



1. MBBS, FCPS (Obstetrics & Gynaecology)
Associate Professor
Department of Obs & Gyne
Nishtar Hospital Multan.
2. MBBS, MCPS, FCPS
Professor
Department of Obstetrics and Gynaecology
Multan Medical & Dental College, Multan.
3. MBBS, FCPS
Professor
Department of Obs & Gyne
DG Khan Medical College.
4. MBBS, FCPS
Senior Medical Officer
Department of Obs & Gyne
Nishtar Hospital Multan.
5. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.
6. MBBS, FCPS
Senior Registrar
Department of Obs & Gyne
Nishtar Hospital Multan.

Correspondence Address:
Dr. Muhammad Sajjad Masood
Department of Obs & Gyne
Nishtar Hospital Multan.
drsajjad131@gmail.com

Article received on:
18/12/2018

Accepted for publication:
26/07/2019

Received after proof reading:
30/09/2019

INTRODUCTION

Primary postpartum haemorrhage (PPH) is termed as a blood loss exceeding 500 ml after vaginal delivery or 1000 ml after caesarean section occurring within 24 hours of delivery of the baby.¹ Another proposed definition for PPH includes a haemorrhage resulting in a haematocrit drop of 10% or a haemorrhage that requires immediate blood transfusion.²

It is the second most common cause of maternal morbidity and mortality.³ The generally quoted incidence of postpartum haemorrhage in developed countries is 4-8% with massive haemorrhage (>1000 ml) occurring in only 1-3%.⁴ In Pakistan, it is the main cause of maternal death.⁵ Reported incidence of PPH is 3%.⁶ Larger family size, lack of education and lack of maternity services lead towards this tragedy.⁷

FREQUENCY OF COMMON FACTORS LEADING TO PRIMARY POSTPARTUM HAEMORRHAGE IN PATIENTS PRESENTING AT NISHTAR HOSPITAL MULTAN.

Hajira Masood¹, Sobia Mazhar², Syed Muhammad Ali³, Muhammad Sajjad Masood⁴, Saima Yasmin Qadir⁵, Muhammad Ramzan⁶

ABSTRACT... Objectives: The objective was to determine the frequency of common factors leading to Primary postpartum hemorrhage. **Study Design:** Cross-sectional study. **Setting:** Study was conducted in obstetrics and Gynaecology ward of Nishtar Hospital Multan. **Period:** From 15-9-2017 to 14-03-2018. **Material and Methods:** Total 2119 deliveries were done in hospital during study period. Patients with loss of blood greater than 500 ml in vaginal delivery and 1000 ml in abdominal delivery were included. Main variables of study were age, parity, duration of delivery, mode of delivery. analysis was done by using SPSS for Window (version 10.0) Mean and stranded deviation was calculated for numerical data like ages of the patients and parity, while frequencies and percentages was calculated for qualitative data like mode of delivery. **Results:** 61.07% of the patients delivered vaginally and duration of labour was prolonged in 27.51% of cases. The single most frequent factor leading to primary postpartum haemorrhage was uterine atony i.e. in 48.99% of cases. **Conclusion:** Uterine atony was the most significant risk factors of primary postpartum haemorrhage. Our findings confirm the importance of previously recognized factors. Timely identification & management of these factors can help in reducing the incidence of maternal deaths.

Key words: Maternal Mortality, Primary Postpartum Haemorrhage, Uterine Atony

Article Citation: Masood H, Mazhar S, Ali SM, Masood MS, Qadir SY, Ramzan M. Frequency of common factors leading to primary postpartum haemorrhage in patients presenting at Nishtar Hospital Multan. Professional Med J 2019; 26(10):1799-1804. DOI: 10.29309/TPMJ/2019.26.10.2632

In the 3rd world where atonic PPH is a common event due to high parity, abruption placenta, pre-eclampsia, prolonged labour and fibroid uterus, prophylactic use of oxytocics in third stage of labour is of particular importance⁸ and it has been shown to reduce the incidence of PPH from 30-40%, to reduce the length of 3rd stage of labour from 15 minute to 5 minute and need for therapeutic oxytocics from 30% to 6%.⁹

