PSIMS & RF, Chinoutpalli, Gannavaram, Andhra Pradesh, India.
Email: yarlagaddasrilakshmi531@gmail.com

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ABSTRACT

Background: Post Partum Haemorrhage (PPH) is the most feared obstetric emergency . It can kill even a healthy woman if unattended[1]. 38% of maternal deaths are due to obstetric hemorrhage, of which PPH accounts for 25% cases.[2,3] Mismanagement of labor is the major risk factor for PPH.14 million women suffer PPH globally, out of which 25.7% occur in India.

Aims and objectives: 1.To study the incidence of PPH and its predisposing factors. 2.To study the maternal morbidity and mortality associated with PPH.

Material & Methods: This is a retrospective study conducted in the Department of Obstetrics and Gynaecology at Dr.PSIMS& RF for a period of 6months from November 2023 to April 2024 on 16 women who had PPH(out of 281 deliveries).

Results: 56.25% had normal vaginal deliveries.43.75% underwent caesarean section. 81.25% were primiparae and 18.79% were multiparae. 37.5% had anaemia ,6.25% had preeclampsia,12.5% had twin gestation and prolonged labour was observed in 18.75%. Atonic PPH was managed medically in 44.4% women with vaginal delivery and 28.5% who underwent caesarean section. 56.25% had blood transfusion and hypovolemic shock was seen in 6.25% cases.

Conclusions: Progression of postpartum haemorrhage from compensated to decompensated stage is very rapid and easily overlooked. It is a significant contributor for maternal mortality and morbidity. Hence prediction, early recognition and intervention are crucial for management of severe PPH and improving clinical outcome.

Keywords: Postpartum haemorrhage, Atonic PPH, Traumatic PPH, Maternal morbidity and Maternal mortality.

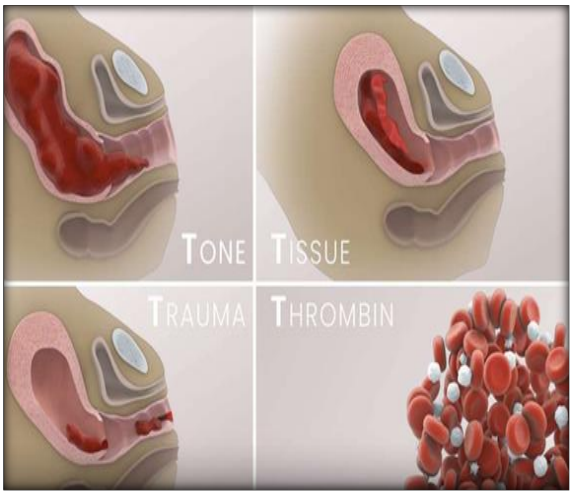
INTRODUCTION

Post-Partum Haemorrhage (PPH) is the most feared obstetric emergency. It can kill even a healthy woman if unattended[1]. 38% of maternal deaths are due to obstetric hemorrhage, of which PPH accounts for 25% cases[2,3]. Mismanagement of labor is the major risk factor for PPH. 14 million women suffer PPH globally, out of which 25.7% occur in India. PPH, according to WHO, is defined as blood loss from the genital tract in excess of 500ml following vaginal delivery and in excess of 1litre following caesarean delivery. Qualitatively, it is defined as any blood loss that has potential to produce haemodynamic instability should be considered as PPH. According to ACOG, Postpartum bleeding leading to either 10% change in the hematocrit between the antenatal and postpartum periods or a need for erythrocyte transfusion is considered as PPH. PPH is further classified as primary and secondary. Primary PPH is excessive bleeding in first 24hrs of delivery. Secondary PPH is excessive bleeding between 24hrs and 6-12weeks postnatally. It is major cause for maternal mortality and morbidity. Maternal mortality is the death of women from the complications arising during pregnancy, irrespective of duration and site of pregnancy and child birth within 42days of termination of pregnancy. As per the latest data from

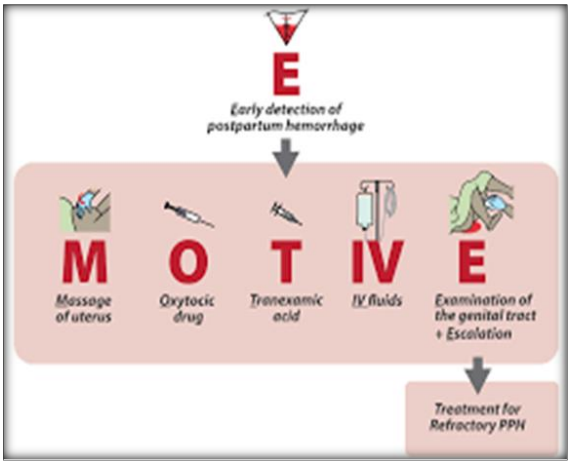
WHO & UNICEF, India accounts for 12% of world maternal deaths. In India, the leading cause for maternal death is obstetric haemorrhage, which has been reported in 47% of maternal deaths.

