Section: Obstetrics and Gynaecology

Original Research Article

STUDY ON PRIMARY POSTPARTUM HAEMORRHAGE IN TERTIARY CARE CENTRE

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ABSTRACT

Background: Post-partum haemorrhage is defined as blood loss from the genital tract, exceeding 500ml within 24hours of vaginal delivery and 1000ml during caesarean section. It is also now a day defined as any blood loss that has a potential to produce or produces hemodynamic instability. Massive obstetric haemorrhage is a major cause of maternal mortality and morbidity worldwide.
Aims: Aim of study is to know its risk factors, associated morbidity and mortality and its burden on maternal health and health care system.
Materials and Methods: This was observational study conducted in department of Obstetrics & Gynaecology. in total 460 patients 143 included in our study were admitted in department and those referred from primary and community health centre admitted in tertiary care center with primary diagnosis of postpartum hemorrhage. Pregnant lady delivered at patient had major primary post-partum haemorrhage (more than 1000ml blood loss).
Results: In our study total 460 patients 143 had PPH all including booked and referred cases, so incidence was 31%. Highest number of cases i.e. 65 (45.45%)out of 143 were in 21-25 years age group. Incidence of PPH in relation to parity was primipara 56.64%. PPH was noted in 54 vaginal deliveries and 89 caesarean sections. The most common risk factor for PPH is anemia, followed by multiparity and preeclampsia. Main cause of PPH in this study was uterine atony i.e. 70.6% and 2 nd common cause was traumatic 22% cases. Among the cases studied, 80 cases responded to uterotonics and uterine massage only, in 34 cases balloon tamponade was effective in controlling PPH, 17 cases needed compression sutures, in 8 cases uterine artery ligation was done and hysterectomy was done in 1 case. Development of acute severe anemia due to PPH in our study was found to be 51.7%. Hypovolumic shock and DIC was found in 21.6% and 3.5% of cases with PPH. 92.3 % cases blood and blood products transfusion given. 3.5v % cases had maternal death due to haemorrhage.
Conclusion: The present study concluded that anaemia is the major risk factor contributing to PPH, followed by multiparty and preeclampsia. Early identification of risk factors and treatment of preventable ones like anaemia, implementation of prevention strategies should be mainstay of management. Avoidance of delay in identification and transfer, identification of high-risk cases and timely transfer and referral to higher centres.
Keywords: Postpartum haemorrhage, Maternal morbidity and mortality, Peripartum hysterectomy, Disseminated intravascular coagulation.

INTRODUCTION

Primary postpartum haemorrhage is a leading cause of maternal mortality and morbidity internationally. In Africa and Asia, haemorrhage (all types) accounts for approximately one-third of all the maternal deaths.[1] Primary postpartum haemorrhage is often defined as a blood loss of over 500 mL during or within the first 24 hours after the delivery.[2] Postpartum haemorrhage (PPH) has been a nightmare

for obstetricians since centuries,[3,4] in the third stage management by birth setting, significantly fewer women who gave birth at home had a blood loss of between 501 and 1,000 mL or greater than 1,000 mL than the women who gave birth at a tertiary hospital. Uterine atony is the most common cause of PPH, in about 75- 90% of cases. Other causes include placenta previa, accreta, lower genital tract laceration, coagulopathy, uterine inversion and ruptured uterus.[6,7] Other risk factors not amenable to change such as age, ethnic origin, and pre-existing medical diseases or bleeding disorders can be minimized by extra vigilance and planned conjoined management. Generally, PPH requires early recognition of its cause, immediate control of the bleeding source by medical, mechanical, invasive-non-surgical and surgical procedures, rapid stabilization of the mother's condition, and a multidisciplinary approach.[8] Oxytocin, syntometrine, ergometrine, PGF2 alpha and misoprostol are different medical preparations used as uterotonics for prophylaxis and therapeutic management of PPH. Aim of study is to know its risk factors, associated morbidity and mortality and its burden on maternal health and health care system.

MATERIALS AND METHODS

This was observational study conducted in department of Obstetrics & Gynaecology. in total 460 patients 143 included in our study were admitted in department and those referred from primary and community health centre admitted in tertiary care center with primary diagnosis of postpartum hemorrhage.

Inclusion Criteria: pregnant lady delivered at patient had major primary post-partum haemorrhage (more than 1000ml blood loss).

Exclusion Criteria: referred patient in view of PPH, secondary PPH, and any bleeding which already started antenally like antepartum haemorrhage.

