

Research Article

A REVIEW OF POSTPARTUM HAEMORRHAGE CASES AT A REFERRAL HOSPITAL IN SOUTHERN NIGERIA

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Abstract

Postpartum haemorrhage poses management challenges for the obstetrician and it is a significant contributor to perinatal and maternal morbidity and mortality in Nigeria and globally. Anticipation in high risk patients, early identification and prompt institution of treatment is essential to curtail this obstetric scourge and preserve our mothers. The objectives of this study are to determine the incidence, risk factors, types and causes of primary postpartum haemorrhage (PPH), place and mode of delivery, and the fetomaternal outcomes of PPH at the Federal medical centre, Yenagoa, Bayelsa, Nigeria. The study was a descriptive retrospective study. In the three year period under review there were 34 cases of postpartum haemorrhage and there were 2374 deliveries giving the prevalence of 1.43%. The mean age was 30.2 years +/- 6.6. The most identifiable risk factor for PPH was prolonged labour accounting for 38.2% of cases. Majority of the cases was primary postpartum haemorrhage constituting 91.2% of PPH. Uterine atony was the most common cause of postpartum haemorrhage which was 50%. About 44.1% delivered in the hospital. Majority of the cases delivered vaginally and 91.2% survived while 8.8% died. About 76.5% of the neonates had good outcome. Postpartum haemorrhage is a legitimate leading cause of maternal morbidity and mortality; hence the departments must have the needed expertise to identify at risk patient and act swiftly so as to prevent the associated morbidity, lasting disability and mortality.

**Keywords:** Postpartum, haemorrhage, risk factors, fetomaternal outcomes.

INTRODUCTION

Obstetric haemorrhage remains a significant contributor to global maternal mortality despite considerable scientific and technological advances made at discerning its causation, prevention and effective treatment. It contributes 25% of global maternal mortality; postpartum haemorrhage accounts for about 60% of all obstetric haemorrhage (Kwawukume *et al.*, 2015). Postpartum haemorrhage (PPH) is major cause of maternal morbidity and mortality. it denotes excessive bleeding from the genital tract within 6-weeks following delivery or childbirth (> 500 ml in vaginal delivery or > 1000 ml in caesarean delivery); it is described as primary if it occurs within 24 hour of childbirth and secondary if it occurs after the first day but within six weeks of delivery (Kwawukume *et al.*, 2015; Edhi *et al.*, 2016; Rani and Begum, 2017; Bouet *et al.*, 2019). The main causes include uterine atony, genital tract and cervical laceration, retained placenta and coagulation defects (Rani and Begum, 2017; Bouet *et al.*, 2019). Risk factors associated with postpartum haemorrhage includes age less than 18 years, a previous caesarean section, history of postpartum haemorrhage, placental abruption and praevia, conception through IVF, pre-delivery anaemia, stillbirth, halothane anaesthesia, prolonged labour, use of oxytocin for induction or augmentation of labour, multiple pregnancy, macrosomia and coagulation abnormalities (Kwawukume *et al.*, 2015; Edhi *et al.*, 2016; Liu *et al.*, 2021). The common complications include postpartum anaemia, hypovolemic shock, renal failure, Sheehan's syndrome and sepsis (Kwawukume *et al.*, 2015; Edhi *et al.*, 2016; Emechebe *et al.*, 2016). A number of drugs and various surgical techniques are used for prevention and control of postpartum haemorrhage; however, prevention when

anticipated is always better than cure (Rani and Begum, 2017; Bouet *et al.*, 2019). One of the ways to prevent postpartum haemorrhage is active management of third stage of labour. This is implemented as a package including uterotonic therapy with delivery of the anterior shoulder of the cephalic presenting fetus, early cord clamping and placental delivery by controlled cord traction (Rani and Begum, 2017; Bouet *et al.*, 2019; Yogesh *et al.*, 2019). Oxytocin is the most commonly used uterotonic agent for the prevention of postpartum haemorrhage. <sup>7</sup> However the problem with oxytocin is the issue of storage that renders it ineffective because of its cold chain (Yogesh *et al.*, 2019). Surgical treatment of postpartum haemorrhage is rarely needed, but it may be the only lifesaving option in clinical scenarios, especially after failure of conservative approaches, such as medical treatment with uterotonic agents and bimanual uterine compression. Surgical management is resorted to as the only option in certain clinical settings like in morbidly adherent placenta, extensive uterine rupture and extensive cervical laceration (Bouet *et al.*, 2019). The study was undertaken to determine of PPH, identify the associated socio-demographic factors, causes, place and mode of delivery, fetomaternal outcomes and complications associated with postpartum haemorrhage in the Federal Medical Centre, Yenagoa, Bayelsa, Nigeria.

