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Outcome of Primary Postpartum Haemorrhage in North Bengal Medical College Hospital

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ABSTRACT

Introduction: Postpartum haemorrhage (PPH) is a major cause of maternal morbidity and mortality worldwide. Rapid recognition of clients at risk of PPH and early diagnosis is essential for successful management and favorable outcome of labour. The study was conducted to determine the predisposing factors for primary PPH. ***Methods:*** This is a descriptive type of cross-sectional study conducted at the Obstetrics and Gynaecology Department of North Bengal Medical College Hospital (NBMCH), Sirajganj, among 88 pregnant women who developed primary PPH after delivery. Data were abstracted from the medical and delivery records. All cases with primary PPH were included. All study subjects were interviewed of socio-demographic risk factors, medical and obstetric histories, antenatal events, labour and delivery outcomes. ***Results:*** Among the total 88 patients, 42 (47.73%) belonged to 26-30 years age group. Most of the responders 60 (68.18%) were housewife and completed their primary level of education 56 (63.64%). Primary PPH occurred mostly after vaginal delivery 73 (82.95%) and rest were after caesarean section 15 (17.05%). Common causes of primary PPH were atonic uterus 54 (61.36%), retained bits of placenta 12 (13.64%), cervical tear 10 (11.36%) and remaining were vaginal tear, inverted uterus, ruptured uterus. PET/Eclampsia (12), multiple pregnancy (11), polyhydramnios (10), macrosomia (06) and instrumental delivery (05) were the common risk factors. The majority 61 (71%) were treated conservatively in which fundal massage was done in 32 (52.11%) cases. Regarding surgical management, majority of the patients (10, 47.62%) were managed by repair of cervical and vaginal tear. Other managements include manual removal of placenta (6, 28.57%) and subtotal hysterectomy (2, 9.52%). A small number of patients was managed by B-lynch suture (1, 4.76%), repair of ruptured uterus (1, 4.76%) and ligation of uterine arteries (1, 4.76%). Among the patients (22, 25%), had developed complications due to shock. Other cases of complications were puerperal sepsis (10, 11.36%) and acute renal failure (1, 1.14%). Death occurred in five patients, due to shock in two patients (40%), one patient each due to sepsis, ARF and DIC. ***Conclusion:*** Efforts to reduce the incidence of PPH should be taken for proper management of labour about the mentioned risk factors.

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INTRODUCTION

Post partum haemorrhage (PPH) is an obstetrical emergency that can follow vaginal or caesarean delivery. Primary PPH is blood loss greater than 500 ml from the genital tract within the first 24 hours following delivery.[1] This compares with greater than 1000 ml of blood loss for caesarean section. The mean blood loss reported after vaginal and caesarean deliveries were approximately 500 ml and 1000 ml respectively.[2] Worldwide the average maternal mortality from PPH is 25%.[3] In Bangladesh about 31% of maternal death occurs due to PPH.[4]

PPH is best diagnosed clinically as excessive bleeding that makes the patient symptomatic with pallor, weakness, palpitation, restlessness, confusion, syncope and result in sign of hypovolemia (e.g., hypotension, tachycardia, oliguria, low oxygen saturation). A timely, accurate diagnosis of PPH is important to initiate intervention and improve outcome.[5] Atonicity of the uterus is the commonest (90%) cause of immediate PPH.[6] Other causes include trauma (cervical, vaginal, perineal), retained or adherent placental tissue, clotting disorder, inverted uterus, ruptured uterus.[6]

Factors thought to increase the risk for PPH are over distension (multiple pregnancy, macro-somia/polyhydramnios), prolonged labour, induced or augmented labour, grand multiparity (more than 4), instrumental delivery, pre-eclampsia, problems with placenta (e.g., retained placenta, placenta previa), previous PPH, maternal bleeding disorder.[7] Complications from PPH includes hypovolemic shock and anaemia, blood transfusion may be necessary and carries associated risks. In severe cases, haemorrhagic shock may lead to anterior pituitary ischaemia with delay or failure of lactation (i.e. postpartum pituitary necrosis).[8] Acute renal failure, DIC and death may also occur.[9] Prevention of uterine atony is the key for reducing the incidence of PPH. Preventive measure includes active management of 3rd stage of labour which involves- administration of uterotonic agents within one minute after the birth of baby, controlled cord traction, uterine massage after the delivery of placenta.[10] Oxytocin, ergometrine, and mis-oprostol are different medical preparations used as uterotonics for prophylaxis and therapeutic management of PPH.[11]