Careful observation of vitals will be done. Women with blood loss greater than or equal to 500ml after normal vaginal delivery and loss greater than or equal to 1000ml after caesarean section within 24hrs after childbirth, women who are already anemic with blood loss less than 500ml but develop signs and symptoms of hemodynamic instability.

Assessment of blood loss was done majorly by visual assessment of blood loss. In addition to it, blood loss during caesarean section was measured using graduated containers. In this method, contamination by amniotic fluid was a limitation. In case of a vaginal delivery and also during caesarean section mops and swabs were used which were measured prior and after soakage to calculate the amount of blood loss.

History of previous PPH causes of PPH, use of oxytocin in the first stage for more than 6 hours. Role of blood transfusion, presence of senior faculty, and type of uterotonics used.

Statistical Analysis: Data were analysed by using basic descriptive statistics tool.

RESULTS

In our study total 460 patients 143 had PPH all including booked and referred cases, so incidence was 31%.

Highest number of cases i.e. 65 (45.45%)out of 143 were in 21-25 years age group. Incidence of PPH in relation to parity was primipara 56.64% . PPH was noted in 54 vaginal deliveries and 89 caesarean sections. [Table 1]

The most common risk factor for PPH is anemia, followed by multiparity and preeclampsia. Other important risk factors are placenta previa, abruption, multiple pregnancy, polyhydramnios, prolonged labour, precipitate labour, big baby, induced labour, obesity, extremes of age. [Table 2]

Main cause of PPH in this study was uterine atony i.e. 70.6% and 2 nd common cause was traumatic 22% cases. [Table 3]

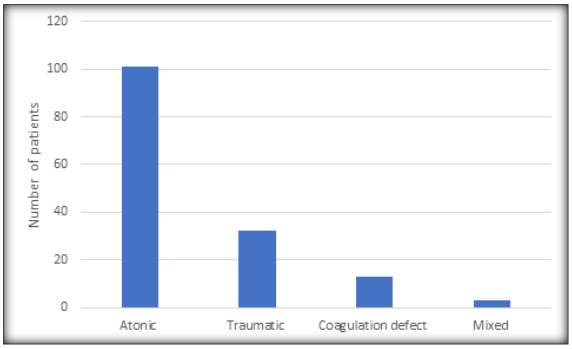

Figure 1: Major causes of PPH

Among the cases studied, 80 cases responded to uterotonics and uterine massage only, in 34 cases balloon tamponade was effective in controlling PPH, 17 cases needed compression sutures, in 8 cases uterine artery ligation was done and hysterectomy was done in 1 case. [Table 4]

Development of acute severe anemia due to PPH in our study was found to be 51.7%. Hypovolumic shock and DIC was found in 21.6% and 3.5% of cases with PPH.

92.3 % cases blood and blood products transfusion given. 3.5v % cases had maternal death due to haemorrhage. [Table 5]

Table 1: Distribution according to age and partity

Age in years	Number of patients	Percentages
<20	31	21.68

21-25	65	45.45
26-30	42	29.37
>30	5	3.50
Parity		
Primipara	81	56.64
Multipara	62	43.36
Mode of delivery		
Vaginal	54	37.76
Caesarean	89	62.24

Table 2: Presence of risk factors

Risk factors	Number of patients	Percentages
Anemia	90	62.94
Multiparity	39	27.27
Preeclampsia	42	29.37
Placenta previa	6	4.20
Abruptio placentae	14	9.79
Prolonged labour	14	9.79
Precipitate labour	9	6.29
Multiple pregnancy	8	5.59
Big baby	8	5.59
Polyhydramnios	12	8.39
Obesity	14	9.79

Table 3: Distribution according to etiology of PPH

Etiology	Number of patients	Percentages
Atonic	101	70.63
Traumatic	32	22.38
Cervicovaginal tear	27	18.88
Vulval hematoma	1	0.70
Pelvic hematoma	3	2.10
Rupture of uterus	1	0.70
Coagulation defect	13	9.09
Mixed	3	2.10

Table 4: Management done in cases of PPH

Management	Number of patients	Percentages
Uterotonics+Uterine massage	80	55.94
bimanual uterus compression	17	11.89
balloon temponade	34	23.78
Vessel ligation- b/l uterine, ovarian and internal iliac	8	5.59
NASG application	3	2.10
obstetric hysterectomy	1	0.70

Table 5: Maternal morbidities associated with PPH

Maternal morbidities	Number of patients	Percentages
Severe anemia	74	51.75
Hypovolemic shock	31	21.68
DIC	5	3.50
Need of blood transfusion	132	92.31
Need of ICU ventilation	32	22.38
Death	5	3.5

DISCUSSION

Postpartum hemorrhage is one of the most important and common complication of third stage of labour. It is one of the most leading cause of maternal mortality accounting for a quarter of maternal deaths worldwide. In developing countries, its incidence is higher, and causes 140,000 deaths annually and accounts for 60% of maternal deaths. PPH occurs in 4-5% of all deliveries. Uterine atony is the commonest cause accounting to around 80% of all cases.

