

A Retrospective Study of Cases of Postpartum Hemorrhage in North IndiaManeesha Jain¹, Ritika Agarwal²¹Consultant Gynaecologist & Infertility Expert & Galaxy Hospital, Moradabad²Associate Professor, Venkateshwara Institute of Medical Sciences, Rajabpur, NH-24, Venkateshwara Nagar, Gajraula, Uttar Pradesh

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Abstract:

Introduction: Postpartum haemorrhage is the major cause of maternal morbidity & mortality across the world. Every year about 14 million women experience PPH resulting in about 70,000 maternal deaths globally. Obstetric hemorrhage accounts for more than 25% of maternal deaths annually. WHO suggests that 60% of maternal deaths in developing countries were due to PPH accounting for more than 100000 maternal deaths per year worldwide.

Objective: The present study was undertaken to study maternal morbidity and mortality in cases of PPH.

Materials and Methods: This was a retrospective study conducted in Galaxy Hospital and Venkateshwara Medical College from October 2023 to Dec 2023 on sample size of 84 patients.

Results: The records were analyzed with respect to maternal age, parity, socio-demographic & etiological profile and maternal consequences in cases of PPH at the center. In present study incidence of PPH came out to be 29% due to inclusion of all booked and referred cases. Main cause of PPH in this study was uterine atony (69%). Second common cause was traumatic (20%). Incidence of peripartum hysterectomy done for atonic cases was 12.00% and 5.8% in cases of rupture uterus. Blood transfusion was done in 80% of cases. Maternal death due to hemorrhage was 5.3%

Conclusion: Proper anticipation and skilled management, along with timely referral of PPH cases will lead to significant reduction in maternal mortality & mortality, as PPH is a significant contributor to maternal mortality. Maternal deaths due to PPH are clearly declining that is due to improved socioeconomic status, high standard medical and surgical management, use of NASG and expert care delivered at our institute.

Keywords: Postpartum hemorrhage, Maternal morbidity and mortality, Peripartum hysterectomy. Disseminated intravascular coagulation.

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Introduction

Despite of advances in knowledge and medical technology, women around the world continue to die of preventable pregnancy related causes. Severe obstetric hemorrhage is the most feared obstetric emergency that can occur to any woman at childbirth. [1] If unattended, the hemorrhage can kill even a healthy woman. Among all the four stages of labor, third stage is the most crucial as the most dreaded complication postpartum hemorrhage (PPH) may occur in an otherwise uneventful delivery changing it into a formidable disaster. Obstetrics hemorrhage accounts for 27% of the global figures, two third of which is due to PPH. The number reveals that 800 women die per day or one women die every two minutes. [2,3] Most of these are due to atonic PPH and more than 99% are in the developing world. Hemorrhage is the fifth or sixth leading cause of maternal death in developed countries. It accounts for the majority of cases that result in severe maternal or "near miss" obstetric

morbidity. Hemorrhage is the leading cause of death in developing countries. [4,5]

Most common type of obstetric hemorrhage is postpartum hemorrhage, mainly primary. PPH which occurs within 24hrs, primary PPH is the focus of this article. Obstetric hemorrhage accounts for 38% of maternal deaths among all deaths, PPH accounts for 25% among 38% of deaths. PPH is not only commonest and major killer but also fastest killer of mother. It kills mother within 1st 24hrs of delivery. [6] PPH is multifactorial still in many patients there is no identifiable risk factors so PPH is unpredictable and unpreventable but death due to PPH is preventable if delay is avoided. [7] Among all risk factors mismanagement of labor at any stage is main factor. So correct management at all stages of labor is surest prophylaxis. Intelligent anticipation, skilled supervision, prompt detection and effective institution of therapy can prevent and

control PPH and present further disastrous consequences and maternal death. [8]

FIGO defined PPH as a bleeding from the genital tract in excess of 500 ml and 1000ml following vaginal and caesarean birth respectively within first 24 hours after birth. Blood volume studies have shown that the normal woman loses about 500ml at the time of spontaneous vaginal delivery, more with the assisted vaginal delivery and up to 1000 ml at the time of caesarean section. Secondary PPH is defined as abnormal bleeding from the genital tract between 24 hours and 6 weeks postpartum. The common causes of PPH include uterine atony, lower genital tract lacerations, retained placenta & placental fragments, coagulation disorder and uterine inversion. Risk factors include Anemia, uterine overdistention, prolonged labor, placenta previa, hypertensive disorder, instrumental delivery etc. [9]

PPH is a significant contributor to maternal morbidity & mortality & one of the millennium development goals set by United Nation in 2000 is to decrease maternal mortality by three quarters by 2015. Now WHO has set a roadmap to combat postpartum hemorrhage between 2023 and 2030 by pursuing the required technical, investment and policy objectives that will deliver on priorities of ongoing global initiatives for maternal and newborn health. [10]

The aim of our study was to review the maternal records with respect to age, parity, socio-demographic & etiological profile and maternal consequences in cases of PPH at a private hospital.