When there is uterine atonicity, conventional managements like bimanual compression, balloon catheterization is prescribed. When all these measures fail, exploration of the uterine cavity should be done quickly to remove any placental beats or blood clots to make the effective contraction of uterus. In most of the cases, the above mentioned measures will control the bleeding but when proved inadequate and unsatisfactory, various surgical measures like ligation of the uterine artery, bilateral ligation of the internal iliac artery, ligation of the ovarian artery , sometimes B-Lynch suture can be tried. Hysterectomy is used as a last measure to save the life of the patient. Women with a prior PPH have as much as a 10% risk of recurrence in subsequent pregnancy. Thus, it is important to set up a regular protocol and profile for the risk of primary PPH to reduce maternal morbidity and mortality. So, this study gives an insight to the obstetrician about the post partum obstetric care in Bangladesh.

METHODS

This was a descriptive type of cross-sectional study. The study was carried out at North Bengal Medical College Hospital, Sirajganj between January,2014 to December,2015. There were 88 women (69 patients were booked and 19 patients were unbooked)

admitted in the hospital during the period with the clinical diagnosis of primary PPH and included those delivered both in the hospital and outside the hospital. These included women managed primarily in the hospital and those referred to the hospital without PPH having delivered at home or other maternity centers. Informed consent was obtained from all patients.

All patients with primary postpartum haemorrhage in the Department of Obstetrics and Gynaecololgy, North Bengal Medical College Hospital after vaginal delivery/ caesarean section were included. Excluded from the study were women with congenital bleeding disorder, patients on heparin/ warfarine Postpartum blood loss in the hospital was based on measurement from a basin, plus a visual estimate of blood on linens and used swabs. The amount was noted on the maternity record at the time of delivery, with the estimate incorporating both measured and estimated amount.

The hospital uses a standardized maternity record from antenatal care, delivery and postnatal care. Data were collected from the maternity record forms of the cases and controls and entered into a standard data collection form specifically designed for the study. Additional information was obtained individually from the patients when the records were incomplete or when there was the need to confirm the accuracy of the entries. Information was obtained on socio-demographic risk factors, medical and obstetric history, antenatal events, labour and delivery outcomes. The test statistics used were descriptive statistics as appropriate. Ethical permission from ethical committee and appropriate authority was taken.

RESULTS

There were 88 women with primary PPH. Selected sociodemographic characteristics are shown in Table I. Most of the patients belong to 26-30 years of age (42, 47.73%) followed by 21-25 year which is (29, 32.95%). Considering level of education, maximum were primary (56, 63.64%) followed by higher secondary (10, 11.36%) and (9, 10.23%) were illiterate (Table I). Most of the patients were house wife (60, 68.18).

Table I: Socio-demographic characteristics of the patients with PPH

Variables	Number	Percentage (%)
Age in years		
≤20	8	9.09
21-25	29	32.95
26-30	42	47.73
>30	9	10.23
Mean±SD	26.07±4.3	
Educational status		
Illiterate	9	10.23
Primary	56	63.64
Secondary	8	9.09
Higher secondary	10	11.36
Graduate	5	5.68
Occupational status		
House wife	60	68.18
Service holder	28	31.82

PPH were found to occur mainly in multigravida (42, 47.72%). Some (22,25.0%) of the cases were unbooked and received antenatal care outside the hospital and others (66, 75.0%) of cases had regular antenatal checkup. The prolonged labour (24, 27.27%) and grand multiparity (20, 22.73%) were the two major risk factors for developing PPH found in this study (Table II).

