ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES, SCHOOL OF MEDICINE

DEPARTMENT OF EMERGENCY MEDICENE

MAGNITUDE, ASSOCIATED FACTORS AND MATERNAL OUTCOME OF POSTPARTUM HEMORRHAGE AT BLACK LION SPECIALISED HOSPITAL FROM JAN.1, 2009 TO DEC.30, 2013 G.C

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THIS RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF EMERGENCY MEDICINE, SCHOOL OF HEALTH SCIENCE AND MEDICINE, ADDISABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIRMENTS FOR THE DEGREE OF MASTERS IN EMERGENCY MEDICINE AND CRITICAL CARE.

JUNE, 2014

ADDIS ABABA, ETHIOPIA

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List of Abbreviations

AA- Addis Ababa

AAU- Addis Ababa University

AMTSL-Active management of third stage labor

ARDS-Adult respiratory distress syndrome

ARF-Acute renal failure

BMI-Body mass index

C/S-Cesarean section

E.C-Ethiopian calendar

G.C-Gregorian calendar

Hct-Hematocrit

LBW-Low birth weight

MM-Maternal mortality

PPH-Postpartum hemorrhage

WHO-World Health Organization

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TITLE

Magnitude, Associated factor and maternal outcome of Postpartum hemorrhage at Black Lion Hospital from Jan.1, 2009 toDec.30, 2014 G.C.

ABSTRACT

Back Ground: Postpartum hemorrhage (PPH) continues to be the leading direct cause of maternal mortality worldwide.

Objective: To determine maternal and perinatal outcomes in mothers who had postpartum hemorrhage.

Methods: A facility based retrospective cross-sectional study was conducted on all women who came to Black Lion Hospital, with a diagnosis of PPH during the five years, from Jan.1, 2009 to Dec.30, 2013 GC. Data were collected using a structured questionnaire from the mothers and their neonate's charts and labor ward reporting log book .Data were collected by the principal investigator and trained labor ward nurses.

Results: There were 12,995 deliveries at TASH during the five year. Generally there were 185 cases of PPH who delivered in Black Lion Hospital as well referred from other health facilities which makes the magnitude of 1.4% during the five year. However, 160 cases of PPH whose medical charts were retrieved were used for its completeness.

The maternal age of the study population was ranging between 17 and 44 years with mean age of 28.56 years. Most of the post partum women who had PPH, 105(65.6%) were from AA and the remaining were out of AA.

Conclusion

The magnitude of PPH was 1.4% during the study period and it was associated with significant maternal and perinatal complications. Retained placenta or conceptus material was the most leading cause for PPH in this study which accounts for 37.5%. Shock and severe anemia were the most common complications they were encounters.

IV.

1. INTRODUCTION

1.1 BACK GROUND

Postpartum hemorrhage (PPH) continues to be the leading single direct cause of maternal mortality worldwide. It refers to >500ml blood loss within 24 hr following vaginal delivery or/and >1,000ml following cesarean delivery. It is also defined as blood loss sufficient to cause hypovolemia, a 10% drop in the hematocrit or requiring transfusion of blood products regardless of the route of delivery.(1).

Currently, in developed countries, pulmonary embolism is the leading cause of the maternal mortality, however in developing countries PPH continuous to be the leading cause, accounting for 25-43% of maternal deaths. Postpartum hemorrhage is a frequent complication of deliveries and its incidence is commonly reported as 2-4%, after vaginal deliveries and 6% after cesarean-sections (C/S); with uterine atony being the cause in about 50% of the cases.(2).

In Sub-Saharan Africa the probability of dying during child birth is 175 times more than that of developed country. In China, PPH is the most common serious obstetric complication and the leading cause of maternal mortality, accounting for 49.9% of maternal death (1).

Despite global efforts to ensure that women deliver with skilled birth attendants and have access to conventional uterotonics for PPH prevention, 60% births in low resource countries occur outside health facilities without a skilled attendant. In Pakistan, 65% of births occur at home and 27% of maternal deaths are attributed to PPH. (3, 4).

The leading cause of PPH is uterine atony-(failure of the uterus to contract adequately after child birth) accounting for 60-80% of cases, followed by retained placenta and injury to genital tract. Despite the global significance of PPH, little is known about factors that contribute to PPH, especially in less developed areas where 99% maternal death occur. PPH may develop in patients with no risk factors; however reported risk factors include fetal macrosomy, polyhydramnios, uterine myoma ,abnormal placentation ,grand multi parity ,uterine infection, previous PPH, ante partum hemorrhage, maternal obesity, operative deliveries(forceps and vacuum assisted

deliveries) ,anemia, induced labor, augmented labor, episiotomy, pre-eclamsia and premature birth.(5,6).

