Original Article

FREQUENCY OF CAUSES OF PRIMARY POSTPARTUM HAEMORRHAGE IN A TERTIARY CARE HOSPITAL

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Abstract

Objective: To study the frequency of causes of primary postpartum hemorrhage (PPH) in women managed in a tertiary care Hospital.

material and Methods: The study was conducted in the department of Obstetrics and Gynecology, Unit – l, Lady Willingdon Hospital/ King Edward Medical University, Lahore from July 2013 to December 2013. All the women having postpartum haemorrhage after vaginal delivery in the labour room or referred with primary postpartum haemorrhage were included in the study and were evaluated to see the frequency of postpartum haemorrhage as well as the causes of PPH in women being treated in a tertiary care unit.

Results: During the study period 1344 women delivered in unit I and 250 patients developed postpartum haemorrhage giving frequency of primary postpartum haemorrhage 18.60%. Majority of the women 29.6% (n = 74) were between 26 – 30 years of age, mean and SD was 28.43 ± 4.76 years. The gestation of 55.2% (n = 138) patients was between 37 – 40 weeks.

The frequency of postpartum haemorrhage in booked women during antenatal period was recorded as 25.2% (n = 63) while 74.8% (n = 187) were not booked in any health facility.

Among patients who developed PPH, uterine atony was the most common cause 57.6% (n = 144), followed by genital tract tears which was 29.2% (n = 73). The rest of the causes of PPH were retained placenta in 10% (n = 25), uterine rupture in 3.6% (n = 9) and uterine inversion in 1.6% (n = 4).

Conclusions: Postpartum haemorrhage is still a leading but preventable cause of maternal morbidity and mortality in our country due to under utilization of health facilities, the major cause is uterine atony followed by perineal tears.

Key Words: Primary postpartum hemorrhage, antenatal care in tertiary care hospital, uterine atony, perineal tears.

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Introduction

Postpartum haemorrhage is defined as excessive bleeding from genital tract after delivery of the child. It is divided into primary postpartum haemorrhage (PPH), which is a blood loss > 500 ml in first 24 hours after child birth and secondary postpartum haemorrhage which is excessive loss at any time after 1st day to 42 days of puerperium.[1]

Primary postpartum haemorrhage (PPH) is a life threatening situation.[2] It is the most common cause of

maternal mortality globally, and is a major factor of raised maternal mortality rate in the developing world.[3] There are 600,000 maternal deaths reported worldwide every year and 99% of these occur in developing countries.[4] The prevalence of PPH in Pakistan is 34%.[5]

Uterine atony after delivery accounts for 75 – 90% of primary postpartum haemorrhge. Rest of the causes are retained placental tissue, perineal and vaginal tears, uterine inversion and ruptured uterus.[6]

Postpartum haemorrhage leads to maternal complications of anaemia, shock, disseminated intra vascular coagulation (DIC), acute tubular necrosis leading to renal shutdown. The management of PPH is not without complications like multiple blood transfusions related complications e.g. respiratory distress syndrome and sepsis with uterine packing or bladder injury during postpartum hysterectomy.[7]

In developing countries, high incidence of PPH is mainly due to poor knowledge of importance of antenatal screening of high risk patients and delivery at home by untrained birth attendents.[8] In Pakistan 70% of pregnant women do not receive any skilled antennatal or intrapartum care during childbirth and when they develop complications during labour they are rushed to the tertiary care hospital in moribund situation where it is difficult to save maternal or fetal life due to delay in intervention or lack of resources.[9]

This study was conducted to identify the frequency of primary postpartum haemorrhage managed in our unit and to identify the major cause of PPH in booked and unbooked patients.

The important aspect is that this major number of maternal mortality and morbidity from postpartum haemorrhage is preventable.[10] There is a need to identify the women at risk and guide them to proper health care units for regular antenatal follow-up and delivery in a setting where PPH can be prevented or managed.[11] Traditional birth attendants should be trained to recognize the risk factors of PPH in antenatal period and refer these patients to proper health facility.[12]

The health professionals should be periodically given drills to manage obstetrical emergencies and then skill assessments should be done .[13] Health care personals need to be up-to-date with recent advances to treat PPH and its complications.[14]

Objectives: To study the frequency of causes of postpartum hemorrhage (PPH) in women managed in a tertiary care Hospital.

