Original article

Risk factors for Primary Postpartum Haemorrhage in a tertiary care centre

DOI: https://doi.org/10.47648/zhswmcj.2023.v0502.08

*Chowdhury RA

Abstract

Postpartum Haemorrhage (PPH) remains a significant cause of maternal mortality and morbidity. This prospective cross sectional study was done at the Obstetrics and Gynaecology Department of Dhaka Medical College, Dhaka from January 2013 to July 2013. The objective is to detect the risk factor of primary postpartum haemorrhage. This study shows most of the patients (45%) belonged to 26-30 years age group. The most of the patients (88%) developed PPH after vaginal delivery whereas 12% patient developed PPH after cesarean section. Causes of PPH included atonic uterus in 57 patients, retained bits of placenta in 14 patients, cervical tear in 13 patients, vaginal tear in 9 patients and others in 8 patients (inverted uterus, ruptured uterus). Prolonged labor, grand multiparity, Pre-eclampsia/Eclampsia, multiple pregnancy, polyhydramnios, macrosomia and instrumental delivery were the common risk factors.

Key word: Primary PPH, Multiipara, Eclampsia, Prolonged labor

Received on: 10.03.2023; Accepted on: 15.04.2023

Introduction

Postpartum haemorrhage is an obstetrical emergency that can follow vaginal or caesarean delivery. Primary post-partum haemorrahge (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 was approximately 500 ml and 1000ml 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 (e.g., 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 primary PPH. Other cause include trauma (cervical, vaginal, perineal), retained or adherent placental tissue, clotting disorder, inverted uterus, ruptured uterus.[6]

Factors are thought to increase the risk for PPH are over distension (multiple pregnancy, macrosomia/ polyhydramnios), prolonged labour, induced or augmented labour, grand multiparity (more than 4), instrumental delivery, preeclampsia, problems with placenta (eg, retained placenta, placenta previa), previous PPH, maternal bleeding disorder.[7]

Objective of the study

General Objective

To find out the risk factors of primary postpartum haemorrhage in Dhaka Medical College Hospital.

Specific Objectives

1. To evaluate socio demographic characteristics of primary PPH cases.
2. To find out the risk factors of primary PPH.
3. To explore the life-threatening complications of primary PPH cases.
4. To assess options for the treatment of primary PPH cases.
5. To evaluate the outcome of primary PPH cases.

Materials and methods

It was a prospective, cross sectional, hospital based observational study done in the Obstetrics and Gynaecology department of Dhaka Medical College Hospital from January 2013 to June 2013 among all the women admitted and diagnosed as primary postpartum haemorrhage . It was purposive consecutive sampling technique types study. Here all patients with primary postpartum haemorrhage after vaginal delivery and caesarean section were included. In this study the patient with bleeding disorder and patients on heparin/warfarin was excluded. The semi-structured data collection sheet was used for data collection in the selected medical college hospital by the investigator herself. Data analyses were done by computer aided statistical program for social science (SPSS) software.

Author's Affiliation: Romana Afrose Chowdhury, Registrar, Department of Obstetrics and Gynaecology, Z.H. Sikder Women's Medical College and Hospital.

***Address of Correspondence:** Dr. Romana Afrose Chowdhury, Registrar, Department of Obstetrics and Gynaecology, Z.H. Sikder Women's Medical College and Hospital

Ethical implications

Ethical permission was taken from ethical committee and appropriate authority of Dhaka Medical College Hospital.

Table no. 1: Socio-demographic characteristics of the patients (n=100)

Age in years	Number	Percentage (%)	Mean±SD
20	10	10	26.074.30
21-25	33	33	
26-30	45	45	
>30	12	12	

Table no. 1 showing majority of the patients (45%) belonged to 26-30 years age.

Table no. 2: Distribution of parity (n=100)

Parity	Number	Percentage (%)
Primi gravida	33	33
Multigravida (2-4)	49	49
Grand multi (more than 4)	18	18

Table no. 2 showing distribution of parity and the majority (49%) were multigravida.

Table no. 3: Mode of delivery

Mode of delivery	Frequency	Percentage (%)
Vaginal delivery	88	88
Instrumental delivery	12	12

Table no. 3 showing majority cases (88%) were following vaginal delivery and 12% were following instrumental delivery.

