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Original Research Article

A Retrospective Study of PPH Cases at A Tertiary Health Care Centre

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Abstract:

Background: Postpartum haemorrhage is an obstetric emergency where it is one of the leading causes of maternal deaths worldwide. Many complications associated with maternal mortality are preventable and avoidable if rational scientific approaches are taken to management. The 1997-1999 UK confidential enquiries concluded that the routine use of national guidelines resulted in a significant decrease in deaths. Hence, this study is aimed to analyse risk factors, causes of PPH and morbidity and mortality due to PPH. Aim of this study is to study about risk factors, causes, morbidity and mortality of Postpartum Haemorrhage

Methods: This study was conducted in Department of Obstetrics and Gynecology, Government Dharmapuri Medical College, Dharmapuri as a retrospective observational study, study included all cases of PPH (including referred-in cases) in study period of June 2020-June 2022. Records were analyzed with respect to maternal age, parity, socio-demographical & etiological profile and various complications occurring as sequelae to postpartum hemorrhage and the maternal deaths.

Results: Records were analysed with respect to maternal age, parity, aetiology and maternal consequences in cases of PPH. In our study, incidence of PPH was found to be 1.2 % Most common cause of PPH was uterine Atony (80%).The second most common cause of PPH was Genital tract Trauma (17%).16% of the cases needed transfusion of blood. Maternal death due to PPH in our study was 0.02 %

Conclusion: Proper risk stratification and identification, skilled management along with the timely referral will lead to significant reduction in maternal morbidity and mortality. Maternal deaths due to PPH are clearly declining due to timely referral, intervention and education of healthcare workers.

Keyword: PPH, Mortality, Morbidity, Atonic, Parity, etc.

Introduction

Postpartum Haemorrhage is one of the most common causes for maternal death, representing around 35% of all maternal deaths around the world. The lives and health of the affected families are significantly impacted by these deaths.[1, 2]

According to the World Health Organization (WHO) [3], PPH is typically characterized by a blood loss of 500 milliliters or more within the first 24 hours of life, while severe PPH is characterized by a blood loss of 1000 milliliters or more within the same time period. PPH also refers to abnormal small blood loss that causes the women to be hemodynamically unstable.

PPH occuring within the first 24 hours after birth is defined as Primary PPH; whereas secondary PPH is any excessive bleeding from the birth canal that occurs between 24 hours and 12 weeks postpartum (after delivery).Atony, uterine rupture, retained placental tissue, genital tract trauma (vaginal or cervical lacerations), and maternal bleeding disorders are all the possible causes of PPH. Uterine atony is the leading cause of PPH.

PPH occurs in 2% - 4% of vaginal deliveries and in 6% of caesarean deliveries with uterine atony accounting for roughly half of all the cases. PPH affects approximately 14 million women worldwide annually[4]. During the survey of causes of maternal death that was conducted in India in 1998, the sample registration scheme (SRS) found that PPH was a major cause of maternal mortality and was responsible for 30% of maternal deaths.[5] According to the SRS from 2001 to 2003, PPH was responsible for 38% of maternal deaths.[6] Based on this , aim of our study is to evaluate about risk factors, causes, morbidity and mortality of postpartum haemorrhage.

Materials and Methods

This study was conducted in Department of Obstetrics and Gynecology, Government Dharmapuri Medical College, Dharmapuri as a retrospective observational study, study included all cases of PPH (including referred-in cases) in study period of June 2020-June 2022. Records were analyzed with respect to maternal age, parity, socio-demographical & etiological profile and various complications occurring as sequelae to postpartum hemorrhage and the maternal deaths.

Estimation and diagnosis of PPH was based on the visual estimation of blood loss >500ml. Study was started after obtaining permission from Institutional human ethics committee. Informed consent was obtained from all patients included in the study. Statistical analysis was done using SPSS software version 23.Distribution was analyzed in percentiles

Results

During our study period a total of 20,100 deliveries was conducted at GDMCH in the two year time period, 240 cases had PPH. So, the incidence is 1.2% among deliveries conducted in our hospital.. In detail it was 1.7% (n=159) among mother who delivered by labor naturalis. It was 0.7% among patient who delivered by LSCS and only 10 mothers who delivered by Assisted Vaginal delivery developed PPH, among which 3 was delivered by VBAC. As a total our study includes 271 cases of PPH, which includes 31 referred-in cases. Among 31 referred cases 26 was delivered in nearby Primary health centers and 4 was home delivery.

In our study 52% were primiparous and among which 17% belonged to the teenage group 33% were gravida 2 and rest 15% were gravida 3 or more than 3. Coming to age distribution among our mothers 47 was less than 20 years, 165 were between 20-25

years, 48 were between 26 to 30 years and 11 were more than 30 years age group.

In 41% of those PPH cases, there was no identifiable risk factor. Most common risk factor was anemia (16%) followed by Teenage pregnancy (15%), High order birth was risk factor in 12% of mothers. Followed by this previous LSCS was risk factor in 6% and PIH in 5% of mothers. Twins and placenta previa was present in 2% of mothers each while abruption was present in one percent of mothers.

Next we analyzed main causes of PPH and uterine atony being most commonest (80%) followed by Genital tract trauma in 16% of mothers .Retained placenta was the reason in 3% of mothers and coagulation defect in 1% of mothers.