PPH is further classified into Minor(compensated) PPH – loss of 500-1000ml blood, moderate PPH- loss of 1000-2000ml and severe PPH – loss of >2000ml. Most deaths due to severe PPH occur during the first 24hrs after birth. If unattended, it will lead to morbidity and mortality.

The transition of haemorrhage from compensated to decompensated stage is rapid and easily overlooked. Hence prediction, early recognition and early intervention are needed to improve its clinical outcome. 1600 women die every day during child birth and among them, 500 women bleed to death. 99% of these cases are due to atonic PPH in the developing world. It is a major contributor for maternal "Near Miss". PPH is mainly of primary type. It occurs within 24hrs of delivery. The less common variety is secondary PPH. The cause of PPH is multi-factorial. There will be no identifiable risk factors in nearly 2/3rd of the patients. The most common causes of PPH are the 4Ts – Tone, Tissue, Trauma and Thrombin.



The third stage of labour is the most crucial stage among four stages of labour. To prevent this most dreaded complication, WHO is promoting "Active Management of Third Sage of Labour(AMTSL) for prevention of PPH. Components of AMTSL are Administration of oxytotic drugs, Delayed cord clamping and Controlled cord traction and countertraction.



MATERIALS AND METHODS

After obtaining Institutional ethics committee approval, our study was conducted. 281 women delivered at DR.PSIMS&RF between November 2023 and April 2024 for a duration of 6 months were included in our study. They were analysed with respect to age, parity, gestational age at delivery, presence of predisposing factors like anaemia, preeclampsia, polyhydramnios and multifetal gestation.

Mode of delivery, whether vaginal delivery or caesarean section, type of PPH, whether atonic or traumatic, severity of PPH, need for blood transfusion, complications like shock, DIC and need for operative intervention were analysed. Blood loss is estimated by weighing the soaked mops and blood clots.

Inclusion Criteria

1. Women with singleton or multi-fetal gestation with GA >28weeks.

Exclusion Criteria

1. Women with coagulation disorders.
2. Women on anticoagulants.

RESULTS

I.TYPE OF PPH

Out of 281 deliveries during six months, 5.69% women had PPH, of which Atonic PPH contributes to 87.5% cases whereas Traumatic PPH contributes to 12.5%. [Table 1]

II. MODE OF DELIVERY:

The incidence of PPH in relation to mode of delivery; NVD 56.25%, caesarean section 43.75%. [Table 2]

III, IV. DISTRIBUTION ACCORDING TO AGE AND PARITY:

The incidence related to parity; primipara 81.25%, multipara 18.75%. [Table 3]

The incidence of PPH according to age, 43.75% were in the age group between 26-30 yrs. [Table 4]

V. PREDISPOSING RISK FACTORS:

In 50% of the cases of PPH, there are no identifiable risk factors. Anaemia was seen in 12.5% cases, PET in 6.25%, twin gestation in 12.5% and prolonged labour in 18.75%. [Table 5]

VI. MANAGEMENT OF ATONIC & TRAUMATIC PPH IN VAGINAL DELIVERY:

44.4% were managed medically, 33.3% with bimanual uterine compression and 11.1% with balloon tamponade. [Table 6]

VII. MANAGEMENT OF ATONIC & TRAUMATIC PPH IN LSCS:

28.57% were managed medically,14.28% with bimanual uterine compression,14.28% with balloon tamponade and 28.57% with compression sutures. Bilateral uterine artery ligation was done for one patient who had traumatic PPH. [Table 7]

VIII. MATERNAL MORBIDITY AND MORTALITY ASSOCIATED WITH PPH:

Because of PPH, 37.5% became severely anaemic and hypovolemic shock was seen in 6.25% cases.

56.25% needed blood transfusions.

12.5% of the cases required ICU admission. [Table 8]

Table 1: Type of PPH

TOTAL NO OF DELIVERIES	POSTPARTUM HAEMORRHAGE	
281	Atonic PPH	14(87.5%)
	Traumatic PPH	2(12.5%)

Table 2: Mode of Delivery

MODE OFDELIVERY	NUMBER	PERCENTAGE
Normal vaginal delivery	9	56.25%
Caesarean section	7	43.75%

Table 3: Parity

parity	number	percentage
Primipara	13	81.25%
Multipara	3	18.75%

Table 4: Incidence of Age

AGE	NUMBER	PERCENTAGE
<20	4	25%
21-25	2	12.5%
26-30	7	43.75%
>30	3	18.75%

Table 5: Predisposing Risk Factors

High risk factors		PERCENTAGE
No risk factors	8	50%
Anemia	2	12.5%
Preeclampsia	1	6.25%
Twin gestation	2	12.5%
Prolonged labour	3	18.75%