Material and Methods

Study Design: Cross sectional study.

Setting: Department of Obstetrics and Gynaecolog, Unit-l, Lady Willingdon Hospital/ King Edward Medical University, Lahore.

Duration of Study: July 2013 to December 2013.

Sample Size: The calculated sample size of 250 cases with 3% margin of error, 95% confidence level and taking expected percentage of uterine inversion 6% (least among all causes) of primary Postpartum haemorrhage in patient presenting to a tertiary care settings.

Sampling Technique: Non-probability: purposive sampling.

Sample Selection

Inclusion Criteria

- Patients who developed primary PPH in hospital after vaginal delivery.
- Patients who were referred with primary PPH to our unit,
- Age 20 – 45 years.
- Patients having singleton gestation.

Exclusion Criteria

- Patient with known bleeding disorder.
- Patients undergoing caesarean section.
- Patients having placenta previa or placenta accrete.

Data Collection Procedure

The cases fulfilling the inclusion criteria were included in the study. For calculation of frequency of PPH, the total number of deliveries in the unit I Lady Willingdon Hospital during the study period was recorded. Patients with PPH were asked about antenatal care and their previous antenatal record was checked to determine the cause of PPH in booked patients and un-booked ones.

After taking verbal informed consent, the demographic details of the women like age, parity, duration of gestation were recorded in a pre designed proforma.

The details of labour and delivery were recorded e.g. induced or augmented labour, duration of labour, spontaneous or instrumental delivery, any episiotomy or tears, time of delivery of placenta, complete or piecemeal, the number of pad soaked since delivery. Vitals were monitored to assess the haemodynamic status of the patient. Per abdominal examination was done to see whether uterus was contracted or not. Genital tract exploration was done to find out any genital tract tear or uterine inversion. Retained placental tissue was determined by radiological imaging. Severity of PPH was determined by amount of vaginal bleeding needing intervention like uterine massage or packing, fall in the haemoglobin of more than 1 gm/dl from pre delivery haemoglobin wherever available, or number of blood units transfused.

Data Analysis Procedure

The collected information was entered into SPSS version 16 and percentages were used to describe the results. Quantitative variable such as age was presented as mean and standard deviation. Qualitative variable such as causes of PPH i.e. uterine atony, retained placenta, parineal tear, inversion of uterus, uterine rupture. Frequency also was calculated for parity.

Results

Age distribution of the patient was done in years. The mean age of the patients was 31 years (18 – 45 years) (Table 1).

About 31% of the women were primipara or para two while the majority of the women (57%) were multiparous only few (12%) were grand multipara (Table 2).

Table 1: Age Distribution of the Patients (n = 250).

Age (in Years)	No. of Patients	%
18 – 25	42	16.8
26 – 30	74	29.6
31 – 35	67	26.8
35 – 40	38	15.2
41 – 45	29	11.6
Total	250	100
Mean and SD	28.43 ± 4.76	

Table 2: Parity of the Patients (n = 250).

Parity	No. of patients	%
1 – 2	78	31.2
3 – 4	142	56.8
> 4	30	12.0
Total	250	100

Most of the women were literate with close to 75% having at least secondary school education. Only few of the women (20%) were preterm while rest of them were at term (Table 3).

Table 3: Gestational Age of the Patients (n = 250).

Gestational Age (in Weeks)	No. of Patients	%
$35 – 36^{+6}$	49	19.6
$37 – 39^{+6}$	138	55.2
> 40	63	25.2
Total	250	100

The frequency of primary post partum haemorrhage was 19% of total vaginal deliveries in the study period. Primary post partum haemorrhage (PPH) in booked cases was 25% while 75% occurred in un-booked patients who delivered outside the hospital (Table 4).

Table 4: Frequency of Postpartum Haemorrhage in Women Utilizing Antenatal Care during Pregnancy (n = 250).

Patients Utilizing Antenatal Services	No. of Patients Developing PPH	%
Yes	63	25.2
No	187	74.8
Total	250	100

The commonest cause of postpartum haemorrhage, in this study was uterine atony and it accounted for

58% of all cases of postpartum haemorrhage seen in our centre during the period under review, this was followed by genital tract trauma in 29% and retained placenta or placental tissue in 25%. Uterine rupture and uterine inversion was seen in only 3.6% and 1.6% of the cases of PPH respectively (Table 5).