Further in addition to the devastating impact of maternal mortality due to PPH, millions of women survive from PPH and continue to suffer from its debilitating consequences, including chronic illness, disability, increased risk of death and/or poor growth and development of their children. It can result in complications like hepatic dysfunction, adult respiratory distress syndrome and renal failure. (7).

Majority of maternal deaths due to PPH can be avoided and the key is early diagnosis and proper treatment. However, PPH is one of the most challenging complications faced by clinicians. (7).

Postpartum hemorrhage is most preventable and treatable through active management of the third stage of labor (AMTSL) by conventional uterotonics, among which oxytocin is preferred. However, use of oxytocin is not feasible in many low income settings where most births take place at home with untrained birth attendants. Immediate resuscitation with attempts to treat the cause forms the cornerstone of management of PPH. (8).

This study was done to identify the causes of PPH and to assess the extent of the morbidity as well as the mortality which associated with it.

1.2 STATEMENT OF THE PROPLEM

In low-income countries, postpartum hemorrhage is a major cause of maternal death and arguably the most preventable. Management strategies in developed countries involve crystalloid fluid replacement, blood transfusions, and surgery. These definitive therapies are often not accessible in developing countries. Long transports from home or primary health care facilities, lack of skilled providers, and lack of intravenous fluids and/or a safe blood supply often create long delays in instituting appropriate treatment.

The lack of skilled attendants at delivery who can provide even the minimum of care, long transport times to facilities that can manage uterine atony or severe lacerations of the genital tract and unattended obstructed labor leading to a ruptured uterus conspire to elevate PPH to its position as the number one killer of women during child birth.

These structural factors are exacerbated by the prevalence of anemia, which is estimated to affect half of all pregnant women in the world, with that figure rising to 94% in Papua New Guinea, 88% in India, and 86% in Tanzania. Anemia is rarely detected or treated during pregnancy and often exacerbated by malarial and other parasitic diseases. Severe anemia may weaken uterine muscular strength or lower resistance to infectious disease, contributing to PPH and subsequent maternal mortality. (9).

Although the vast majority of cases of PPH have no identifiable risk factor, young age at marriage and low contraceptive use among many women in the developing world result in high total fertility rates, which results in more grand multiparous giving birth in low-resource countries compared with more developed countries.

Maternal mortality in resource-poor nation attributed to the three delays like delay in deciding to seek care, delay in reaching care in time, and delay in receiving adequate treatment. Most births occur at home with unskilled attendant, and it takes skill to predict or prevent bad outcomes and medical knowledge to diagnose and immediately act on complications. By the time the lay midwife or family realizes there is a problem, it is too late. Many villages do not have access to

paved roads and many families do not have access to vehicles, so women with life-threatening conditions do not make it to the facility in time.

In developing countries, health system face constraints that hinder the delivery of emergency care, which is vital for saving the lives of women who develop PPH. Guidance to aid clinical practice is not commonly available in developing countries. Socio-economic status and illiteracy also may contribute for the prevalence of PPH.

Despite the severe burden of PPH, few studies have examined risk factors, incidence, management and outcome predicting PPH in Ethiopia. The primary objective of this study was to investigate the ability to predict PPH by early screening of women with selected risk factors and the extent of morbidity and mortality with PPH.

2. SIGNIFICANCE OF THE STUDY

Identification of risk factors will help the prevention and control program and also will have a paramount implication in identifying target group. The rational of this study is to provide evidence about existing constraints with PPH to policy makers and other stake holders for further improvement of service provision in future. This study also planned to identify factors which predispose to PPH and will come up with possible recommendation, and the result of this study can also help as base line data or source of information for further study.

3. LITERATURE REVIEW

Healthy mothers are the focus of United Nations' Fifth Millennium Development Goal, with the aim of lowering maternal mortality ratios by 75% between 1990 and 2015. (10).

Despite reduction in maternal death amongst transitional and developed countries, maternal mortality (MM) remains a significant cause of death for women of reproductive age in developing world. This fact is exemplified by statistics collected by the WHO, which show that 99% of the world's half-million annual maternal deaths occur in developing countries. Life time risk of maternal death is as high as one in six for women living in the world's poorest nations, a figure in sharp contrast to a risk of one in 30,000 for women in Northern Europe. (11,12).