Table 1: Morbidity

Morbidity	Number of Patients	Percentage
Severe Anemia	32	11.80%
Hypovolemic Shock	18	6.60%
Dic	4	1.40%
Required Blood Transfusion	45	16.60%
Required Icu Ventilation	6	2.00%

Coming to morbidity in our study 11.8% (n=32) developed anaemia as complication, 18 patients (6.6%) developed hypovolemic shock and 4 mothers (1.4%) developed disseminated intravascular coagulation. While 45 patients required some form of blood transfusion, 6 patients ended up in requiring Ventilator in ICU.

Maternal death due to PPH in our study was 2 %, a total of 5 mothers died in our study population and 3 was due to atonic PPH. One was due to traumatic PPH and one was due to coagulation defects.

Table 2: Mortality

Mortality	Number of Patients	Percentage
Atonic Pph	3	1.10%
Traumatic Pph	1	0.40%
Coagulation Defects	1	0.40%

Discussion

In 2015, the maternal mortality ratio was 239 per 100,000 live births in developing countries, compared to 12 per 100,000 live births in developed countries. Every day, 830 women worldwide die from pregnancy or childbirth-related complications. Hemorrhage, sepsis, and hypertensive disorders are the three most common preventable causes of maternal death, accounting for 52% of maternal deaths. According to WHO statistics, PPH accounts for 25% of maternal deaths. Postpartum Haemorrhage is the fastest of maternal executioners; if not treated, can kill even a healthy woman in two hours.[7] The incidence of PPH in our study is 1.2% which is comparable to the study conducted by Tatsua Fukami et al[8] also which is quite high as compared to the reported incidence which varies widely from 2-10%. [9] Highest number of cases i.e.68 out of 168 were in 21–25 years age group, while other studies mention most cases being over 35 years. [10] 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. Multiparity, particularly grand multi-parity has been specified as a factor predisposing to increase frequency of PPH

In our study 52% were nulliparous women and 48% were multiparous women which is comparable to the observations made by few previous studies. Cause being different

predisposing actors in primigravida like teenage pregnancy, preeclampsia, eclampsia, abruption, anemia, dysfunctional labour, uterine overactivity while high parity is the reason in multipara.[11] Vaginal delivery accounted for 66% of the study population which is comparable to that of the results obtained by Sijjian Li et al.

The most common cause of PPH in our study is Uterine atony which was coo parable to the observation by Lil Trine Nyflot et al.[12] In a study con-ducted by Ashraf et al, uterine atony was found in 34% of cases. [13] In international studies uterine atony was the most common cause of PPH, ranging from 50% to 76% of cases[14] The second most common cause of primary PPH is traumatic (20%). 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 (8.9%) which was in concordance with the study reported by Anderson et al.[15] Around 5% of the study population has PIH as a risk factor which was comparable to the observation made by Sijjian Li et al.

In our study 21% of the cases managed by uterotonicas alone which was comparable to the results obtained by Shamshad Bibi et al[16]. 1% of the patients needed hysterectomy due to severe PPH which is comparable to the observation made by Silji Pettersen et al[17]. This is very less as compared to the reports by McMohan and Miller, in which 10-20% of such women required hysterectomy for hemostasis.[18]. This may be due to early intervention and meticulous care from our institution.

Coming to morbidity in our study 11.8% (n=32) developed anaemia as complication, 18 patients (6.6%) developed hypovolemic shock and 4 mothers (1.4%) developed disseminated intravascular coagulation. It must be noted that the study conducted by Naz et al took into account all the cases with anaemia and incidence was 40.5% whereas we took cases with only severe anaemia, and thus the difference in our observations. Disseminated intravascular coagulation (DIC) was found in 6% cases of PPH in the study by Naz et al.[19] While 45 patients required some form of blood transfusion, 6 patients ended up in requiring Ventilator in ICU. In sub Saharan Africa, it is estimated that 26% 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. Intensive care was required in 10.5% of our patients comparable to Kanpur study of Singh, Pandey of 9.72%. [20] The incidence was very much higher in above study because the majority of patients who were referred had one or more complications, which required lifesaving support.

Maternal death due to PPH in our study was 2 %, a total of 5 mothers died in our study population and 3 was due to atonic PPH. One was due to traumatic PPH and one was due to coagulation defects. Maternal mortality due to haemorrhage was observed in 24-68% of women by different authors.[21,22]. This huge difference in the percentage mortality reflects the high standard of medical and surgical facilities available and the expert care delivered at our institute.

Conclusion

Since PPH is a significant cause of maternal mortality, effective anticipation, skilled management, and prompt referral of cases will significantly reduce the maternal morbidity and mortality. In order to cut down on maternal mortality, we need to make sure that every pregnant woman has access to high-quality essential and emergency obstetric services at the first referral unit (FRU) level. The recurrence and effect of serious blood loss can be actually decreased by diminishing avoidable factors, particularly those

connected with obstetric mediations such as increase in Caesarean section rate and induction and augmentation with unwise utilization of uterotonics. In addition to age, preexisting medical conditions, and bleeding disorders, other risk factors that cannot be changed can be reduced through increased vigilance and planned joint management.

Atonic PPH is the most common cause of PPH. Though PPH is multifactorial, in 49% patients, no recognizable risk factor is found. The best prophylaxis of PPH is right administration at all phases of labour. Improved socioeconomic status, high-quality medical and surgical management, use of NASG and Suction cannula, and expert care at our institute are clearly contributing to a decline in PPH-related maternal deaths.

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