Materials and Methods

After obtaining Institutional Ethical Committee approval this retrospective study was conducted in the department of Obstetrics & Gynecology, Galaxy hospital, Moradabad & Venkateshwara Institute of Medical Sciences, Rajabpur, NH-24, Venkateshwara Nagar, Gajraula, Uttar Pradesh from October 2023 to December 2023 on sample size of 84 patients. All the patients included in our study were admitted primarily in these Department and those referred from other health center of adjoining areas of Moradabad.

Records were analyzed with respect to maternal age, parity, socio-demographical & etiological profile and various complications occurring sequel to postpartum hemorrhage and maternal death. Estimation and diagnosis of PPH was based on visual estimation of blood loss 500 ml as well as general condition, tachycardia and fall in blood pressure or signs and symptoms of hemorrhagic shock for diagnosis of PPH.

Results

In our study total 84 patients had PPH all including booked and referred cases. Total obstetrical emergencies managed during the study period were 290 and the incidence of PPH cases found to be was 29%. Maximum number of cases (34 out of 84) were in 21-25 years age group. Incidence of PPH in relation to parity was primipara 40.4% and multipara 60.6% (Table 1).

Table 1: Distribution according to parity and age %

		Number	%
Parity	Primipara	34	40.4%
	Multipara (>=4)	50	60.6%
Age (yrs)	<20	10	11.9%
	21-25	34	40.47%
	26-30	37	44.04%
	>30	3	3.5%

In our study 40% cases were unbooked, belonging to rural area and low socioeconomic status. Out of all 50% PPH cases, there was no identifiable risk factor (Table 2).

Table 2: Presence of high risk factors

High risk factors	Number	Percentage
No factor	42	50
Anemia	34	40.4
Preeclampsia/eclampsia	6	7.14
Twins/polyhydramnios	2	2.3
Prolonged labour/obstructed labour	11	13.08

Main cause of PPH in this study was uterine atony 69% and 2nd common cause was traumatic 20% cases. Secondary PPH is less common than primary PPH i.e. about 1% of deliveries (Table 3).

Table 3: Distribution according to etiology of PPH

Etiology	Number	Percentage %
Atonic	58	69
Traumatic (Tear)	17	20.2
Cervicovaginal tear	12	
vulval haematoms	01	
Pelvic hematoma	01	
Rupture of uterus	03	
Coagulation defect	04	4.7
Mixed	05	6

Table 4 shows management done in cases of PPH to save patients life. Incidence of peripartum hysterectomy done for atonic cases was 12.06% and 5.88% for rupture uterus.

Table 4: Management done in cases of PPH

PPH	Number	Percentage %
ATONIC PPH	63	75
Medical management	35	42.6
Conservative		
Bimanual uterus compression	10	11.9
Balloon tamponade	6	7.1
Compression suture	4	4.7
Vessel ligation-b/l uterine, ovarian and internal iliac	13	15.5
NASG application	2	2.3
c) obstetric hysterectomy	14	16.67
TRAUMATIC PPH	17	20.2
Repair	12	14.28
Drainage of hematoma	01	1.2
Repair of rupture uterus	02	2.3
Hysterectomy	02	2.3
COAGULATION DEFECTS	4	
Transfusion of PCV/FFP/platelet	4	
Obstetric hysterectomy	0	

Table 5 shows maternal morbidity and mortality associated with PPH Development of acute severe anemia due to PPH in our study was found to be 61.9%. Hypovolemic shock and DIC was found in 20% and 3.5% of cases with PPH. Intensive care was required in 10.5% of cases. In 80.9% cases blood and blood products transfusion given. 2.4% cases had maternal death due to hemorrhage.

Table 5: Maternal morbidities and mortality associated with PPH

Morbidity	No of patients	Percentage
Severe anemia	52	61.9
Hypovolemic shock	17	20
Need of Blood Transfusion	68	80.9
DIC	04	4.7
Need to ICU ventilation	9	10.5
Maternal death	3	3.5
Atonic PPH	1	
Traumatic PPH	0	
Mixed	0	
Coagulation defects	02	

Discussion

Since in our study the inclusion criteria of PPH were all our and referred cases, therefore the incidence came out to be 29%, which is quite high as compared to the reported incidence which varies widely from 2- 10% A systematic review reported the highest rates of PPH in Africa (27.5%), and the

lowest in Oceania (7.2%), with an overall rate globally of 10.8%. [11,12] The rate in both Europe and North America was around 13% "Highest number of cases i.e. 37 out of 84 were in 26-30 years age group (Table 1), while other studies mention most cases being over 35 years. The reason for this difference perhaps lies in the younger age of

marriage in our country in general associated with the relative increased gravidity and parity at younger ages. [13] Multiparity, particularly grand multi-parity has been specified as a factor predisposing to increase frequency of PPH. In our study we found incidence of PPH in relation to parity primipara 40.4% and grand multipara 60.6%. Reason being different predisposing actors in primigravida like teenage pregnancy, preeclampsia, eclampsia, abruption, anemia, dysfunctional labor, uterine overactivity while high parity is the reason in multipara. [14]