Direct causes account for the great majority of maternal deaths in developing world. A systematic review conducted by the WHO found that PPH is the leading cause of MM in Africa and Asia, accounting for up to half of the total number of deaths in these regions. Overall, PPH accounts for an estimated 25% of MM worldwide. (13).

The research recently conducted in Japan, 2013, 800ml or more was diagnostic criteria for abnormal bleeding after vaginal delivery. The prevalence of PPH, (blood loss over 1000ml after vaginal delivery), in Japan was 2-5%.As the result of this research, risk factors identified during pregnancy were; macrosomia, recurrence of PPH, multiple gestation, grand multiparous, maternal age over 35 year, low-lying placenta, polyhydramnios, ante partum hemorrhage, obesity (BMI is 25 and over), severe anemia, uterine myoma and history of cesarean-section, PIH (pregnancy induced hypertension) and post term delivery. Prolonged first and second stage labor, chorioaminitis, induction of labor, assisted delivery, retained placenta, anomaly of rotation, and vaginal laceration were risk factors identified during delivery.PPH is no longer unusual in Japan. It appears that some PPH cases are preventable by risk screening and preventive interventions. (14).

Research conducted by International postpartum hemorrhage Collaborative group, Nov 2009, noted an increasing trend in incidence of PPH over time, in Australia, Canada, the UK and the USA. The observed increase in PPH in Australia, Canada and the USA was limited solely to immediate/atonics PPH. Increasing rates of severe adverse outcome due to hemorrhage in Australia ,Canada, the UK and USA. (15).

Postpartum hemorrhage, defined as blood loss>=500ml, occurs in approximately 6% of deliveries globally and severe PPH (>=1000ml) in an additional 1.8%, with wide variation across regions of the world. (16).

A several studies have attempted to estimate the global burden of PPH. Abouzhar estimated severe PPH (blood loss >=1000ml) to have a global prevalence of 10.5% amongst women who had a live birth in the year 2000. The prevalence of PPH >=500ml ranged from 2.55% in Asia, to 10.45% in Africa. (10).

Towards 2015's Goal, Sub-Saharan Africa: Postpartum hemorrhage in Sub-Saharan Africa still on the rise. Every day about 800 women died due to birth complications in 2010: of the 800 maternal deaths worldwide, 440 occurred in Sub-Saharan Africa with PPH being the main cause. According to it, common causes of PPH are related to failure of the health care system, inaccurate estimation of blood loss after delivery and lack of skills to prevent and manage PPH. Basic emergency obstetric care and arrangements for timely referral to hospital with facilities must be practiced everywhere. (13,16).

In Guinea-Bissau, West Africa, 31% of pregnant women are anemic, and the maternal mortality is more than 8 per 1000 live births, postpartum hemorrhage being the most common cause of death. (14).

According to research done by Dr Muluken Gashaw, Maternal and Perinatal Out comes in pregnancies complicated with placenta Previa in two teaching hospitals in AA, Black Lion and Gandhi Memorial Hospital AAU, 2013; found 19.9% of cases had PPH, 23.2% of cases were transfused with 1 to 6 units of blood. Also 1.1% cases of ARF (acute renal failure) and HCT (hematocrit) level at the discharge was less than 30% in 50.8% of cases. (17).

A retrospective review of hospital maternal deaths at Jimma hospital, South western Ethiopia, covering the period from September 1990 to May 1999 shows the overall maternal mortality 2600 per100,000 live births, with an overall trend showing no decrease. Ruptured uterus (33.2%) was the major cause of death with unsafe abortion responsible for 26.8% of cases where as PPH accounts 21.7%, where others complication like sepsis and hypertensive disorders were responsible for the remaining of all maternal deaths. (18).

4. OBJECTIVES

- 4.1 General Objectives:

  - To determine maternal and perinatal outcomes in mothers who had postpartum hemorrhage.

- 4.2 Specific Objectives:

  - To determine the magnitude of PPH.
  - To identify factors associated with postpartum hemorrhage.
  - To assess the type of preventive and therapeutic measures taken for PPH.
  - To assess the maternal outcome of post partum hemorrhage.
  - To assess the perinatal outcomes of new born babies of mothers who had PPH.