Table II: Pregnancy and antenatal events

Variables	Number	Percentage (%)
Parity		
Primi gravid	31	35.23
Multigravida (2-4)	42	47.72
Grand multi (more than 4)	15	17.05
Antenatal booking		
Booked	66	75.0
Unbooked	22	25.0
Risk Factors		
Prolonged labour	24	27.27
Grand multiparity	20	22.73
PET/Eclampsia	12	13.64
Multiple pregnancy	11	12.50
Polyhydramnios	10	11.36
Macrosomia	6	6.82
Instrumental delivery	5	5.68

Table III : Mode of delivery

Mode of delivery	Number	Percentage (%)
Normal vaginal delivery	73	82.95
Instrumental delivery	15	17.05

The majority (73, 82.95%) of the cases were managed by vaginal delivery and remaining (15, 17.05%) were by caesarean section (Table III).

Table IV: Source of haemorrhage in women with primary PPH

Variables	Number	Percentage (%)
Atonic uterus	54	61.36
Retained bits of placenta	12	13.64
Cervical tear	10	11.36
Vaginal tear	7	7.95
Inverted uterus	4	4.54
Ruptured uterus	1	1.14

Table-IV outlines the causes of hemorrhage among the cases. Uterine atony (54,61.36%) was the commonest identifiable cause of PPH. Trauma to the genital tract caused by cervical tear (10,11.36%), vaginal tear (7,7.95%), inverted uterus (4,4.54%) and ruptured uterus (1,1.14%) accounted for nearly quarter of cases.

In this study, most of the patients (67, 76.14%) were managed medically by using medicine and by giving fundal massage and bimanual compression. Table V shows that (8, 11.94%) of the cases were managed by using only Oxytocin, (28,41.79%) by using Oxytocin± Ergometrine, (11, 16.42%) by Oxytocin+ Misoprostol and (20,29.85%) by Oxytocin+ Ergometrine Misoprostol.

Table V: Management of PPH patients (n-88)

Variables	Number	Percentage (%)
Medical management (n-67)		
Only oxytocin	8	11.94
Oxytocin +Ergometrine	28	41.79
Oxytocin +Misoprostol	11	16.42
Oxytocin +Ergometrine+Misoprostol	20	29.85
Surgical management (n-21)		
Repair of cervical and vaginal tear	10	47.62
Manual removal of placenta	6	28.57
Subtotal hysterectomy	2	9.52
B-Lynch suture	1	4.76
Repair of ruptured uterus	1	4.76
Uterine arteries ligation	1	4.76

Table V shows that maximum of the patients (10,47.62%) were managed by repairing the cervical and vaginal tears. Some (6,28.57%) patients needed manual removal of placenta and (2,9.52%) patients required subtotal hysterectomy.

Table VI: Outcome of Patients

Variables	Number	Percentage (%)
Maternal complication (n- 88)		
No complication	50	56.82
Shock	22	25.00
Puerperal sepsis	10	11.36
Acute renal failure	1	1.14
Maternal Death	5	5.86
Cause of maternal death (n-5)		
Shock	2	40.00
Sepsis	1	20.00
ARF	1	20.00
DIC	1	20.00
Total	**5**	**100.0**

Table VI shows (50, 56.82%) patients had no maternal complication but 43.2% had different complications. This study mentioned maternal death in 5 patients among them two was due to shock, and one of each for sepsis, ARF and DIC.

DISCUSSION

Primary postpartum hemorrhage (PPH) is defined as excessive bleeding from the vaginal tract after delivery of a child of more than 500 millliliters within the first 24 hours.[12] This is the most common cause of maternal mortality and accounts for 25% of all maternal deaths worldwide. Majority of these deaths 88% occur within first 4 hours of delivery due to events in 3rd stage of labour.[13]

The demographic profiles of the patients with PPH showed that subjects had a lower age profile with a mean age of 26.07±4.30 years with the highest number of cases 47.73% falling in the 26-30 years of age group. In a study, Naz et al.[14] mentioned that most of the cases were over 35 years. But in another study Naz and Hasan[15] showed that the highest number of cases fell 43.90% in the 31-40 years age of group. The reason for this young age is the relative increased gravidity and parity at a younger age in our society.