Table 6: Management of PPH in vaginal delivery

TYPE OF PPH	INTERVENTION	NUMBER	PERCENTAGE
ATONICPPH	Medical management	4	44.4%
	Bimanual uterine compression	3	33.33%
	Balloon tamponade	1	11.11%

TYPE OFPPH	INTERVENTION	NUMBER	PERCENTAGE
TRAUMATIC PPH	Repair of cervical tear	1	11.11%

This case also had excessive bleeding from the episiotomy site for which suturing was done, but bleeding was not controlled with it. So, under fluoroscopic guidance, internal pudendal artery embolisation was done and the bleeding was controlled

Table 7: Atonic and traumatic PPH in caesarean section:

Type of PPH	Intervention	Number	Percentage
Atonic PPH	Medical management	2	28.57%
	Bimanual uterine Compression	1	14.28%
	Balloon tamponade	1	14.28%
	Compression sutures	2	28.57%

TYPE OF PPH	INTERVENTION	NUMBER	PERCENTAGE
TRAUMATIC PPH	B/L UTERINE ARTERY LIGATION	1	14.28%

Table 8: Maternal morbidity and mortality associated with PPH:

MORBIDITY	NUMBER	PERCENTAGE
Severe anemia	6	37.5%
Hypovolemic shock	1	6.25%
Blood transfusions	9	56.25%
ICU admissions	2	12.5%
Maternal mortality	0	0

DISCUSSION

281 deliveries, both vaginal deliveries and C-section were conducted at our centre in the study period. Out of these, 16 patients (5.69%) suffered from PPH. In a systemic review and meta-analysis done by Calvert C et al[1], the overall global incidence of PPH is 10.8% and the highest rate of PPH was observed in Africa (27.5%) and the lowest in Oceania (7.2%). According to Geller SE et al,[2] approximately 10% of women undergoing process of child birth suffer from PPH in India.

In our study , 87.5% cases suffered PPH due to Atonic uterus and the rest of 12.25% was due to trauma. Rogers J, Wood J[4] concluded in their study that 70-80% of primary PPH is due to uterine atony. According to Sentilhes et al,[5] traumatic PPH accounts for 15-20% of cases which is mainly attributed to episiotomy, uterine rupture, perineal lacerations etc. Zulala et al,[6] in their study concluded that 67% of patients suffering from PPH was due to atonic uterus secondary to prolonged labour, history of previous PPH, pregnancy induced hypertension, age>35yrs, etc.

In our study, primi para suffered highest from PPH 81.25% and rest of 18.75% were multipara. According to a study done by Gillian M.Maher,[7] primi para have more risk of PPH. According to NuliNuryanti Zulala et al[6], Pubu ZM et al,[8]primi mothers and pregnant women with >3 para are at high risk for PPH. These variations in observations of different studies may be attributed to awareness to obstetric health and sterilization after bearing one or two children in different geographical areas of the world.

In this study,pregnant women between 26-30yrs had high incidence of PPH. S Ramani, B Vijaya,[9]in their study concluded that >20yrs of age is a risk factor for PPH. According to Zhuo-Ma Pubu,[8] materal age >35yrs is a risk factor PPH. These variations in observations in different studies may be attributed to age of marriage and age of child bearing in different geographical locations.

In our study, it was observed that 50% of cases who suffered PPH had no identifiable risk factors. Anaemia was present in 12.5% cases, preeclampsia in 6.25%, twin gestation in 12.5% and prolonged labor in 18,75% cases. According to Tatsuya Fukami,[10] significant risk factors for PPH in their study were pregnancy induced hypertension, macrosomia, trauma to perineum. Ganesh Tondge and Anuprita Burande[11] in their study also concluded that there were no identifiable risk factors in 50% of their study population. However, in both the above mentioned studies, the authors observed a significant association of PPH with conditions like prolonged labour, pre-eclampsia, twin gestation and anemia.

In our study, patients who had normal vaginal delivery and suffered PPH due to uterine atony were managed conservatively or other methods like bi-manual uterine compression and balloon tamponade .One patient with traumatic PPH had excessive bleeding from episiotomy wound for which suturing was done initially. As bleeding was uncontrolled, fluoroscopic guided internal pudendal artery embolization was done. Patients who underwent C-section and suffered from PPH due to uterine atony were managed conservatively by medical management or compression techniques. One patient underwent bilateral uterine artery ligation for traumatic PPH during C-section.

The development of acute severe anemia in PPH in our study was found to be 37.5%, which contributed to maternal morbidity, as compared to study by Singh and Pandey[12] in Kanpur.

Intensive care was required for 12.5% cases in our study compared to study of Singh and Pandey (9.72%).[12]

CONCLUSION

Postpartum Haemorrhage is the most dreadful obstetric emergency. With proper antepartum, intrapartum and postpartum care, it not only can be prevented but also be managed effectively, thereby decreasing maternal morbidity and mortality.

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