5. METHODOLOGY

5.1 Study setting and period

The study was conducted at Black Lion Hospital, the governmental referral and tertiary hospital of Ethiopia, which is found at the center of capital city Addis Ababa, where treatment and palliative care given and as well a teaching hospital under Addis Ababa University. It has an average monthly delivery of 200-300.The study was conducted from December 2013 to June 2014 G.C. Data was collected using a structured questionnaire from the mothers and their neonate's charts and labor ward reporting log book.

5.2 Study design

A facility based retrospective cross-sectional study design was used.

5.3 Reference population

All child bearing women's around Addis Ababa

5.4 Source population

All obstetric patients who visited Black Lion delivery room during the period of Jan.1, 2009 to Dec.30, 2013 G.C

5.5 Study population

All obstetric patients who have had PPH during the period of Jan, 1, 2009 to Dec, 30, 2013 G.C

5.6 Sample size

All mothers with PPH in the study area during a period of five consecutive years (2009 to 2013 GC) were included in the study regardless of the number.

5.7 Sampling procedure

All mothers with PPH in the years 2009 to2013 GC were consecutively included in the study.

5.8 Study Variables

- **5.8.1 Independent variable**

- Maternal age
- Parity
- Mode of delivery
- Gestational age
- Multiple pregnancy
- Birth weight
- Onset of labor
- Previous history of PPH

- **5.8.2 Dependent variable**

-Postpartum hemorrhage

-Cause of PPH

- Blood transfusion

- Maternal death

- Perinatal complication

-still birth

-birth weight (low birth weight (LBW) <2.5kg& macrosomia >4kg)

5.9 Operational definition

Postpartum hemorrhage- bleeding per vagina in excess of 500ml after delivery of the baby or >1000ml of blood loss with cesarean section.

Adequate fluid resuscitation- who receives bolus of fluid within the first 30 minutes of identified bleeding.

5.10 Data collection Procedure

Data were collected using a structured questionnaire from the mothers and their neonate's charts and labor ward reporting log book .Data were collected by the principal investigator and trained labor ward nurses.

5.11 Data Quality Assurance

The principal investigator was supervising the data collection process. Training was given to the data collectors. Completeness of data collected was checked every day by the principal investigator. The questionnaire was pretested using cases of PPH which was managed in the first three months of 2006 E.C. Based on the pretest, questionnaire was revised and edited.

5.12 Data Management and Analysis

The collected data was coded, cleaned and analyzed using SPSS version 20 statistical soft ware. Errors related to inconsistency of data was checked and corrected during data cleaning. Descriptive statistics such as proportions, percentages, ratios, frequency distributions and appropriate graphic presentation besides measures of central tendency were used for describing the data. Other statistical analysis was used as necessary based on the objective of the study.

6. Ethical consideration and Dissemination

Ethical clearance was obtained from the Ethical Clearance Committee of Addis Ababa University, department of Emergency medicine. Permission was also obtained from the hospital's medical director and department of gynecology and obstetrics through formal letter obtained from department of Emergency medicine to use the charts of the mothers and their neonates. The result of the research was presented to the department of Emergency medicine. As well as depending on the strength of the study findings, the outcome of the study were disseminated to concerned body such as service provider, policy maker and community member.

Results

There were 12,995 deliveries at TASH during the five year. Generally there were 185 cases of PPH who delivered in Black Lion Hospital as well referred from other health care facilities from the log book which makes the magnitude of 1.4% during the five year. However, 160 cases of PPH whose medical charts were retrieved were used for its completeness.

The maternal age of the study population was ranging between 17 and 44 years with mean age of 28.56 years. Most of the post partum women who had PPH, 105(65.6%) were from AA and the remaining were out of AA. (Table 1)

Table1: Demographic characteristics of mothers with PPH at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, 2009-2013 GC.

Socio demographic characteristics	**Frequency (%)**
Age in years	
15-19	7(4.8%)
20-24	39(24.4%)
25-29	45(28.1%)
30-34	35(21.9%)
35+	34(21.3%)
Address	
A.A	105(65.6%)
Out of A.A	55(34.4%)

Primiparae accounted for 31(19.4%) and129 (80.6%) of multiparous. Gestational age based on LNMP was unknown in 36(22.5%). Among postpartum women mothers with PPH 109(68.1%) had ANC follow up where as 51(31.9%) of them didn't have ANC follow up. (Figure1.)