This study showed 35.23% were primipara, 47.72% were multipara and 17.05% were grand multipara. In another study Rasheed et al.[16] found primiparas were 10.97%, 31.70% were multipara, 34.75% were grandmultipara and 22.56% were more than para 9. Multiparity, particularly grand-multiparity, has been specified as a factor predisposing to increased frequency of PPH by different studies[17,18] and this is supported by this study also. Other studies reported multiparity has been cited in many previous studies as an important risk factor[19] and it has been used as an important clinical marker for PPH by practitioners.

This study showed 82.95% cases of PPH occurred after vaginal delivery. Caesarean section was carried out in 17.05% cases which were performed at different hospitals and clinics. Another study Naz and Hasan[15] found 64.63% cases of PPH occurred after vaginal delivery of which (52.83%). Instrumental delivery was 23.17% and caesarean section occurred in 12.20% cases.

Like other studies[20] this study also reported uterine atony as the commonest cause of PPH and accounted for 61.36% of the cases. These results are comparable with the study of a researcher who reported a twofold increased risk of postpartum haemorrhage due to uterine atony.[21] Another study conducted at Hyderabad Medical Complex in which grand multiparity and obstructed labour were found to be main risk factors for uterine atony playing their role in 50% of the cases.[22] Retained placenta (13.64%) was the second most common cause seen in this study. Reason for this observation was that majority of cases seen had their delivery outside the hospitals at home where the third stage was poorly managed.

Uterine atony was the most common cause of PPH in other countries also, the figures varying from 50% to 76%.[23] Studies in Pakistan have also mentioned uterine atony as the main cause of PPH, the figure in different studies being 65%, 58% and 34%.[17, 21]

Naz and Hassan[15] in another study also reported that retained placenta accounted for 14.63% cases of PPH. Thirteen (7.93%) cases of PPH occurred following Antepartum Haemorr-hage (APH). PPH due to coagulation disorders was seen in 1.83% cases, 2 due to hepatitis with jaundice, and 1 case due to thrombocytopenia.

This study showed that prolonged labour (27.27%) and grand multiparity (22.73%) were the important risk factors for this study

population. In previously published studies, these risk factors have been reported to be associated with PPH.[24] However; other risk factors were PET/Eclampsia, multiple pregnancies, polyhydramnios, macrosomia and instrumental delivery. In another study Sosa et al.[21] found risk factors were retained placenta (33.3%), multiple pregnancy (20.9%), macrosomia (18.6%), episiotomy (16.2%), and need for perineal suture (15.0%).

In this study, maximum of the patients (47.62%) were managed by repairing cervical and vaginal tears. Some 28.57% patients needed manual removal of placenta, 9.52% patients' required subtotal hysterectomy, 4.76% patients treated by repair of ruptured uterus and 4.76% patients needed ligation of uterine arteries. This finding is consistent with other researchers.[25, 26] This may be due to the fact that the other studies were carried out at tertiary care hospitals and the majority of the patients were treated with misoprostol. In those cases, they conducted the delivery of the placenta by controlled cord traction rather than doing manual placental removal which may contribute to an insignificant different result.

In this study, maternal death was five and this result was probably due to the prompt and appropriate intervention was taken for the patients in order to prevent mortality due to haemorrhage in a tertiary setting with ready availability of emergency obstetric services. Apart from the mortality, PPH was found associated with maternal morbidities such as increased need of blood transfusion with its accompanying complications, renal failure due to hypovolaemia, disseminated intravascular coagulopathy, failure of lactation and infertility.

Maternal mortality has been used as a measure of the quality of care. Recently, maternal morbidity has also been taken into account to assess the burden of the diseases. It has been estimated that PPH increases the risk of morbidity 50 times, and has nearly 5 times higher morbidity than mortality.[15, 27]

CONCLUSION

This study explored that the common causes of PPH were atonic uterus followed by retained bits of placenta and cervical tear. Therefore, preventive efforts for PPH should be made keeping in mind the above mentioned risk factors.

Conflicts of Interest There is no conflict of interest.

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