The identified factors causing PPH were Uterine atony, retained placenta and trauma in 30%, 18% and 13.9% of women, respectively.¹⁰ In one study, risk factors for Primary postpartum haemorrhage were grand multiparity 51.5%, antepartum haemorrhage 8.9%, instrumental delivery 7.3%, previous PPH 4.5% and chorioamnionitis 3.6%.¹¹

METHODOLOGY

All booked patients delivered vaginally and

abdominally having excessive vaginal bleeding were evaluated for this study. Study was conducted in obstetrics and Gynaecology ward of Nishtar Hospital Multan during six month study period i.e. from 15-9-2017 to 14-03-2018. Proper permission from hospital ethical committee was obtained. After explaining pros and cons of the study, informed consent was taken from patients or relatives.

To remove bias, blood was collected in kidney tray of 500 ml capacity and loss was measured by no. of filled trays by the senior present on the duty. Patients with loss of blood greater than 500 ml after vaginal delivery and 1000 ml after caesarean delivery were included in the study. To control effect modifiers, patients with history coagulation disorders or patients on anti-coagulant drug therapy were excluded. In finally selected group of patients, detailed history and examination was done for presence of factors leading to PPH. The outcome variable of the study that are the common factors like multiparity, antepartum haemorrhage, instrumental delivery, uterine atony, chorioamnionitis, prolonged labour and previous history of postpartum haemorrhage were noted, as described in operational definitions, in the proforma designed by the researcher.

Data was entered and analysis was done by using SPSS for Window (version 10.0) Mean and standard deviation was calculated for ages of the patients and parity, while frequencies and percentages was calculated for mode of delivery, various factors leading to postpartum haemorrhage (including multiparity, antepartum haemorrhage, instrumental delivery, uterine atony, chorioamnionitis, prolonged labour and previous history of postpartum haemorrhage).

RESULTS

The frequency of primary postpartum haemorrhage was 7.03%. Among 149 patients, majority (23.48%) were in age group 21-25 years. Age group 36-40 years was next in line. Highest incidence i.e. 69.77 was seen patients having their ages between 15-35 years. Analysis of parity distribution showed that majority of women were multipara (32.88%) and 43(28.85%) patients were

primipara. Duration of labour was prolonged in 27.51% of cases. Among 149 patients, majority (61.07%) of the patients delivered vaginally, 24.83% delivered by caesarean section and 14.09% had instrumental delivery. The single most frequent factor leading to primary postpartum haemorrhage was uterine atony i.e. in 48.99% of cases. Antepartum haemorrhage in 8.72%, chorioamnionitis in 2.68% and previous history of PPH was in 2.01% of cases.

Age Group (in Years)	Number of Cases	Percentage
15-20	13	8.72
21-25	35	23.48
26-30	30	20.13
31-35	26	17.44
36-40	31	20.80
41-45	14	9.39
Total	149	99.96

Table-I. Distribution of patients according to age (n=149)

Frequency of primary postpartum haemorrhage	
Total deliveries	2119 (100%)
Primary postpartum haemorrhage	149 (7.03%)
Parity Wise Distribution of Cases	
P1	43 (28.85%)
P2	26 (17.44%)
P3	31 (20.80%)
≥4	49 (32.88%)
Duration of Labour	
Normal	108 (72.48%)
Prolonged	41 (27.51%)

Table-II. Outcome variables

Mode of delivery

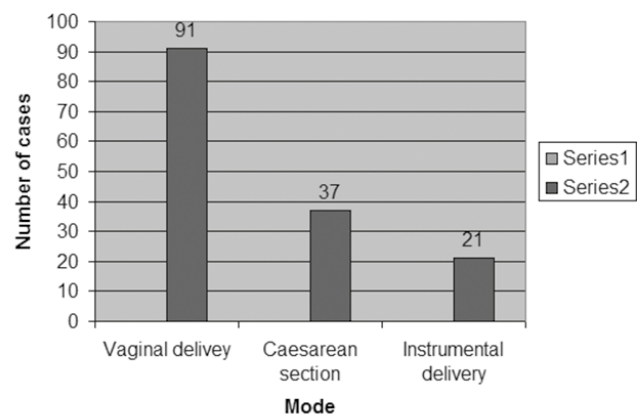


Figure-1. Mode of delivery

Factors	No of Patients	Percentage
Multiparity	49	32.88
Antepartum haemorrhage	13	8.72
Instrumental delivery	21	14.09
Uterine atony	73	48.99
Chorioamnionitis,	4	2.68
Prolonged labour	41	27.51
Previous history of postpartum haemorrhage	3	2.01