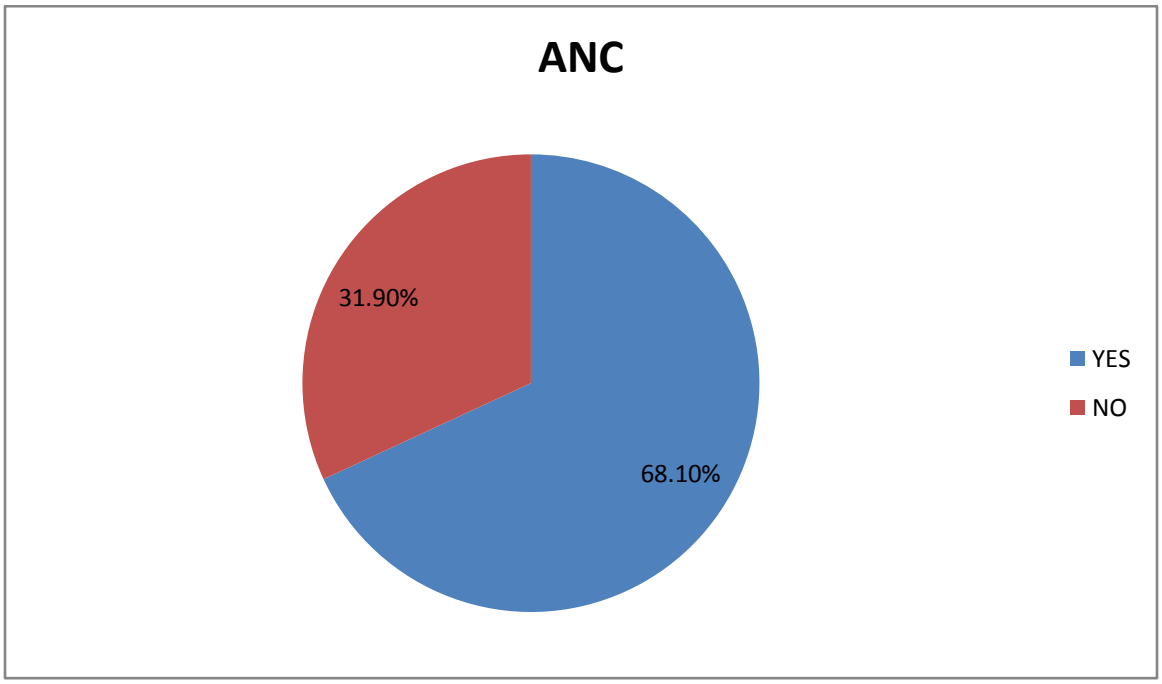

Figure.1 ANC status of mothers with PPH at Tikur Anbessa Specialized hospital, Addis Ababa, Ethiopia, 2009-2013 G.C.

Among post partum women with PPH 31(19.4%) of them were pregnant for the first time, 89(55.6%) of them had 2 to 4 birth experience and only 27(16.9%) of them had 5 or more birth experience. Gestational age based on LNMP was unknown in 36(22.5%), less than 37 weeks completed in 32(20%), 37-42 weeks in 73(45.6%) and >= 42 weeks was 19(11.9%).

Forty four (27.5%) women with PPH had history of abortion out of which 27(61.4%) one times followed by 15(34.1%) two times and three and four times in 2.3%. Also12 (7.5%) had history of previous C/S, out of which 8(66.7%) had one times and the last 4(33.3) had experience of two times.

History of previous PPH was reported by 7(4.4%), and there were 15(9.4%) previous still birth and also 30(18.8%) had encountered previous uterine curettage. (Table 2)

Table2: Maternal characteristics of mothers with PPH at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, 2009-2013 G.C.

Maternal characteristics		Frequency (%)
	I	19.4
Gravidity	II-IV	57.5
	>=V	23.1
Parity	I	27.5
	II-IV	55.6
	>=V	16.9
History of abortion	Yes	27.5
	No	72.5
History of previous C/S	Yes	7.5
	No	92.5
History of previous PPH	Yes	4.4
	No	95.6
Previous still birth	Yes	9.4
	No	90.6
Previous uterine curettage	Yes	18.8
	No	81.2

Regarding the ante partum obstetric event among women with PPH; abruption placenta accounts for 9(5.6%) and placenta Previa took for 14(8.8%). Twenty five women with PPH (15.6%) were complicated with current ante partum hemorrhage. Few of them also encounter polyhydramnios 11(6.8%).

Hematocrit level was also determined in all post partum women with PPH at presentation and hematocrit level was <30% in 48(30%).

Their delivery characteristics were singleton 142(88.8%), twins 15(9.4%) and 3(1.9%) were higher order.

