

PRIMARY POST PARTUM HAEMORRHAGE(PPH) AT THE UNIVERSITY OF MAIDUGURI TEACHING HOSPITAL(UMTH): A TEN –YEAR REVIEW

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ABSTRACT

Objective: To determine the incidence, risks and aetiological factors for Primary Post-Partum Haemorrhage (PPH) in UMTH.

Design Retrospective descriptive study.

Setting: University Of Maiduguri Teaching Hospital, Maiduguri, Nigeria.

Methods: The case records of all recorded cases of primary PPH between 1st January 2000 and 31st December 2009 inclusive, who were managed in UMTH were retrieved and relevant data obtained and analyzed.

Results: Three hundred and seventy six women had primary postpartum haemorrhage during the period under review with an incidence of 1.9%. However, only three hundred and two were available for analysis. Close to half of the women who had primary postpartum haemorrhage were grandmultiparous 136(45%). Uterine atony was the commonest cause of primary PPH which was closely followed by retained placenta 37.7% and 22.5% respectively. This is attributed to mismanagement of labour. Majority of the patients were unbooked (63.6%) and about one third of the women had home delivery. The maternal mortality during the period was 96 out of which 4 were due to postpartum haemorrhage. The contribution of primary PPH to maternal mortality was 4.2% during the study period.

Conclusion: Primary PPH is a largely preventable condition. Uterine atony and retained placenta were major causes of the condition in our center. This is a reflection of mismanagement of third stage of labour. Identification of patients at risk during pregnancy and labour with prompt intervention to prevent blood loss is advocated.

INTRODUCTION

Maternal mortality is currently a public Health concern worldwide¹. Many women die prematurely during pregnancy, while trying to continue the human race. Globally over half a million women die as a result of complications of pregnancy and childbirth². Postpartum hemorrhage constitutes a major cause of maternal mortality, particularly in the developing world, and of maternal morbidity in both the developed and the developing world. Postpartum hemorrhage (PPH) is responsible for around 25% of maternal mortality worldwide¹, reaching as high as 60% in some developing countries. PPH can also be a cause of long-term severe morbidity, and approximately 12% of women who survive PPH will have severe anemia³. Thus, severe bleeding is the single most important cause of maternal mortality worldwide. However in a recent study in Maiduguri, it was rated 2nd after eclampsia⁴.

The definition of PPH is somewhat arbitrary and problematic. PPH is defined as blood loss of more than 500ml following vaginal delivery or more than 1000ml following cesarean delivery.⁵ A loss of these amounts within 24 hours of delivery is termed early

or primary PPH, whereas such losses are termed late or secondary PPH if they occur 24 hours after delivery. This study is focused on primary PPH. Blood loss exceeding 1,000 ml is considered physiologically significant and can result in hemodynamic instability.⁶ Estimates of blood loss at delivery are subjective and generally inaccurate due to difficulty with visual estimation⁶.

Major causes of primary PPH include uterine atony, cervical, vaginal, or perineal laceration, retained or adherent placental tissue, clotting disorders, and inverted or ruptured uterus^{7,8}. More than one of these can cause postpartum hemorrhage in any given woman. Uterine atony is the leading cause of immediate PPH (75–90 percent)⁷.

Risk factors for postpartum hemorrhage include a prolonged third stage of labor, multiple delivery, episiotomy, fetal macrosomia, instrumental delivery and history of postpartum hemorrhage^{6,7,9}. However, postpartum hemorrhage also occurs in women with

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no risk factors, so physicians must be prepared to manage this condition at every delivery.⁹

Postpartum haemorrhage is preventable. Active management of the third stage of labor, defined as intramuscular administration of 10 IU of oxytocin, controlled cord traction (CCT) and fundal massage after delivery of the placenta, substantially reduces the risk of PPH.^{9,10} The use of oxytocin has been associated with a decrease in the incidence of PPH by about 60%¹¹. In our Centre, active management of labour is the protocol used in the management of the third stage of labour. The use of oxytocin is however, not always possible in developing countries where deliveries still occur at home with untrained birth attendants¹² Recently, the World Health organization(WHO) recommended the use of misoprostol tablets in settings where the use of injectable uterotonics is not feasible¹⁰. Postpartum haemorrhage remains an important cause of maternal death especially in developing countries where there is ignorance, poverty, lack of basic medical facilities, shortage of man power and delay of patients in seeking medical help in emergency.