Table-III. Frequency of factors leading to primary postpartum haemorrhage (n=149)

DISCUSSION

All pregnant women are at risk of postpartum haemorrhage even though they have no risk factors.³ However, identifying maternal risks for postpartum haemorrhage is still an important and useful key point in daily practice because a high risk pregnancy can then be closely monitored by a special team to modify their risk factors.¹² This can help in prevention of both maternal morbidity and mortality.

In our study number of deliveries in labour ward of during six month study period i.e. from 15-9-2017 to 14-03-2018 was 2119. The frequency of primary postpartum haemorrhage was 7.03%. This finding disagrees with the result of other studies. The postpartum hemorrhage (PPH) rate in a study from Australia was 1.98%¹³ and comparable with results of other studies in Australia, the United States of America and Canada i.e.4-6%.¹⁴⁻¹⁶

In a previous study conducted in Pakistan, Primary PPH was the cause in 6.5%.¹⁷ The results of this study are in line with the results of present study. Similarly, In Australia, the incidence of postpartum hemorrhage has increased when compared with previous years.¹⁸ Incidence of Primary PPH in developed countries is between 3.7% 8.6%.¹⁹ Our results do not agree with other International studies in which prevalence of primary postpartum haemorrhage was 4.5 %²⁰ and 3.7%.²¹

In our study majority (23.48%) were in age group 21-25 years. Age group 36-40 years was next in line. Highest incidence i.e. 69.77 was seen

patients having their ages between 15-35 years. The results generated by present study are in agreement with a previous study conducted in Pakistan. This finding is also corresponding with the study conducted by another author where majority of the patients were aged 20-29 years.²¹

Analysis of parity distribution showed that majority of women were multipara (32.88%) and 43(28.85%) patients were Primipara. This observation is corresponding with a previously conducted study in Pakistan. In that study, maximum 50% of primary PPH cases were reported in grand multiparas.⁷ Almost same results were generated by other researchers in this country.²² Grand multiparity was a major factor in 70 (5 1.5%) of cases in a study conducted by Bibi S et al.²³

In our observation majority of the patients (61.07%) delivered vaginally, 24.83% delivered by caesarean section and 14.09% had instrumental delivery. This observation is comparable with a local study conducted previously in Pakistan. Primary PPH was reported in 50% of cases after vaginal delivery, after instrumental delivery it was 20% and after caesarean section 30%.⁷ Our results disagree with the result of an International study, which states that PPH occurs in 4-6% of vaginal deliveries.²⁴

Rate of instrumental delivery was 10 (7.3%) in a local study²³ which is corresponding with the result of present study but results of another local study are not in agreement with our study.²⁵

In our study, duration of labour was prolonged in 27.51% of cases which is comparable with another study conducted in Pakistan. In that study, prolonged labour was observed in 21.9% cases.²³ In a local study 15% of patients with prolonged labour had severe postpartum hemorrhage, while only 3% of patients with normal duration of labour had postpartum hemorrhage.²⁶ This goes with results of a study published in southern journal.²⁷ However, similar to a previous study in Thailand, prolonged third stage of labor was associated with a greater amount of blood loss after delivery and was the strongest risk

factor of primary PPH.²⁸

Frequency of common factors that leads to primary postpartum haemorrhage in our study. The single most frequent factor leading to primary postpartum haemorrhage was uterine atony i.e. in 48.99% of cases in the present study. The results of present study are corresponding with another study conducted in Pakistan. In that study, the most common cause was uterine atony in thirty (60%) cases.⁷ Similar results were generated by other local study in which, uterine atony was found to be commonest cause of PPH in 70.5% of cases.¹⁷ In an International study conducted in Nigeria²⁹ uterine atony was the most common cause i.e. in 53.8% of the cases. The results of this International studies are also comparable with our results and other studies.³⁰⁻³¹