METHODOLOGY

This is a descriptive retrospective study of women managed for postpartum haemorrhage at the Federal Medical Centre, Yenagoa, Bayelsa, Nigeria over a period of 3-years. The hospital serves as a referral centre for private, cottage, general and specialist hospital in the Niger Delta region A list of all patients' (names and hospital numbers) that had postpartum haemorrhage from 1<sup>st</sup> of January, 2017 to 31<sup>st</sup> of December, 2019 were identified from theatre, department and nurses

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records. With the folder numbers, the case notes were retrieved from the medical records department of the hospital. Thirty seven cases were identified but only 34 cases notes were retrieved (giving a retrieval of 91.9%) and analysed. Relevant information needed for the study were retrieved from the cases notes and entered into a self-designed proforma. Data obtained were coded, entered into a spread sheet, analysed using statistical package for social science software version 25 software packages and expressed in figures, percentages and presented in tables. All patients who had postpartum haemorrhage (from the age of fetal viability to term) during the study period were included in this study. Cases of haemoglobinopathies and blood dyscrasias were excluded from the studies. Ethical clearance was obtained from the hospital's Ethics and Research Committee prior to the commencement of the study.

## RESULTS

### Socio-demographic characteristics of parturient

During the study period a total of 2374 deliveries were recorded and there were 34 cases of postpartum haemorrhage giving the prevalence of 1.43%. The mean age was 30.2 years +/- 6.6. Postpartum haemorrhage was commoner in the age bracket 21 to 30 years and in patients that are para 2 to 4. Majority of the cases 79.4% were unbooked and occurred in term pregnancies (Table 1).

### Predisposing factors to postpartum haemorrhage

Prolonged labour was the commonest predisposing factor for PPH (38.2%), followed by pregnancies with foetal macrosomia (17.6%). Previous caesarean section and uterine fibroids were the least predisposing factors (5.9%) each (Table 2).

### Causes and type of postpartum haemorrhage

Uterine atony (50%) was the major cause of PPH and more in the unbooked patients (occurring in the multipara and grand-multipara equally) followed by those who had genital tract lacerations (more in the multipara). At least 8 out of 10 cases had primary PPH (88.2%) and it occurred more in the unbooked patients.

Grand-multiparae were most affected by primary PPH, followed by multiparae and primiparae (Table 3).

**Table 1. Socio-demographic characteristics of parturient**

Characteristics	Frequency N= 34	Percentages (%)
<b>Age</b>		
Less 20 years	1	2.9
21-30 years	18	52.9
31- 40 years	13	38.3
40-50 years	2	5.9
<b>Parity</b>		
Primipara (P <sub>1</sub> )	5	14.7
Multipara (P <sub>2</sub> - P <sub>4</sub> )	15	44.1
Grandmultipara (>P <sub>5</sub> )	14	41.2
<b>Booking Status</b>		
Booked	7	20.6
Unbooked	27	79.4
<b>Gestational Age</b>		
Preterm	2	5.9
Term	32	94.1

**Table 2. Predisposing factors to postpartum haemorrhage**

Characteristics	Frequency N= 34	Percentages (%)
Prolonged Labour	13	38.2
Fetal Macrosomia	6	17.6
Augmented Labour	4	11.8
Maternal Anaemia	4	11.8
Multiple Gestation	3	8.8
Previous C/Section	2	5.9
Uterine Fibroid	2	5.9

### Place and mode of delivery for postpartum haemorrhage cases

Majority of the deliveries (44.1%) took place in the hospital with a large chunk (32.4%) are taking place at a Traditional Birth Attendant's (TBA's) place. The multipara parturient had more of their deliveries at the hospital while the grand-multipara had more theirs at the TBA's place. 85.3% of the cases were delivered by spontaneous vaginal delivery (Table 4)

### Number of fetuses and Distribution of fetomaternal outcome

PPH was most prevalent in parturient that had singleton pregnancies as compared to those with twin pregnancies.