Table no. 4: Cause of primary postpartum haemorrhage (n=100)

Cause of PPH	Number	Percentage (%)
Atonic uterus	57	57
Retained bits of placenta	14	14
Cervical tear	12	12
Vaginal tear	9	9
Inverted uterus	6	6
Ruptured uterus	2	2

Table no. 4 showing atonic uterus (57%) were most common cause of primary postpartum haemorrhage then retained bits of placenta (14%), cervical tear (12%), vaginal tear (9%), inverted uterus (6%) and ruptured uterus (2%).

Table no. 5: Risk factor of the patients (n=100)

Risk factors	Number	Percentage (%)
Prolonged labor	22	22
Grand multiparity	18	18
PE/Eclampsia	12	12
Multiple pregnancy	11	11
Polyhydramnios	10	10
Macrosomia	6	6
Instrumental delivery	5	5

Table no. 5 showing risk factors among the patients who developed PPH, 18% were grandmulti para and 22% had prolonged labour. These were two major risk association of developing PPH found in this study.

Discussion

The demographic profiles of the patients with PPH showed that subjects had a age profile with a mean age of 26.074.30 years with the highest number of cases (45%) falling in the 26-30 years of age group. In a study Naz et al.[8] found that most of the cases were over 35 years. Another study Naz & Hasan[9] showed that highest number of cases (43.90%) fall in the 31-40 years age of group.

This study showed 33% were primigravida, 49% were multigravida and18%were grand multigravida. Another study Rasheed et.al found primigravida were 10.97%, multigravida were 31.70% , 34.75% were grand multipara 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[8,10,11] and this is supported by this study also. Other studies reported multiparity has been cited in many previous studies as an important risk factor[12,13,14] and it has been used as an important clinical marker for postpartum hemorrhage by practitioners.

This study showed 88% cases of PPH occurred after vaginal delivery. Caesarean section occurred in (12%) cases which were performed at different hospitals & clinics. Another study Naz & Hasan[9] found 64.63% cases of PPH occurred after vaginal delivery of which Instrumental delivery were 23.17% and caesarean section occurred in 20(12.20%) cases.

Like other studies[15] this study also reported uterine atony is the commonest cause of postpartum haemorrhage and it accounted for 57% of the cases. These results are comparable with the study of Harrison who reported a two fold increased risk of postpartum haemorrhage due to uterine atony.[16] Another study conducted at Hyderabad Medical Complex in which grand multiparity & obstructed labour were found to be main risk factors for uterine atony playing their role in 50% of cases.[17] Retained placenta (14%) 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 is the most common cause of PPH in other countries also, the figures varying from 50% to 76% [18]

Studies in Pakistan have also mentioned uterine atony as the main cause of PPH, the figure in different studies being 65%, 58% and 34%.[9,10,16]

Naz & Hassan[9] study reported retained placenta accounted for 24 (14.63%) cases of PPH. Thirteen (7.93%) cases of PPH occurred following APH. PPH due to coagulation disorders was seen in 3(1.83%) cases, 2 due to hepatitis with jaundice, and 1 case due to thrombocytopenia.

This study showed prolonged labour (22%) and grand multiparity (18%) were the important risk factors. In previously published studies, these risk factors have been reported to be associated with postpartum hemorrhage.[12,19,20] However, other risk factors such as PE/Eclampsia (12%), multiple pregnancy (11%), polyhydramnios (10%), macrosomia (5) and instrumental delivery (5%) are mentioned in the current study. 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%).

Conclusion

In this current study risk factors for primary post-partum haemorrhages included are prolonged labour, grand multiparity, PE/Eclampsia, multiple pregnancy, polyhydramnios, macrosomia, instrumental delivery. Therefore, an effort should be made, during the time of delivery, to apply prevention techniques such as restrictive episiotomy and active management of labour to prevent postpartum hemorrhage in vaginal deliveries.

Recommendation

This prospective cross sectional study suggests that community-based education and administration of supervised 400 mcg of misoprostol reduces the incidence of PPH and is safe, acceptable, and feasible.