Pacenta praevia and accrete are relatively rare causes of PPH.³² Antepartum haemorrhage in was in 8.72% of cases in current study. These findings are not corresponding with a previous study conducted in Pakistan. In that study, antepartum haemorrhage was reported in 8.9% cases.²³ Our study also disagrees with a study conducted by Chohan A, in which antepartum haemorrhage was in 26% cases.⁷ Chorioamnionitis was a factor in 2.68% of cases in our study. This finding differs from the finding of a local study conducted in Pakistan where chorioamnionitis was reported in 3.6% cases.²³

Previous postpartum haemorrhage is also associated with an increased risk for subsequent postpartum haemorrhage.³³ In the present study, 2.01% of cases were having previous history of PPH. Previously conducted studies are also in agreement with these results and in these studies; incidence of chorioamnionitis was 4.5%²³ and 4%.⁷

CONCLUSION

Uterine atony was the major factor leading to Primary postpartum haemorrhage in this study. The other common factors causing postpartum hemorrhage were multiparity, antepartum haemorrhage, instrumental delivery, prolonged labour, chorioamnionitis and previous history

of PPH. Our findings confirm the importance of previously recognized factors. Timely identification & management of these factors can help in reducing the incidence of maternal deaths.



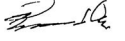


Copyright© 26 July, 2019.

REFERENCES

1. Kaul V, Bagga R, Jain V, Gopalan S. **The impact of primary postpartum hemorrhage in "near-miss" morbidity and mortality in a tertiary care hospital in North India.** Indian J Med Sci. 2006; 60(6):233-40.
2. Thompson W, Harper MA. **Postpartum haemorrhage and abnormalities of the third stage of labour.** In: Chamberlain G, Steer PJ, editors. *Turnbull's obstetrics.* 3rd ed. London: Churchill Living stone, 2001:619-33
3. Mascola MA, Schellpfeffer MA, Kruse TK, Conway AE, Kvale KM, Katcher ML. **Pregnancy-associated deaths and pregnancy-related deaths in Wisconsin, 1998-2001.** WMJ. 2004; 103(5):61-6.
4. Chohan A. **Third stage of labor and its complications.** In: Chohan A, editor. *Fundamental of Obstetrics.* Lahore: Mar Publishers; 2005:360-77.
5. Pal SA. **Haemorrhage and maternal morbidity and mortality in Pakistan.** J Pak Med Assoc. 2007; 57(12):576-7.
6. Sheikh L, Zuberi NF, Riaz R, Rizvi JH. **Massive primary postpartum hemorrhage: Setting up standards of care.** J Pak Med Assoc. 2006; 56(1):26-31.
7. Chohan A, Butt F, Mansoor H, Falak T. **Primary post partum hemorrhage: outcome of different treatment measures.** Biomedica 2006; 22(1):16-20.
8. Sheiner E, Sarid L, Levy A, Seidman DS, Hallak M. **Obstetric risk factors and outcome of pregnancies complicated with early postpartum hemorrhage: A population-based study.** J Matern Fetal Neonatal Med. 2005; 18(3):149-54.
9. **International Confederation of Midwives and International Federation of Gynaecology and Obstetrics. Prevention and treatment of post-partum haemorrhage: New advances for low resource settings.** Int J Gynecol Obstet 2007; 97(2):160-3.
10. Al-Zirqi I, Vangen S, Forsen L, Stray-Pedersen B. **Prevalence and risk factors of severe obstetric haemorrhage.** BJOG. 2008; 115(10):1265-72.
11. Bibi S, Danish N, Fawad A, Jamil M. **An audit of primary post partum hemorrhage.** J Ayub Med Coll Abbottabad. 2007; 19(4):102-6.