Intrapartum obstetric event

Among women encounter PPH, there were 25(15.6%) obstructed labor, were also 29(18.1%) complicated with prolonged labor.

Uterine rupture were signified for 14(8.8%) were uterine atony 36(22.5%).Few of them were also develops genital tract trauma like vaginal wall laceration, Perineal tear and cervical tear 15(9.4%), 4(2.5%) and 5(3.1%) respectively.

Mode of delivery

The trends in mode of delivery was 107(66.9%) vaginal and 53(33.1%) C/S. Out of the vaginal delivery SVD 72(67.3%), SVD with episiotomy 20(18.7%), forceps and vacuum assisted delivery 11(10.3%), assisted breech delivery 3(2.8%), and only 1(0.93%) was destructive deliveries.

Among 160 PPH cases labor was spontaneous in156 (97.5%) and induced in only 4(2.25%). Among the spontaneous labor only 2(1.3%) were augmented.

The third stage was prolonged in 60(37.5%) and evacuation &curettage was the most removal method in 52(86.7%).

Episiotomy was performed 35(21.8%) and episiotomy extension occurred in 12(34.3%).

Regarding the management of third stage labor only 131(81.8%) has got active management of third stage labor. Out of 81.8% who received AMTSL, 131(100%), 110(83.9%), 104(79.4%) receives components of AMTSL namely uterotonics, cord traction and uterine massage respectively.

In most of the cases 146(91.3%) have got adequate fluid resuscitation in the first 30 minutes of identified bleeding.

From those mothers with PPH 76(47.5%) transfused with one to seven unit of blood; one unit 9(11.8%), two unit 40(52.7%), three unit11 (14.5%), four unit 11 (14.5%), six unit 4 (5.3%) and seven unit 1(1.3%) of whole blood and additionally 24(31.5%) were transfused with fresh frozen plasma.

Maternal complications

Although no maternal death was reported in this study, 97(60.6%) had shock (hypotension), 20(12.5%) ARDS, 11(6.8%) cardiac arrest, 8(5%) ARF, 79(49.3%) severe anemia, 13(8.1%) coma, 3(1.9%) organ system failure and others 32(20%) like puerperal sepsis secondary to endomyometritis, bizarre behavior, bladder rupture, vesico vaginal fistula, ureteric ligature, hysterectomy secondary to uterine rupture, hypoxic brain injury ,DIC and HELLP syndrome. Five (3.1%) was discharged against medical advice from ICU with complicated medical prognosis.(Figure.2)

