MAK HILL Publications Research Journal of Pharmacology

Research Article
doi: 10.59218/makrjp.2022.15.18

OPEN ACCESS

Key Words
PPH uterotonic, cesarean section, multiple pregnancy

Corresponding Author
Poonam Bhojwani,
Department of Obstetrics and Gynaecology, National Institute of Medical Sciences and Research, Jaipur, India

Author Designation
Associate Professor

Received: 20 June 2022
Accepted: 8 July 2022
Published: 9 July 2022

Citation: Poonam Bhojwani, 2022. Assessment of Parameters and Risk Factors of Post-Partum Hemorrhage. Res. J. Pharm., 16: 15-18, doi: 10.59218/makrjp.2022.15.18

Assessment of Parameters and Risk Factors of Post-Partum Hemorrhage

Poonam Bhojwani
Department of Obstetrics and Gynaecology, National Institute of Medical Sciences and Research, Jaipur, India

ABSTRACT
The measurement technique of blood loss for all vaginal deliveries used in this trial was the direct method with a calibrate receptacle. Using data collected as part of this study, we identified risk factors for immediate post-partum hemorrhage. A thorough clinical examination was performed in all patients. Clinical features, including maternal age, previous gestational history, mode of delivery, primary cause of hemorrhage, number of red cell concentrate units transfused and outcomes, were evaluated. Risk factors of PPH were also recorded. Mode of delivery was vaginal in 49, LSCS in 34, gravida was primi in 54, multigravida in 29. Complications found to be anemia in 29, DIC in 16 and others in 9 cases. The difference was significant ($p<0.05$). The incidence of PPH was high despite many women receiving uterotonic at delivery of the babies. The risk factors for PPH in our setting were cesarean section, multiple pregnancy, fetal macrosomia and HIV.

INTRODUCTION

According to multiple studies, post-partum haemorrhage is the most frequent direct cause of maternal mortality and morbidity in India, accounting for 25% of maternal deaths. A woman experiences post-partum haemorrhage if she loses 500 millilitres or more of blood in the 24 hrs following delivery[1].In civilised nations, postpartum haemorrhage is a relatively uncommon cause of maternal death (about 8%). i.e., compared to their developed counterparts, pregnant women giving birth in developing nations face a higher chance of dying during delivery. Thus, this implies that maternal mortality can be prevented[2]. Researchers have applied transfusions of ≥10 red blood cell (RBC) units within 24 hrs, 50% blood volume loss within 3 hours, or transfusions of ≥4 RBC units within 1 hrs as criteria for MT, despite the fact that there is no universally accepted classification for the condition[3]. Only after the parturient has lost over 500 mL or 1000 mL of blood may PPH be identified. The fact that there is currently no perfect way to determine exactly how much blood has been lost is another barrier to diagnosing PPH[4]. The most practical technique of estimating blood loss is visual assessments, which underestimate blood loss by half. Because severe bleeding may cause the blood to concentrate quickly, giving the false appearance that the number is within normal bounds the Hb or HCT technique has a delayed effect[5].

A significant flaw in most published research is that the bulk of them use a method of identifying postpartum haemorrhage that has been shown to be highly inaccurate ocular estimation of blood loss recorded in the hospital records. Lastly, there has only been one observational study that has addressed this problem to the best of our knowledge[6]. One of the secondary outcomes of the multicenter, worldwide cluster randomised Trial for Improving Perinatal Care was blood loss during the third stage of labour. All vaginal births in this experiment were measured for blood loss using the direct approach using a calibrated receptacle. We identified risk variables for acute postpartum haemorrhage using data gathered for this investigation.

MATERIALS and METHODS

This study was conducted in Department of Medical Gastroenterology, National Institute of Medical Sciences and Research, Jaipur. All patients were informed regarding the study and their consent was obtained. Data such as name, age, etc. was recorded. A thorough clinical examination was performed in all patients. Clinical features, including maternal age, previous gestational history, mode of delivery, primary cause of hemorrhage, number of red cell concentrate units transfused, and outcomes, were evaluated. Risk factors of PPH were also recorded. Results were tabulated and subjected to statistical analysis. p>0.05 was considered significant.

RESULTS

Table 1 shows that age group 20-30 years had 43, 30-40 years had 23 and >40 years had 15 cases. The difference was significant (p<0.05).

Table 2 shows that mode of delivery was vaginal in 49, LSCS in 34, gravida was primi in 54, multigravida in 29. Complications found to be anemia in 29, DIC in 16 and others in 9 cases. The difference was significant (p<0.05).