Reference

1. Michael S. Rogers, Alan M.Z. Chang. Post partum hemorrhage and other problems of the third stage. High Risk pregnancy management options 3rd ed. Elsevier 2006:1560-65.
2. Stafford Dildy GA, Clark SL, Belfort MA. Visually estimated and calculated blood loss in vaginal and cesarean delivery. Am J Obstet Gynecol 2008; 199:519.
3. Callaghan WM, Kuklina EV, Berg CJ. Trends in postpartum hemorrhage: United States, 1994-2006 Am J Obstet Gynecol 2010; 202:353.
4. Bangladesh Maternal Mortality Survey 2010, Maternal and Child Health Situation in Bangladesh.
5. Prata N, Gerdts C. Measurement of postpartum blood loss. BMJ 2010; 340: c555.
6. Koh E, Devendra K, Tan L K. B-Lynch suture for the treatment of uterine atony. Singapore Med J 2009; 50(7): 693-69.
7. Magann EF, Evans S, Chauhan SP, Lanneau G, Fisk AD, Morrison JC. The length of the third stage of labor and the risk of postpartum haemorrhage. Obstet Gynecol. 2005; 105:290-3.
8. Naz H, Sarwar I, Fawad A, Nisa AU. Maternal morbidity and mortality and mortality due to primary PPH-Experience at Ayub Teaching Hospital Abbott Abad. J Ayub Med Coll Abbottabad 2008;20(2): 59-65.
9. Naz T, Hassan L. Primary postpartum hemorrhage; profile at a Tertiary Care Hospital. J Med Sci 2010;18(1): 49-53.
10. Rasheed N, Nasim N, Malik MA. Primary postpartum haemorrhage; Comparison of effectiveness of misoprostol and syntocinon in the prophylaxis. Professional Med J 2010; 17(2): 308-313.
11. Malik S, Naz F. Grandmultiparity- A Continuing Obstetric Risk in Pakistan. J Surg Pakistan 2001;6:29-31
12. Hazra S, Chilaka VN, Rajendran S, Konje JC. Massive postpartum hemorrhage as a cause of maternal morbidity in a large tertiary hospital. J Obstet Gynaecol 2004;24:519-428.
13. Xiong Q, Zhang GY, Chen HC. Analysis of risk factors of postpartum hemorrhage in rural women. Zhonghua Fu Chan KeZa Zhi 1994; 29:582- 5.
14. Babinszki A, Kerenyi T, Torok O, Grazi V, Lapinski RH, Berkowitz RL. Perinatal outcome in grand and great-grand multiparity: effects of parity on obstetric risk factors', Am J Obstet Gynecol 1999;181:669-74.
15. Tsu VD. Postpartum haemorrhage in Zimbabwe: a risk factor analysis. Br J Obstet Gynaecol 1993;100:327-33.
16. Soriano D, Dulitzki M, Schiff E.A prospective cohort study of oxytocin plus ergometrine compared with oxytocin alone for prevention of postpartum haemorrhage', Br J Obstet Gynaecol 1996;103(11): 1068-73.
17. Shaheen B, Hassan L. Postpartum haemorrhage: A preventable cause of maternal mortality. J Coll Physicians Surg Pak 2007;17:607-10.
18. Feerasta SH, Motiei A, Motiwala S, Zuberi NF. Uterine atony at a tertiary care hospital in Pakistan: a risk factor analysis. J Pak Med Assoc 2000; 50:132-6.
19. Japaraj RP, Raman S. Segstakeu Blakemore tube to control massive postpartum hemorrhage. Med J Malaysia 2003;58:604-07.
20. Bais JM, Eskes M, Pel M, Bonsel GJ, Bleker OP. Postpartum haemorrhage in nulliparous women: incidence and risk factors in low and high risk women. A Dutch population-based cohort study on moderate (> or = 500 ml) and severe (> or = 1000 ml) postpartum haemorrhage. EurJ Obstet GynecolReprod Biol. 2004;115:166-72.
21. Ohkuchi A, Onagawa T, Usui R, Koike T, Hiratsuka M, Izumi A. Effect of maternal age on blood loss during parturition: a retrospective multivariate analysis of 10,053 cases. J Perinat Med. 2003;31:209-15.