**Table 3. Causes and type of postpartum haemorrhage**

Characteristics	Booking Status	PARITY			Total (%)
		P <sub>1</sub> (%)	P <sub>2</sub> -P <sub>4</sub> (%)	>P <sub>5</sub> (%)	
	Total	3 (17.6)	7 (41.2)	7 (41.2)	17 (50)
	Booked	0	2	2	4
Uterine Atony	Unbooked	3	5	5	13
	Total	1 (12.5)	4 (50)	3 (37.5)	8 (23.5)
Genital Tract Laceration	Booked	0	3	0	3
	Unbooked	1	1	3	5
	Total	1 (14.3)	2 (28.5)	4 (57.2)	7 (20.6)
Retained Placenta/RPOC	Booked	0	0	0	0
	Unbooked	1	2	4	7
	Total	0 (0)	2 (100)	0 (0)	2 (5.9)
Uterine Rupture	Booked	0	0	0	0
	Unbooked	0	2	0	2
Types of PPH Characteristics		P <sub>1</sub> (%)	P <sub>2</sub> -P <sub>4</sub> (%)	>P <sub>5</sub> (%)	Total (%)
	Total	5 (16.7)	12 (40)	13 (43.3)	30 (88.2)
Primary	Booked	1	4	2	7
	Unbooked	4	8	11	23
	Total	0 (0)	3 (0.75)	1 (0.25)	4 (11.8)
Secondary	Booked	0	0	0	0
	Unbooked	0	3	1	4

P – Parity, RPOC – Retained products of conception, PPH – Primary postpartum haemorrhage

Table 4. Place and mode of delivery for PPH cases

Place of Delivery				
Characteristics	P <sub>1</sub> (%)	P <sub>2</sub> – P <sub>4</sub> (%)	>P <sub>5</sub> (%)	Total (%)
Hospital	3 (20)	9 (60)	3 (20)	15 (44.1)
TBA	1 (9.1)	3 (27.3)	7 (63.6)	11 (32.4)
Home	1 (12.5)	3 (37.5)	4 (50)	8 (23.5)
Mode of Delivery				
Characteristics	P <sub>1</sub> (%)	P <sub>2</sub> – P <sub>4</sub> (%)	>P <sub>5</sub> (%)	Total (%)
Total	3 (10.3)	14 (48.3)	12 (41.4)	29 (85.3)
SVD	1	4	1	6
Unbooked	2	10	11	23
Total	2 (40)	1 (20)	2 (40)	5 (14.7)
C/S	0	0	1	1
Unbooked	2	1	1	4

P-Parity, TBA- Traditional birth attendant, SVD- Spontaneous vaginal delivery, C/S- Caesarean section

Table 5. Number of fetuses and Distribution of fetomaternal outcome

Characteristics	Frequency N= 34	Percentages (%)
<b>Number of fetuses</b>		
Singleton	31	91.2
Twin	2	5.9
Triplet	1	2.9
<b>Distribution of fetomaternal outcome</b>		
<b>MATERNAL:</b>		
Survived	31	91.2
Maternal Death	3	8.8
<b>Fetal:</b>		
Normal	26	76.5
SCBU Admission	3	8.8
Perinatal Death	5	14.7

Table 6. Distribution of cases according to management of PPH

Treatment modality	Options	Frequency N= 34	Percentages (%)
Medical	Uterotonics drugs	15	44.1
	Uterine compression	2	5.9
Surgical	Repair of cervical or Perineal tear	8	23.5
	Removal of Retained Placenta & Products' of conceptions	7	20.6
	Hysterectomy	2	5.9

There was a high maternal survival rate of 91.2%; however 8.8% of the mothers died. About 76.5% of the neonates had no issue while 8.8% got admitted into the SCBU for prematurity and 14.7% perinatal mortality (Table 5).