In our study incidence came out to be 31 %, comparable to Ganesh Tondge et al,[9] which is 29%, which is quite high as compared to the reported incidence which varies widely from 2- 10%. A systematic re-view 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%. The rate in both Europe and North America was around 13%.[10,11]

Highest number of cases i.e. 65 (45.45%)out of 143 were in 21-25 years age group. Incidence of PPH in relation to parity was primipara 56.64%. PPH was noted in 54 vaginal deliveries and 89 caesarean sections.[12] 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.

Highest number of cases i.e. 65 (45.45%)out of 143 were in 21-25 years age group. Incidence of PPH in relation to parity was primipara 56.64%. Reason 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.

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 70.6%. In a study con-ducted by Ashraf et al, uterine atony was found in 34% of cases.[12] In international studies uterine atony was the most common cause of PPH, ranging from 50% to 76% of cases. The second most common cause of primary PPH is traumatic (22%). International studies also mention a frequency ranging from 9% to 20% of cases of traumatic lesions as the cause of PPH.[13] The least common cause of PPH was coagulopathy (8.9%) which was in concordance with the study reported by Anderson et al.[14] Secondary PPH is much less common than primary PPH, occurring in about 1% of deliveries.[4] In our study the incidence of secondary PPH was 2.98% which is comparable to Kanpur study of Singh, Pandey of 2.4%.[15]

In this study, 55.9% cases were managed using only uterotonics [oxytocin, ergometrine, prostaglandins-prostadin and PGE1]. 23.7% required ballon tamponade, 12.85% needed compression sutures, 5.5 % needed uterine artery ligation (BUAL) and 0.7% needed hysterectomy in addition to uterotonics. In Ganesh Tondge et al,[9] study 57.14% cases were managed using only uterotonics [oxytocin, ergometrine, prostaglandins- prostadin and PGE1]. 23.57% required ballon tamponade, 12.85% needed compression sutures, 6.42% needed uterine artery ligation (BUAL) and 0.71% needed hysterectomy in addition to uterotonics which is compared to our study. In a study by Bibi et al,[16] 78% cases of atonic PPH were controlled with uterotonics. Manual removal was done in 8% cases, compression sutures were applied in 2.2% and hysterectomy was done 3.67% cases. Su LL et al,[17] study reported that 100 µg of intravenous carbetocin is more effective than oxytocin for preventing PPH in women undergoing caesarean deliveries.

The development of acute severe anemia due to PPH in our study was found to be 51.7 % which also indirectly contributed to maternal mortality, as compared to 41.14% in a study by Singh and Pandey in Kanpur,[15] and 90.1% in a study conducted by Ayub et al.[18] It must be noted that the study conducted by Ayub et al,[18] 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 3.5 % cases of PPH in the study by Ayub et al.[18] Hypovolemic shock and DIC was present in 21.6% and 3.5% of our patients with PPH. The admission of obstetric patients to critical care facilities is low (published intensive care units admission rates are 0.29% to 1.5% of deliveries in industrialized countries). 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 life saving support. Blood transfusion is recognized as one of the eight essential components of comprehensive emergency obstetric care (cEmOC), which has shown to reduce rates of maternal mortality.[19] It was found that 92% of cases required blood transfusions. In subSaharan 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.[20]

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 5th 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.

CONCLUSION

The present study concluded that anaemia is the major risk factor contributing to PPH, followed by multiparty and preeclampsia. Early identification of risk factors and treatment of preventable ones like anaemia, implementation of prevention strategies should be mainstay of management. Estimation of blood loss must be done accurately along with careful assessment of clinical status of woman using shock index and urgency grid. Institutional deliveries will help prevent and manage this complication in an effective manner. Facility preparedness in all respects will prevent deaths due to atonic PPH. Wise prompt decisions regarding use of different modalities and their combinations will prevent morbidity and mortality. Technical expertise, confidence and surgical skills are essential to manage complicated cases. Anaesthesia, ICU backup and availability of blood and components improve outcome. Avoidance of delay in identification and transfer, identification of high risk cases and timely transfer and referral to higher centres.

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