Table 5: Frequency of Causes of Primary Postpartum Haemorrhage (n = 250).

Causes of PPH	No. of Patients	%
Uterine atony	144	57.6
Genital tract tear	73	29.2
Retained placental tissue	25	10
Uterine rupture	9	3.6
Inversion of uterus	4	1.6

*Some patients had more than 1 cause of PPH

Discussion

Maternal mortality or morbidity reflects efficiency of the health care system of a country. Maternal death due to postpartum haemorrhage accounts for 25% of all maternal deaths internationally and 60% in some developing countries. The prevalence of PPH in Pakistan is 34% as quoted by WHO in 2007.[15]

The frequency of PPH in our study was 18.60%. This is lower than WHO but higher than other hospital studies like Yousaf et al (2010)[16] show frequency of 9.1%. The high number in our study is because our hospital is a tertiary care hospital dealing with referrals and unbooked cases.

Other developing countries like those in Africa, have frequency of primary postpartum haemorrhage of 41% which is higher than ours while developed countries have lower frequency of PPH 2 – 11%.[17]

In our study majority of the patients (74.8%) who developed PPH were unbooked which means they have not utilized the antenatal health services and they were not assessed to be at risk of developing PPH during labor. The low PPH rate in booked patients indicate that with emphasis on proper information concerning pregnancy and delivery care, and skilled monitoring of labour and delivery we can reduce incidence of primary PPH.[18]

Our study shows the contributing factors of PPH are uterine atony, lower genital tract laceration, retained placental tissues, uterine rupture and uterine inversion. The uterine atony is the most common cause of PPH having frequency about 57.6%.[19] Another study showed uterine atony is responsible for up to 80% of primary PPH.[18] which is more than our study. In Abottabad a study showed uterine atony incidence 58% which is similar to our study.[20]

Active management of third stage of labour with Oxytocin reduces incidence of PPH by 40%.[21] In deliveries at home or at basic health units Misoprostol 800 micrograms per rectally can be used in place of injectable oxytocic drugs for prophylaxis of PPH as its economic and can be stored at room temperature.[22] The patients who have risks of developing PPH should be referred for delivery to health care units with skilled medical personal and blood bank facilities.[23]

Lower genital tract trauma during delivery was found in 29.2% of cases in our study. In another study frequency of genital laceration was 36.3% which is higher than our study.[24] Yet another study showed PPH due to laceration of the vulva, perineum, vagina, cervix or uterus (rupture) constituted 11.84% of cases.[25] This result is very low than our study. In our study genital tract trauma after instrumental delivery was seen in hospital deliveries while cervical and perineal tears seen in referred patients. This emphasizes the need of proper supervision and training of post graduate trainee doctors for conducting instrumental deliveries. There should be drills on mannequins and skilled doctors at senior registrar level should conduct instrumental deliveries themselves or let the junior doctors do it under direct supervision.

Retained placenta or placental tissue was third major cause of PPH (25%) in our study. There is wide range of incidence of retained placental tissue in different local studies from 6% to 37%. [26,27,28] In the international literature it is quoted 5 to 10%.[29] This difference merely indicates a referral bias, as all cases were those referred after home deliveries or from private clinics and no case of retained placenta occurred in hospital deliveries. But there is a need to educate the health care providers regarding complete delivery of the placenta after it gets spontaneously separated from uterus as early pulling or manual separation leads to retained placental tissue.

Uterine rupture contributed 3.6% of the PPH cases in our study, among these mostly the uterine ruptured occurred in patients with previous caesarean who did not come to the hospital for fear of having repeat caesarean and went to local dai or less experienced doctor. Another study from Karachi showed frequency of

uterine rupture 47.1%[30] which is very high compared to our study but that number was in six years.

Primary PPH is a life threatening obstetrical emergency and contributes to high maternal morbidity and mortality rate of Pakistan. Our study showed that the frequency of primary PPH in our health care system is higher than recorded globally. Lack of risk assessment during antenatal care and delivery by untrained personal is the major causes of this high rate of PPH.

Conclusion

Postpartum haemorrhage is still a leading but preventable cause of maternal morbidity and mortality in our country where health services are under utilized by pregnant women. Uterine atony and perineal tears are the major causes which need to be kept in mind and managed properly.

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