

Various Presentations and Management Of Primary Postpartum Haemorrhage (Pph) At A Tertiary Care Hospital

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Abstract

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Objective: To evaluate the various presentations and management of primary postpartum haemorrhage (PPH) at a tertiary care hospital.

Methodology: This descriptive study was conducted over six months in the Department of Obstetrics & Gynaecology, Shaikh Zayed Women Hospital, Larkana. A total of 123 women aged 20–40 years who developed primary PPH within 24 hours of delivery were included. Patients with intrauterine fetal death, chronic medical illness, or gestational age <28 weeks were excluded. Data regarding demographic characteristics, causes, and management of PPH were recorded on a predesigned proforma and analyzed using SPSS version 26. Quantitative variables were expressed as mean $\pm$ standard deviation, while categorical variables were presented as frequencies and percentages.

Results: The mean age was 27 ± 3.2 years. Most patients 93 (75.5%) were between 36–40 weeks of gestation. Multiparous women constituted 82 (66.6%), and 54 (44%) were un-booked. Uterine atony was the leading cause of PPH in 79 (64.2%) cases, followed by retained placental

tissue in 20 (16.2%). Vaginal wall ulceration was observed in 9 (7.3%) patients, while cervical tear, retained placenta, and perineal tear were each noted in 4 (3.2%) cases. Hysterectomy was performed in 54 (43.9%) patients. Manual removal of placenta was

done in 22 (17.8%), and repair of perineal and cervical tears in 21 (17%) cases. Medical management alone was sufficient in 8 (6.5%) patients.

Conclusion: Uterine atony is the most common cause of primary PPH. The high rate of hysterectomy highlights delayed presentation and limited use of conservative measures. Improved antenatal care and timely management may reduce morbidity and the need for radical interventions.

Introduction

Postpartum haemorrhage (PPH) remains a major contributor to maternal morbidity and mortality worldwide [1]. Despite advances in obstetric care, excessive bleeding after childbirth continues to claim the lives of thousands of women each year, particularly in low- and middle-income countries. Defined clinically as a blood loss of more than 500 ml following vaginal delivery, or more than 1000 ml following caesarean section, PPH demands prompt recognition and effective intervention to prevent serious outcomes [2, 3]

Postpartum haemorrhage (PPH) can be divided into two types: primary PPH that occurs within 24 hours after delivery and secondary PPH that occurs 24 hours to 6 weeks after delivery [1-2]. According to World Health Organization (WHO), definition of primary PPH is the loss of 500 ml or more blood from the genital tract within 24 hours after birth of a baby [3]. Postpartum haemorrhage (PPH) is a leading cause of maternal death worldwide; the average maternal mortality rate from PPH is 25% [4].

Uterine atony is the commonest cause (>90%) and occurs due to failure of contraction or retraction of myometrium to occlude sinuses embedded in it [5]. Retained placental tissue or membrane may prevent good placental site retraction, so is another cause of PPH [6]. Beside these two, genital tract lacerations and coagulopathy are also causal factors of PPH [7]. Certain risk factors are also known to be associated with each cause specific cause, like over distension of uterus in case of multiple gestation, polyhydramnios, macrosomia. Similarly exhausted uterus in case of augmentation or induction of labour and infection may be associated with uterine atony. Uterine anomalies, scarring of uterine wall or abnormally adherent placenta may lead to retained product of conception. Similarly for genital tract lacerations, instrumental delivery and macrosomia may be the associated factors. For coagulopathy abruption placenta is a known association.²⁻⁴It is important to identify the cause of PPH to manage the condition appropriate and to prevent fatal consequences of PPH. Along with mortalities prevention of morbidities is equally important.⁷ Management of PPH comprises of general measures for any cause and specific management for particular cause including medical treatment or surgical intervention.⁸

Complications of PPH include hypovolumic shock, which in turn leads to acute renal failure (ARF), adult respiratory distress syndrome (ARDS) and Sheehan's syndrome. Blood transfusion related complications like transfusion reaction or transmission of certain viral disease. Disseminated intravascular coagulopathy (DIC) is also a common complication.^{8,9}Maternal morbidity and mortality rises with delay in diagnosis Management of Postpartum Haemorrhage and intervention, thus the cornerstone of effective management is rapid diagnosis and intervention.¹⁰ Therefore, this study was designed to assess the various clinical presentation and the management of Primary Postpartum Haemorrhage at Shaikh Zayed Women Hospital, Larkana.