The aim of this study is to determine the incidence, risk and etiological factors of PPH in UMTH, Maiduguri.

MATERIALS AND METHODS:

This was a hospital based, retrospective study undertaken during the period of 1st January 2000 to 31st December 2009 inclusive. The case notes of the patients that had Primary PPH were retrieved and analyzed. Cases were identified through labour ward, obstetric theatre, obstetric ward, ICU records. The case notes were retrieved from the central medical records library. Those whose folders could not be traced were excluded from the study. Information obtained include socio-demographic characteristics such as age, parity, booking status; other information obtained were place of delivery, gestational age at delivery, mode of delivery, blood loss at delivery, causative factors, predisposing factors, treatment received, maternal and neonatal outcome. A patient is referred to as Unbooked if she did not receive antenatal care in the course of her pregnancy at the UMTH during the study period. For the purpose of the study, only women whose blood losses were 500ml or more and had vaginal delivery were considered. Women whose blood losses were 1000ml or more and had caesarean deliveries were also considered. Blood losses in our centre are estimated by visual quantification, measurement in

graduated containers and estimating loses in the Gauze packs. The information was collated on a data sheet and then statistical analysis done using SPSS version 16. Frequencies and descriptive statistics were computed.

RESULTS

There were a total of 19,361 deliveries during the study period, out of which 376 had primary PPH giving an incidence of 1.9%. However, only 302 of the cases were available for analysis giving a retrieval rate of 80.3%. Their ages ranged between 15-45 years with a mean age of 28.4%. Primary PPH occurred more in the grandmultiparous women with 136(45%) of the patients with primary PPH being grandmultiparous women. Forty-nine (16.2%) of the patients with primary PPH were primigravidas while the remaining were multiparous 117(38.8%). Most of the patients were unbooked accounting for 63.6% of the cases.

109(36.1%) of the deliveries took place at a Tertiary health centre. This was closely followed by home delivery which occurred in 103(34.1%) of the patients. In 58(19.2%) of the cases, delivery occurred in a primary health facility, while in 28(9.3%) of the cases, delivery occurred in a secondary health facility. Spontaneous vertex delivery occurred in 72.8% of the cases, while 4.6%, 7.4% and 15.2% had assisted breech delivery, instrumental delivery and caesarean delivery respectively.

Table 1: Socio-demographic Characteristics

Characteristic	N	%
Age(years)		
? 20	27	8.9
20-24	49	16.2
25-29	86	28.5
30-34	81	26.8
35-39	50	16.6
=40	9	3.0
Parity		
Primigravida	49	16.2
Multiparous	117	38.8
Grandmulti parous	136	45.0
Booking Status		
Booked	110	36.4
Unbooked	192	63.6
TOTAL	302	100

Table 2: Place and Mode of Delivery

Place Of Delivery	N	%
Home	103	34.1
Primary health facility	58	19.2
Secondary health facility	28	9.3
Tertiary health facility	109	36.1
Others	4	1.3
Mode Of Delivery		
Spontaneous Vertex Delivery(SVD)	220	72.8
Assisted Breech delivery	14	4.6
Instrumental Delivery	22	7.4
Caesarean Delivery	46	15.2
TOTAL	302	100

Uterine atony was found as a causative factor in 114(37.7%) of the cases. This was closely followed by retained placenta which accounted for 68(22.5%) of the cases. Abruptio placentae accounted for 42(14.0%), while lower genital tract laceration occurred in 41(13.6%) of the cases. Uterine rupture and placenta praevia occurred in 17(5.6%) and 17(5.6%) of the cases respectively. Three (1.0%) of the cases had DIC. Foetal macrosomia was identified as a risk factor in 21.2% of the cases, which was closely followed by antepartum haemorrhage in which 18.9% of the cases had APH. However, in 12.6% of the cases, no risk factor could be identified (Table 3). The maternal mortality during the period was 96 out of which 4 were due to primary postpartum haemorrhage, therefore the contribution of primary PPH to maternal mortality was 4.2% during the study period. Blood transfusion was done in 142 (47.0%). Uterotonics were used in 158(52.3%) of the cases. Manual removal of placenta was performed in 42(14.6%) of the cases and lower genital tract repair was done in 32(10.6%) of the patients. Laparotomy (for uterine repair and hysterectomy) was performed in 17(5.6%) of the cases (Table4).