12. Lalonde AB, Daviss BA, Acosta A, Herschderfer K. **Postpartum hemorrhage today: Living in the shadow of the Taj Mahal.** In: B-lynn C, Keith LG, Lalonde AB, Karoshi M, eds. **A textbook of postpartum hemorrhage: A comprehensive guide to evaluation, management and surgical intervention.** 1st ed. Dumfries: Sapiens Publishing; 2006; 00:2-10.
13. Rueangchainikhom W, Srisuwan S, Prommas S, Sarapak S. **Risk Factors for Primary Postpartum Hemorrhage in Bhumibol Adulyadej Hospital.** J Med Assoc Thai 2009; 92(12):1586-90.
14. Doran JR, O'Brien SA Jr, Randall JH. **Repeated postpartum hemorrhage.** Obstet Gynecol 1955; 5:186-92.
15. Haynes K, Stone C, King J. **Postpartum hemorrhage and associated hysterectomy in Victoria. Proceeding of the 8th annual conference perinatal society of Australia and New Zeland; Sydney Australia, 2004.**
16. Joseph KS, Rouleau J, Kramer MS, Young DC, Liston RM, Baskett TF. **Investigation of an increase in postpartum hemorrhage in Canada.** 19th Annual Society of Pediatric and Perinatal Epidemiologic Research Meeting; Seattle, Washington, 2006.
17. Abro ST, Kashif F, Shaikh S, Baloch R. **Post partum haemorrhage-a major killer of mothers.** MC. 2009;15(4):180-83
18. Cameron CA, Roberts CL, Olive EC, Ford JB, Fischer WE. **Trend in postpartum haemorrhage.** Aust N Z J Public Health. 2006; 30:151-6.
19. St.George L, Crandon. **Immediate post partum complications,** Aust NZ J obstet Gynaecol 1990;30:52-6
20. Ijaiya MA, Aboyegi AP, Abubakar D. **Analysis of 348 consecutive cases of primary postpartum haemorrhage at a Tertiary Hospital in Nigeria.** J Obstet Gynaecol. 2003; 23:374-7.
21. Viven. **Postpartum hemorrhage in Zimbabwe a risk factor analysis.** Am. J. Perinatal., 1992; 5: 441-4.
22. Khero BR, Tayyab S. **Post partum hemorrhage (PPH), A major killer of women.** The professional Med. J., 2003; 10: 40-4
23. Bibi S, Danish N, Fawad A, Jamil M. **An audit of primary post partum hemorrhage.** J Ayub Med Coll Abbottabad. 2007;19(4):102-6
24. Combs CA, Murphy EL, Laros RK Jr. **Factors associated with postpartum hemorrhage with vagina birth.** Obstet Gynecol 1991; 77:69-76.
25. Abro ST, Kashif F, Shaikh S, Baloch R. **Post partum haemorrhage-a major killer of mothers.** MC. 2009;15(4):180-83
26. Zaman BS, Zaman MS, Badar S, Tariq M. **Risk factors for primary postpartum hemorrhage.** Professional Med J 2007;14(3):378-81
27. Magann EF, Evans S, Hutchinson M, Collins R, Howard BC, Morrison JC. **Postpartum hemorrhage after vaginal birth: An analysis of risk factors.** S Med J. 2005;98:419-22
28. Selo-Ojeme DO, Okonofua FE. **Risk factors for primary postpartum haemorrhage.** A case control study. Arch Gynecol Obstet. 1997; 259:179-87.
29. Ijaiya MA, Aboyegi AP, Abubakar D. **Analysis of 348 consecutive cases of primary postpartum haemorrhage at a Tertiary Hospital in Nigeria.** J Obstet Gynaecol. 2003; 23:374-7.
30. Tamizian O, Arulkumaran S. **The surgical management of postpartum haemorrhage.** Best Pract Res Clin Obstet Gynaecol 2002; 16:81-98.
31. Kastner ES, Figueroa R, Garry D, Maulik D. **Emergency peripartum Hysterectomy: Experience at a community teaching hospital.** Obstet Gynecol 2002;99:971-75
32. Ashraf M., Sheikh N. H., Sheikh A. H., Yousaf A. W. **Maternal mortality: A 10-years study of Lady Willingdon Hospital, Lahore.** Ann. K. E. Med. Coll. 2001;7:205-7
33. Magann EF, Evans S, Hutchinson M, Collins R, Howard BC, Morrison JC. **Postpartum hemorrhage after vaginal birth: An analysis of risk factors.** S Med J. 2005;98:419-22

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author's Signature
1	Hajira Masood	Conceived idea, Study design.	
2	Sobia Mazhar	Data collection.	
3	Syed Muhammad Ali	Literature review.	
4	M. Sajjad Masood	Manuscript writing.	
5	Saima Yasmin Qadir	Data analysis.	
6	Muhammad Ramzan	Statistical review.	