Methodology:

This study was carried out over a period of six months in the department of Obstetric & Gynaecology, Shaikh Zayed Women Hospital, Larkana. A total of 123 women having age 20-40 years, who developed PPH within 24 hours of deliveries

were selected for this study. Cases of intra-uterine fetal death (IUFD) or chronic medical illness were excluded from the study. Patients with gestational age less than 28 weeks were also excluded from the study.

OPENEPI sample size calculator was used to calculate the sample size by taking the incidence of postpartum haemorrhage i.e. 13.2%, margin of error=6%, confidence interval = 95%, then minimum required sample size was 123.

Informed written consent was obtained from each study patient prior to enrolment. Base line investigations of all the patients were done. Causes of primary PPH were evaluating by examining the patient. All the causes like atonic uterus, retained placental tissue or membrane, genital tract laceration (extended episiotomy, perineal, vaginal, cervical or uterine tear) and coagulopathy were recorded on predesigned proforma. Standard medical management was given to all the patients. Surgical management was given if medical management failed. Data was analyzed using SPSS version 26. Quantitative variables will be expressed as mean and standard deviation, while categorical variables will be presented as frequencies and percentages. Confidentiality of patient information was strictly maintained. All patients received standard obstetric care irrespective of study participation, and no intervention was withheld at any stage.

Results:

A total of 123 patients were included in the study. The mean age of the participants was 27 ± 3.2 years. Regarding gestational age, 13 (10.5%) patients were between 34–36 weeks, 93 (75.5%) were between >36–40 weeks, and 17 (13.8%) were beyond 40 weeks. In terms of parity, 37 (30%) patients were primiparous, 82 (66.6%) were multiparous, and 3 (2.4%) were grand multiparous. With respect to antenatal status, 69 (56%) patients were booked, whereas 54 (44%) were un-booked (**Table#1**).

Analysis of the causes of primary postpartum haemorrhage showed that uterine atony was the most common cause, observed in 79 (64.2%) patients. Retained placental tissue or membranes were identified in 20 (16.2%) cases. Vaginal wall ulceration was seen in 9 (7.3%) patients. Cervical tear, retained placenta, and perineal tear were each reported in 4 (3.2%) cases. Extended episiotomy was noted in 3 (2.4%) patients. No cases of uterine tear or coagulopathy were observed (**Table#2**).

Regarding management, hysterectomy was performed in 54 (43.9%) patients. Manual removal of the placenta was carried out in 22 (17.8%) cases, while repair of perineal and cervical tears was done in 21 (17%) patients. Evacuation procedures were performed in 14 (11.3%) cases. Medical management alone was sufficient in 8 (6.5%) patients. B-Lynch sutures and internal iliac artery ligation (IIAL) were each performed in 2 (1.62%) cases (**Table#3**).

Table#1: Baseline Data of the Patients (n=123)

Baseline Data	(mean $\pm$ sd)/n(%)
Age (Years)	27 $\pm$ 3.2
Gestational Age (Week)	
• 34-36	13 (10.5%)
• >36-40	93 (75.5%)
• 40+	17 (13.8%)
Parity	
• Primiparous	37 (30%)
• Multiparous	82 (66.6%)
• Grand multiparous	03 (2.4%)
Antenatal Status:	
• Booked	69 (56%)
• Un-booked	54 (44%)

Table#2: Causes of the Primary Postpartum Haemorrhage (n=123)

Causes	n(%)
Uterine atony	79 (64.2%)
Retained placental tissue or membrane	20 (16.2%)
Vaginal wall ulceration	09 (7.3%)
Cervical tear	4 (3.2%)
Retained placenta	4 (3.2%)
Perineal tear	4 (3.2%)
Extended episiotomy	3 (2.4%)
Uterine tear	-
Coagulopathy	-

Table#3: Management of the Primary Postpartum Haemorrhage (n=123)