Table 3: Causes and Risk Factors for Primary PPH

CHARACTERISTIC	n	%
Causes		
Uterine Atony	114	37.7
Retained Placenta	68	22.5
Abruptio placentae	42	14.0
Lower genital tract laceration	41	13.6
Uterine rupture	17	5.6
Placenta Praevia	17	5.6
DIC	3	1.0
Risk Factors		
Foetal macrosmia	64	21.2
APH	57	18.9
Prolonged labour	43	14.2
Pre-eclampsia/eclampsia	41	13.6
Previous history of PPH	19	6.3
Multiple gestation	17	5.6
Chorioamnitis	11	3.6
Polyhydraminos	3	1.0
Others		3.0
None	9	12.6
TOTAL	302	100

Table 4: Treatment Received

Treatment	n	%
Uterotonics	158	52.3
Blood transfusion	142	47.0
Manual removal of placenta	44	14.6
Genital tract repair	32	10.6
Laparotomy (for uterine repair and hysterectomy)	17	5.6
Others (bimanual compression, balloontamponading)	8	2.6

DISCUSSIONS

The prevalence of primary PPH in this study was 1.9%. This is comparable to a similar study done in the south western part of Nigeria but is much lower than earlier reported studies^{11,13,14,15}. The low incidence of Post Partum hemorrhage observed maybe due to inability of the attending practitioners to identify cases for early referral, low health seeking behavior among patients and socio-economic factors coupled with the rapid events surrounding labour and post partum hemorrhage leading maternal death before many of the patients ever make it to the hospital. It is therefore not surprising in a hospital setup such as ours that eclampsia and not post partum hemorrhage is the leading cause of maternal death as reported previously^{4,16,17}. Furthermore, as a policy, third stage of labour is actively managed in this center with the use of uterotonic drugs. Active management of labour has been known to prevent PPH in up to 60% of cases. Majority of the cases in this study were unbooked and about a third of the cases had home deliveries. Home deliveries in most cases are conducted by unskilled birth attendants who have no formal education, thereby increasing the maternal and perinatal complications of the parturient¹⁷. These factors contribute significantly to the incidence of PPH because of lack of access to interventions that could prevent or treat PPH. Delivery in a well-staffed and well supplied medical facility prevents delay in recognition of complication, delayed transportation and delay in receiving adequate comprehensive care. Grandmultiparity accounted for a considerable percentage in the study. Grand multiparas are considered to be at higher risk of PPH but some studies suggest that their risk may be no greater than women of lower parity^{13,15}. Foetal macrosomia and antepartum haemorrhage were found to be major predisposing factors to primary PPH in this study. This is similar to findings

from other reports^{13,15}. This emphasizes the need to encourage women to book their pregnancies so that such predisposing factors could be identified antenatally.

Uterine atony was the major cause of primary PPH in this study, which was followed by retained placenta. This finding is similar to findings from other reports, however in one report, retained placenta was found to be the commonest cause of PPH^{11,13,14,15}. These factors (uterine atony and retained placenta) are a reflection of poor management of the third stage of labour, which is not surprising as a good number of deliveries occurred at home and primary health facility where most probably no skilled birth attendant conducted the delivery. Without the presence of a skilled provider to recognize and treat the conditions leading to PPH and to manage PPH if it occurs, a parturient could be at an increased of developing primary PPH with its sequelae. Close to half of the patients required blood transfusion. This underscores the need for preventive measures for the prevention of PPH to be instituted so as to reduce the need for blood transfusion in a developing society such as ours where blood transfusion services are dismal with the attendant risks associated with blood transfusion. Primary PPH was responsible for 4.2% of maternal deaths during the study. The low contribution of primary PPH to maternal mortality could be attributable to the prompt management that is available at this centre where blood transfusion services are readily available and the use of uterotonics are judiciously employed in this centre. Furthermore, facilities to carry out surgical interventions such as hysterectomy are readily available. Though not the highest contributor to maternal mortality in this region, PPH is associated with significant morbidity. PPH is associated with maternal morbidities such as increased risk of blood transfusion with its attendant complications, renal failure due to hypovolaemia and disseminated intravascular coagulopathy, failure of lactation and infertility.

In conclusion, Postpartum hemorrhage remains an important contributor to maternal mortality and mortality. PPH can be prevented by increasing women's access to health facility where identification of high risk patient can be done and prompt preventive and resuscitative measures instituted. Protocols for the use of active management of third stage of labour should be encouraged. Every birth attendant should have

access to needed supplies, equipment and acquire knowledge, skills and critical judgment for early referral and initial resuscitation measures.

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