In our study 40% of the patients were unbooked belonging to the rural areas with lower socioeconomic status reflecting the lack of proper antenatal care, illiteracy and ignorance among such population, as is also mentioned in other studies. [15] In 1/2 patients 50%, of PPH there is no identifiable risk factor. We found major PPH in maximum patients with one or more risk factors like anemia, preeclampsia, eclampsia, antepartum hemorrhage and twins. The main cause of PPH in this study was uterine atony with a frequency of 75% (Table 2). [16] In a study conducted by Ashraf et al, uterine atony was found in 34% of cases." In international studies uterine atony was the most common cause of PPH, ranging from 50% to 70% of cases. Second most common cause of primary PPH is traumatic. (20.2%) International studies also mention a frequency ranging from 9% to 20% of cases of traumatic lesions as the cause of PPH. The least common cause of PPH was coagulopathy (4.7%) which was in concordance with the study reported by Anderson et al. Secondary PPH is much less common than primary PPH, occurring in about 1% of deliveries. In our study the incidence of secondary PPH was 2.98% which is comparable to Kanpur study of Singh. Pandey of 2.4%. The incidence of peripartum hysterectomy done for atonic cases was 16.67% in our study (Table 4). In our study, cases of rupture uterus, 2.3 % of the patients underwent hysterectomy, as compared to the reports by McMohan and Miller, in which 10-20% of such women required hysterectomy for hemostasis. [17] The development of acute severe anemia due to PPH in our study was found to be 61.9% which also indirectly contributed to maternal mortality, a compared to 41.14% in a study by Singh and Pandey in Kanpur and 90.1% in a study conducted by Ayub et al. [18] It must be noted that the study conducted by Ayub et al takes into account all the cases with anemia whereas we took cases with only severe anemia, and thus the difference in our observations. Disseminated intravascular coagulation (DIC) was found in 6 of PPH in the study by Ayub et al. Hypo shock and DIC was present in 20% and 3.5% patients with PPH. The admission of obstetric to critical care facilities is low (published intensive units admission rates are 0.29% to 1.5% of deliveries industrialized countries). Inten-

sive care was required in 10.5% of our patients comparable to Kanpur study of Singh, Pandey of 9.72% The incidence was very much higher in our study because the majority of patients who were referred to our institution, had one or more complications, which required lifesaving support. Blood transfusions [19,20] on is recognized as one of the eight essential components of comprehensive emergency obstetric care (cEmOC), which has shown to reduce rates of maternal mortality. It was found that 80.214% of cases required blood transfusions, in sub-Saharan Africa, it is estimated that 25% of maternal hemorrhagic deaths are a direct consequence of the lack of blood transfusion services, and globally up to 150,000 pregnancy-related deaths could be avoided each year if women had access to safe blood. Maternal mortality due to hemorrhage was observed in 24-68% of women by different authors in our study maternal mortality due to hemorrhage was 3.5%. [21]

Conclusion

Hemorrhage continues to be the leading cause of maternal mortality worldwide, accounting for 34% of maternal deaths in Africa, 31% in Asia, 21% in Latin America, and 13% in developed countries." If effective measures are taken to ensure provision of antenatal care to all pregnant ladies, safe hospital deliveries and timely referral of high-risk pregnancies, complications are expected to reduce.

Preventable maternal deaths indicate gross violation of the basic human right of survival and highlight gross failure of health services on almost all fronts particularly in terms of choice of strategic interventions and their extent of coverage in population. Proper anticipation and skilled management, along with timely referral of PPH cases will lead to significant reduction in maternal morbidity & mortality, as PPH is a significant contributor to maternal mortality. So much so, that the 5 millennium development goal aims at reducing the maternal mortality by primarily reducing the number of cases of PPH. Every pregnancy should culminate in healthy mother and healthy baby and for that we need to ensure that all women have access to high quality essential and emergency obstetric service at first referral unit (FRU) level to reduce maternal mortality The frequency and impact of severe hemorrhage can be effectively reduced by reducing avoidable risk factors, especially those related to obstetric interventions as increased CS rate and induction and augmentation of labour with injudicious use of uterotonics. Other risk factors not amenable to change such as age, ethnic origin, and preexisting medical diseases or bleeding disorders can be minimized by extra vigilance and planned conjoined management. Most common cause of PPH is atonic PPH. PPH is multifactorial still in 1/2 patients no identifiable risk factor is found. Maternal deaths due to PPHI are clearly declining

that is due to improved socioeconomic status, high standard medical and surgical management, use of NASG and expert care available institutional deliveries.

Finally, surest prophylaxis of PPH is correct management of all stages of labour.

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