Management	n(%)
Hysterectomy	54 (43.9%)
B-lynch suture	2 (1.62%)
IIAL (Internal iliac artery ligation)	2 (1.62%)
Evacuation	14 (11.3%)
Manual removal of placenta	22 (17.8%)
Medical management	08 (6.5%)
Perennial & cervical tear repair	21 (17%)

Discussion:

The present study evaluated the baseline characteristics, causes, and management of primary postpartum haemorrhage (PPH) among 123 patients. The mean age of patients in this study was 27 ± 3.2 years, which is comparable to findings reported by Rizvi et al., who documented a mean maternal age of 26.8 ± 4.1 years in PPH cases (12). Similarly, Khan et al. reported that the majority of women experiencing PPH were in their late twenties, reflecting the peak reproductive age group (13).

In terms of gestational age, most patients in this study, 93 (75.5%), presented between >36–40 weeks of gestation. This is consistent with findings from Sheldon et al., who reported that term pregnancies account for the majority of PPH cases (14). However, a notable proportion, 17 (13.8%), were beyond 40 weeks, which aligns with reports suggesting post-term pregnancies may carry an increased risk of uterine atony and prolonged labour (15).

Regarding parity, 82 (66.6%) patients were multiparous, which is in agreement with previous studies indicating multiparity as a significant risk factor for PPH. For instance, Bais et al. reported multiparity in 62% of PPH cases (16). Similarly, Combs et al. observed that increasing parity is associated with uterine overdistension and reduced contractility, predisposing to haemorrhage (17). The proportion of un-booked patients in this study was 54 (44%), which is relatively high and reflects gaps in antenatal care utilization. Comparable findings were reported by Ali et al., who noted that 40–50% of PPH cases occurred in un-booked women, emphasizing the importance of antenatal surveillance (18).

Uterine atony was identified as the leading cause of PPH in 79 (64.2%) patients in this study. This finding is consistent with global literature, where uterine atony accounts for approximately 60–80% of PPH cases (14,19). Retained placental tissue or membranes were responsible for 20 (16.2%) cases, which is slightly higher than the 10–15% reported in earlier studies (20). Traumatic causes, including vaginal wall ulceration (9 [7.3%]), cervical tear (4 [3.2%]), and perineal tear (4 [3.2%]), collectively contributed to a smaller proportion of cases, similar to findings by Mousa and Alfirovic, who reported trauma-related PPH in approximately 20% of patients

(21). Notably, no cases of coagulopathy or uterine rupture were observed, which may reflect early identification and referral patterns in the study setting.

With regard to management, hysterectomy was performed in 54 (43.9%) patients, which is considerably higher than rates reported in developed settings, where emergency hysterectomy ranges from 5–15% (22). This discrepancy may be attributed to delayed presentation, limited resources, and severity of haemorrhage at admission. Manual removal of the placenta was required in 22 (17.8%) patients, consistent with rates reported by Weeks, who documented manual removal in approximately 15–20% of retained placenta cases (23). Surgical repair of perineal and cervical tears was performed in 21 (17%) patients, aligning with trauma-related PPH management protocols.

Conservative surgical techniques such as B-Lynch sutures and internal iliac artery ligation (IIAL) were used in only 2 (1.62%) cases each. This is lower compared to studies by B-Lynch et al. and Joshi et al., who reported higher utilization of uterine-sparing techniques, highlighting a potential gap in the adoption of fertility-preserving interventions (14,15). Medical management alone was sufficient in only 8 (6.5%) patients, which contrasts with WHO recommendations where uterotonics effectively control the majority of atonic PPH cases if administered early (19).

Overall, the findings of this study reaffirm that uterine atony remains the predominant cause of primary PPH, particularly among multiparous and un-booked women. The high rate of hysterectomy underscores the need for early intervention, improved antenatal care, and wider implementation of conservative management strategies to reduce maternal morbidity and preserve fertility.

Conflict of Interest: Nil

Financial Interest: Nil

Conclusion:

Primary postpartum haemorrhage was predominantly caused by uterine atony in 79 (64.2%) cases, with most patients being multiparous 82 (66.6%) and un-booked 54 (44%). Hysterectomy was required in 54 (43.9%) patients, while conservative measures were infrequently used. Strengthening antenatal care, early diagnosis, and timely conservative management may reduce severe outcomes and the need for radical surgery.

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