#### Distribution of cases according to management of PPH

Most of the PPH cases were managed via medical (uterotonics; 44.1%). Others had surgical treatments, which was common amongst those who had perineal and cervical tears, followed by those had retained product of conception and products' of conceptions. (Table 6)

#### DISCUSSION

The prevalence of PPH in this study was 1.43% which is in accordance with other studies (Liu *et al.*, 2021; Onyegbule *et al.*, 2015) and lower than 3.51% and (Ngwenya, 2016) 9% (Ononge *et al.*, 2016) in some other studies. Majority of the cases of postpartum haemorrhage were observed among the multiparae which is similar to studies done in Owerri (Yogesh *et al.*, 2019) and India (Onyegbule *et al.*, 2015). The mean age of parturients was 30.2 years  $\pm$  6.6 and is comparable to other studies in Calabar (Emechebe *et al.*, 2016) and Owerri (Onyegbule *et al.*, 2015). About 79.4% of the women were unbooked which possibly accounted for the predisposing factors, causes and types of post-partum haemorrhage; this is similar to a study done in Calabar (Iklaki *et al.*, 2016).

This may be responsible for the morbidity and mortality associated with postpartum haemorrhage. About 91.2% of the study group had singleton delivery while 5.9% and 2.9% had twin and triplet deliveries respectively. The major predisposing factor observed in this study was prolonged labour (38.2%) which could be attributed to most patients been unbooked and their labour was not properly managed; this is similar to a study in Japan (Nyfløt *et al.*, 2017). Others includes fetal macrosomia (17.6%), augmented labour (11.8%), maternal anaemia (11.8%), previous caesarean section (5.9%) and uterine fibroid (5.9%) and consistent with other studies. [5,8,9,10,12,13] (Liu *et al.*, 2021; Onyegbule *et al.*, 2015; Ngwenya, 2019; Ononge *et al.*, 2016; Nyfløt *et al.*, 2017; Green *et al.*, 2015). It is worthy to note that postpartum haemorrhage can occur in the absence of any identifiable risk factor; hence anticipation of its occurrence, prompt and adequate intervention will go a long way to reduce the adverse outcome (Green *et al.*, 2015). Uterine atony is the global leading cause of postpartum haemorrhage following spontaneous vaginal delivery or caesarean and accounted for 50% of cases of postpartum haemorrhage in this study. This is consistent to other studies (Liu *et al.*, 2021; Emechebe *et al.*, 2016; Yogesh *et al.*, 2019; Onyegbule *et al.*, 2015; Ngwenya, 2016; Ononge *et al.*, 2016). It can be anticipated if one of the risk factors of uterine over distension such as polyhydramnios, multiple gestation or fetal macrosomia and prolonged labour which all lead to primary postpartum haemorrhage (Green *et al.*, 2015). Other causes include genital tract laceration (23.5%), retained placenta and retained product of conception

(20.6%) and uterine rupture (5.9%). This is in keeping with a study in India (Fasiha *et al.*, 2017). Majority of the cases were primary postpartum haemorrhage which accounted for 88.24% compared to 11.76% of secondary postpartum haemorrhage; with majority of the patient been unbooked. This is comparable to a study done in India (Sowmya *et al.*, 2019). About 44.1% delivered in the hospital while 32.4% and 23.5% delivered at the TBA's place and home respectively. Delivery conducted in the hospital will reduce the morbidity and mortality associated with this condition. In this study, 44.1% of cases had medical management (uterotonics drugs) and 55.9% cases had various form of surgical management. Among the surgical management; 5.9% cases had uterine compression, 23.5% had perineal and cervical repair, 20.6% had removal of retained product of conception and 5.9% had hysterectomy. This is in keeping with other studies (Kwawukume *et al.*, 2015; *et al.*, 2019; Yogesh *et al.*, 2019). The study observed a high maternal survival rate of 91.2%, however 8.8% died. This is consistent with a study done by Ngwenya *et al.* (2019.) It may be due to prompt and aggressive care together with a functional and reliable blood bank in our facility.

## Conclusion

The prevalence of postpartum haemorrhage is 1.4% in our facility. Postpartum haemorrhage was more in the multipara's and most of the women were unbooked. Prolonged labour was the most identified risk factor of postpartum haemorrhage. Uterine atony was the major cause, while primary postpartum haemorrhage was the common type observed. A significant population did not deliver in the hospital. Fetomaternal outcome was encouraging. Awareness and health campaigns, early and regular antenatal care with prompt and time intervention will go a long way reduce morbidity and mortality associated with this condition.

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