Table 3 shows that risk factors found to be APH in 26, PIH in15, atonicity in 6, retained placenta in 14, prolonged labour in 16 and infectionin 6 cases. The difference was significant (p<0.05).

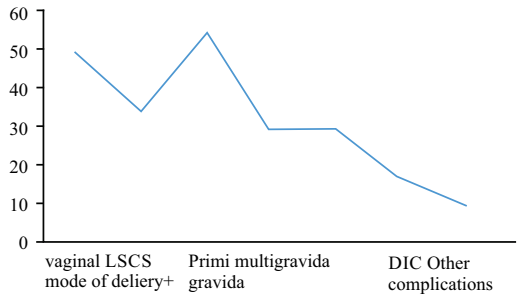

Fig. 1: Parameter assessment

Table 1 Distribution of patients

Age group (years)	No	p-value
20-30	43	0.05
30-40	23	
>40	15	

Table 2 Assessment of parameters

Parameters	Variables	No	p-value
Mode of delivery	Vaginal	49	0.04
	LSCS	34	
Gravida	Primi	54	0.05
	Multigravida	29	
Complications	Anemia	29	0.01
	DIC	16	
	Others	9	

Table 3 Risk factors of PPH

Risk factors	No	p-value
APH	26	0.01
PIH	15	
Atonicity	6	
Retained placenta	14	
Prolonged labour	16	
Infection	5	

DISCUSSIONS

Although the majority of pregnant women give birth in hospitals or at home with the assistance of trained birth attendants, post-partum haemorrhage is the most frequent direct cause of maternal deaths. For this reason, active management of the third stage of

labour is necessary in every case[7]. The goal of the current investigation was to identify post-partum haemorrhage (PPH) cases.

The age range of 20-30 had 38 instances in the current study, 30–40 had 18 and more than 40 had 12 cases. 200 cases with a blood loss of 500 mL or more during vaginal delivery and 100 cases with a blood loss of 1000 mL or more with caesarean section were enrolled by Shaih *et al*.[8]. The most frequent risk factor for postpartum haemorrhage, observed in 168 (84%) of the pregnant women, was uterine atonicity. APH was observed in 45 (22.5%) pregnant women, whereas PIH was observed in 74 (37%) pregnant women. Thirteen cases (8.5%) of PPH were related to retained placental products, and twenty-eight (14%), to prolonged labour. Thirteen (6.5%) occurrences of PPH were related to genital tract injuries, while fourteen (7%) pregnant women experienced large baby-induced PPH. Nine (4.5%) pregnant women experienced PPH as a result of a ruptured uterus and nine (4.5%) of these cases were related to multiparity. Five instances (2.5%) of PPH were attributed to infections, and two cases (1%), to uterine inversion.

We discovered that 42 births were vaginal, 26 were LSCS, 46 were primigravida and 22 were multigravida. Anaemia was identified as a problem in 24 instances, DIC in 11 cases, and other in 4 cases. Risk factors included retained placenta in 12 instances, APH in 23, PIH in 12, atonicity in 4, delayed labour in 13 and infection in 4 cases. Active management of the third stage of labour (AMTSL) is the best way to prevent postpartum haemorrhage. AMTSL also lessens the possibility that a postpartum mother's haemoglobin level will be less than 9 g per dL (90 g per L) and that the placenta will need to be manually removed. This method includes uterine massage following placenta delivery, controlled cord traction (Brandt-Andrews manoeuvre) to deliver the placenta and the administration of oxytocin (Pitocin) concurrently with or shortly after anterior shoulder delivery. The Brandt-Andrews manoeuvre, which involves applying forceful traction on the umbilical cord with one hand while applying suprapubic counterpressure with the other, can be used to achieve placental delivery[9].

According to our research, there are several risk factors for this Latin-American population, including retained placenta, multiple pregnancies, macrosomia (defined as a birth weight of 4,000 grammes or more), episiotomy and sutures. These risk variables have been linked to postpartum haemorrhage in previously published research[10-14]. The current study did not find any correlation between an increased risk of postpartum haemorrhage and other risk variables, including maternal age, nulliparity, augmentation and/or induction with oxytocin during first or second stage of labour and preterm birth. Our results indicate that low birth weight, multiparity (more than three deliveries) and active management of the third stage of labour are protective factors against developing moderate postpartum haemorrhage. Multiparity has been recognised as a significant clinical marker for postpartum haemorrhage by practitioners and has been mentioned as a risk factor in numerous prior investigations[15,16]. However, we discovered a significant protective impact of multiparity against postpartum haemorrhage in addition to the inability to substantiate the negative effect of this variable in our dataset. However, the disparity can result from the great multiparity or parity cutoff level. Similarly, there has been debate concerning the role of maternal age as a risk factor in earlier studies. Once more, in our cohort the correlation that seemed to exist between postpartum haemorrhage and maternal age during preliminary analysis vanished almost entirely when additional risk factors were taken into account.