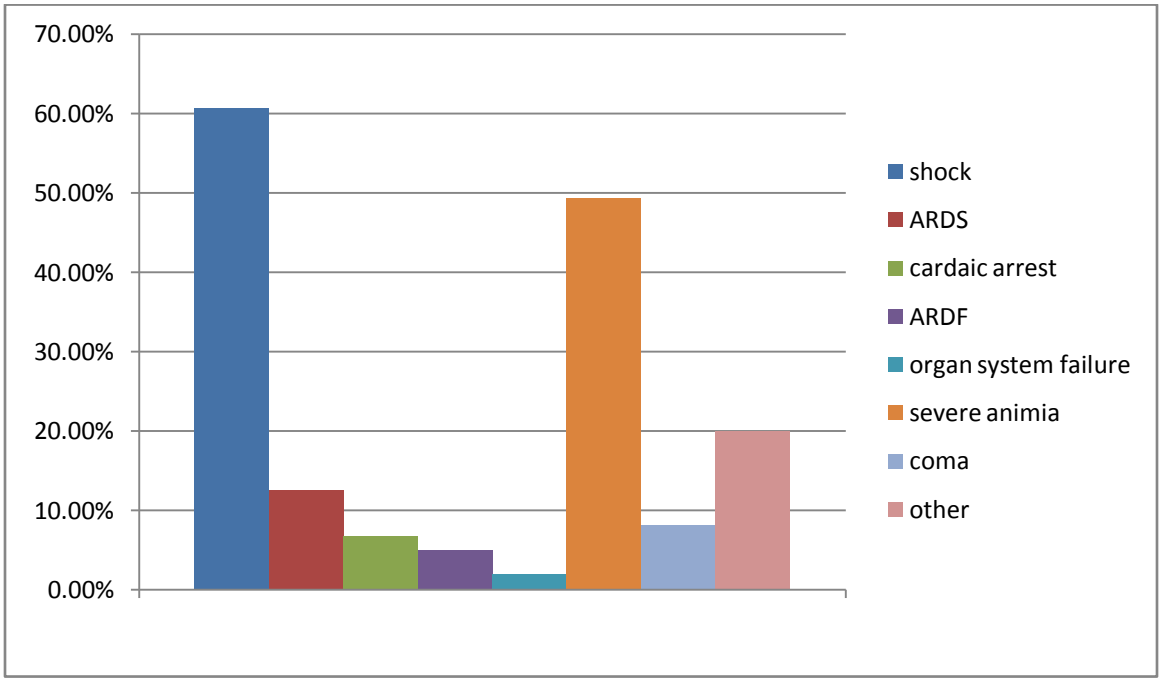

Figure 2: Maternal complications in post partum women with PPH at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, 2009-2013 G.C.

Perinatal complications

Regarding the perinatal complication associated with PPH, there were 46(25.4%) still births and 32(20%) prematurely delivered before 37 completed weeks and 46(25.4%) of the new born had birth weight less than 2.5kg and macrocosmic groups accounted for19(10.5%), in 45(24.9%) their birth weight was unreported(unknown).(Table 3)

Table3: perinatal complications of PPH at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, 2009-2013 G.C.

Perinatal complications	Frequency (%)
Gestational Age(weeks)	
<37	20
37-42	45.6
>=42	11.9
Unknown	22.5
Birth weight(grams)	
<2500	25.4
2500-3999	39.2
>=4000	10.5
Unknown	24.9
Status at birth	
Live	74.6
Still birth	25.4

Discussion

The magnitude of PPH was 1.4% during the five year which was comparable as research recently conducted in Japan, Asia, 2013 which was 2-5%; but global prevalence of severe PPH 10.5% amongst women who had a live birth in year 2000, it also estimated by Abouzhar 10.45% in Africa. This could be due to hospital based study as well poor documentation practice in our case.

Retained placenta was the most leading cause for PPH in this study which accounts for 37.5%, however as research conducted by International Post Partum Hemorrhage Collaborative Group, Nov,2009, noted an increasing trend in incidence of PPH over time in Australia, Canada, the UK and USA which was limited solely to atonics PPH. This may attribute to lack of skilled attendants at delivery, most births occur at home with unskilled attendant, and it takes skill to predict or prevent bad out comes and medical knowledge to diagnosis and immediately act on complications.

Hematocrit level was <30% in 48(30%) of the cases at presentation which is comparable as in Guinea –Bissau, West Africa, 31% of pregnant women were anemic .There were also severe anemia in 49.3% at discharge which also comparable with research done by Dr Muluken Gashaw, AAU, 2013 at Black Lion Hospital and Gandhi Memorial Hospital; Hct level less than 30% at discharge in 50.8% of cases.

In addition in this study 76(47.5%) of cases transfused with 1 to 7 units of blood transfusion to correct the severe anemia that they had before they were discharged from the hospitals but still 79(49.3%) cases were discharged with a Hct level of <30%.This could be due to lower rate of blood transfusion and also due to high prevalence of anemia which was rarely detected or treated during pregnancy and often exacerbated by malarial and other parasitic diseases. It also due to poor ANC follow up were 32% didn't have ANC follow up which was difficult to correct anemia from beginning during the pregnancy which exacerbate the severity.

Even though no maternal death was reported 5(3.1%) was discharged against medical advice from ICU with complicated medical prognosis like hypoxic brain injury, multiple organ failure etc. However, a retrospective review of hospital maternal deaths at Jimma hospital, South western Ethiopia, covering the period from September 1990 to May 1999 shows the overall

maternal mortality 2600 per100,000 live births, PPH was the third cause of maternal death accounts for 21.7%, preceded by ruptured uterus and unsafe abortion.

Conclusion

The magnitude of PPH was 1.4% during the five year and it was associated with significant maternal and perinatal complications. Retained placenta or conceptus material was the most leading cause for PPH in this study which accounts for 37.5%. Shock and severe anemia were the most common complications they were encounters.

Recommendations

- Emphasis should be given in the care of mothers and the new borne in actively detecting and managing life threatens emergency conditions.
- Record keeping and documentation as well completeness should be emphasized in our practice.
- Further prospective study should be done in order to alleviate all the limitations that this study encounters.

Limitations of the study

1. Retrospective study, the study has suffered the biases inherent to such study designs.

2. Absence of similar local study with the same objective makes comparisons difficult.

3. Poor and incomplete documentation in some of the charts used and also poor quality of referral paper.

4. Since the study was a hospital based study the results of the study may not show the true picture of the problem in the community.

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8. Annex

8.1 QUESTIONNAIRE

Addis Ababa University College of Health Science, Department Of Emergency Medicine, Questionnaire format for evaluation of maternal and perinatal outcomes of pregnancies complicated with post partum hemorrhage.

Case code number------

Card number---------

I, Socio-demographic Characteristics

1. Age
   a. <20 b, 20-24 c, 25-29 d, 30-34 e,>=35
2. Address
   2.1 Addis Ababa
   2.2 Out of Addis Ababa
3. Marital status
   a. single b, married c, divorced d, widowed e. others
4. Educational status
   a. illiterate b. completed first cycle (1-4) c. completed second cycle (5-8)
   d. completed 9-12 e. attained tertiary education

5. Occupation

   a. government employee b. self employed c. House wife d. merchant e. others (specify)

6. Monthly income estimated in birr

   a. <1000 b. 1001-2000 c. 2001-3000 d. 3000+

II, Obstetric History

1. Gravidity-------
2. Parity

a, 1 b, 2-4 c, >=5

3. Gestational age (weeks)
   a. <37 b. 37-42 c. >=42 d. unknown
4. ANC (antenatal care)
   a. yes b, no
5. History of abortion
   a. yes b. no
6. If yes, how many times------
7. History of previous C/S
   a. yes b. no
8. If yes , how many times------
9. History of previous PPH
   a. yes b, no
10. Previous still birth
    a. yes b. no
11. Previous uterine curettage
    a. yes b. no

III. Ante partum Obstetric event

1. Abruption placenta
   a. yes b. no
2. Placenta Previa
   a. yes b. no
3. Current ante partum hemorrhage
   a. yes b. no
4. Polyhydramnios
   a. yes b. no
5. Delivery characteristics
   a. Singleton b. twins c. higher order
6. Hematocrit/Hemoglobin at admission

IV. Intrapartum Obstetric event

1. Obstructed labor
   a. Yes b. no
2. Prolonged labor
   a. Yes b. no

3. Mode of delivery
   a. Vaginal b. C/S

4. If vaginal, is it
   a. Spontaneous vertex delivery (SVD) c. forceps/vacuum with episiotomy
   b. SVD with episiotomy d. breech e. destructive

5. Was the labor.
   a. Spontaneous b. induced

6. If spontaneous, is labor augmented
   a. Yes b. no

7. Is 3rd stage prolonged
   a. Yes b. no
8. If yes, placenta removed
   a. Spontaneously b. evacuation and curettage
9. Episiotomy
   a. Yes b. no
10. If yes, is there episiotomy extension
    a. Yes b. no
11. Genital tract trauma other than episiotomy
    a. Vaginal wall laceration c. cervical tear
    b. Perineal tear d. absent
12. Uterine rupture
    a. Yes b. no
13. Uterine atony
    a. Yes b. no

14. Active management of the third stage of labor (AMTSL)

a. yes b. no

15. If yes, components of AMTSL

17.1 Use of uterotonics in 3rd stage

a. yes b. no

17.2 Cord traction

a. yes b. no

17.3 Uterine massage

a. yes b. no

16. Adequate fluid resuscitation administered the first 30minutes of identified bleeding

a. yes b. no

17. Need for blood transfusion

a. yes b. no

18. If yes, units of blood transfusion-------

v. Postpartum Obstetric event

19. Maternal complication secondary to bleeding

a. Shock (hypotension)
b. Adult Respiratory Distress Syndrome (ARDS)
c. Cardiac arrest
d. Acute Renal Failure (ARF)
e. Severe anemia
f. Coma
g. Organ system failure
h. Others, specify
i. No complications

20. Maternal death

a. yes b. no

Vi. Perinatal characteristics

1. Fetal weights (g)

a. <2500 b. 2500-3999 c. >=4000 d. Unknown

2. Status at birth

a. Live b. Still birth

8.2 Assurance Form

I, the undersigned, assert that this MSC. Thesis is my original work, has not been presented for a degree in any other university and that all sources of materials used for the thesis have been accordingly acknowledged.

MSC candidate: Kebebush Abera

Signature----------Date----------

Advisors:

Sisay Teklu (MD, Assistance professor of Obstetrics& Gynecology)

Signature----------Date----------

Heriya Hussein (EM&CC)

Signature----------Date----------