CONCLUSION

The incidence of PPH was high despite many women receiving uterotonic at delivery of the babies. The risk factors for PPH in our setting were cesarean section, multiple pregnancy, fetal macrosomia and HIV. Extra vigilance during the antenatal and peripartum periods is needed to identify women at risk and early intervention to prevent PPH. It is important to remember that we have to prepare for PPH in all women giving birth, as some get PPH without any known risk factors.

REFERENCES

1. Mhyre, J.M., A. Shilkrut, E.V. Kuklina, W.M. Callaghan, A.A. Creanga, S. Kaminsky and B.T. Bateman, 2013. Massive blood transfusion during hospitalization for delivery in new york state, 1998-2007. Obstet. Gynecol., 122: 1288-1294.
2. Levi, M., D. Fries, H. Gombotz, P.V. Linden and B. Nascimento *et al*., 2011. Prevention and treatment of coagulopathy in patients receiving massive transfusions. Vox. Sang., 101: 154-174.
3. RCOG., 2009. Postpartum haemorrhage, prevention and management.
4. Carroli, G., C. Cuesta, E. Abalos and A.M. Gulmezoglu, 2008. Epidemiology of postpartum haemorrhage: A systematic review. Best. Pract. Res. Clin. Obstet. Gynaecol., 22: 999-1012.
5. RCOG., 2011. Prevention and management of postpartum haemorrhage (green-top guideline No. 52)., https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/prevention-and-management-of-postpartum-haemorrhage-green-top-guideline-no-52/
6. Roopnarinesingh, S.S., 1970. The young negro primigravida in jamaica. BJOG: An Int. J. Obstet. Gynaecol., 77: 424-426.

7. Schorn, M.N., 2010. Measurement of blood loss: Review of the literature. J. Midwifery. Women's Health,, 55: 20-27.
8. Shabnam, S.S., T.N. Bano and R.B. Sabreena, 2013. Postpartum hemorrhage: An experience at tertiary care hospital, Hyderabad. Med. Channel., 19: 44-47.
9. Tasneem, F., S. Sirsam and V. Shanbhag, 2017. Clinical study of post partum haemorrhage from a teaching hospital in maharashtra, India. Int. J. Reprod. Contraception. Obstet. Gynecol., 6: 2366-2369.
10. Bais, J.M.J., M. Eskes, M. Pel, G.J. Bonsel and O.P. Bleker, 2004. Postpartum haemorrhage in nulliparous women: Incidence and risk factors in low and high risk women. Eur. J. Obstet. Gynecol. Reprod. Biol., 115: 166-172.
11. Stones, R.W., C.M. Paterson and N.J.S. Saunders, 1993. Risk factors for major obstetric haemorrhage. Eur. J. Obstet. Gynecol. Reprod. Biol., 48: 15-18.
12. Combs, C.A., E.L. Murphy and R.K. Laros, 1991. Factors associated with postpartum hemorrhage with vaginal birth. Obstet. Gynecol., 77: 69-76.
13. Xiong, Q., G.Y. Zhang and H.C. Chen, 1994. Analysis of risk factors of postpartum hemorrhage in rural women. Zhonghua. Fu. Chan. Ke. Za. Zhi., 29: 582-635.
14. Ohkuchi, A., T. Onagawa, R. Usui, T. Koike and M. Hiratsuka *et al*., 2003. Effect of maternal age on blood loss during parturition: A retrospective multivariate analysis of 10, 053 cases. J. Perinatal. Med., 31: 209-215.
15. Babinszki, A., T. Kerenyi, O. Torok, V. Grazi, R.H. Lapinski and R.L. Berkowitz, 1999. Perinatal outcome in grand and great-grand multiparity: Effects of parity on obstetric risk factors. Am. J. Obstet. Gynecol., 181: 669-674.
16. Tsu, V.D., 1993. Postpartum haemorrhage in zimbabwe: A risk factor analysis. BJOG: An Int. J. Obstet. Gynaecol., 100: 327-333.