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**SAINT PAUL'S HOSPITAL MILLENNIUM MEDICAL
COLLEGE**

**ASSESSMENT OF PREVALENCE AND TREATMENT
OUTCOME OF ANTEPARTUM HEMORRHAGE IN SAINT
PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE
FROM SEPTEMBER1, 2008 - AUGUST 30, 2008E.C**

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I. Acronyms and Abbreviation

1. APH.....Antepartum hemorrhage
2. WHO.....World health organization
3. ANC.....Ante Natal care
4. PNM...Perinatal mortality
5. MMR...Maternal mortality rate
6. LSCS....Lower segment cesarean section
7. HGB...Hemoglobin
8. HCT...Hematocrit
9. E.C....Ethiopia calendar
10. HMIS... Health management information system

II. Lists If Tables

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IV. Abstract

Back ground: Antepartum hemorrhage complicates three to five percent of pregnancies contributing to perinatal and maternal morbidity and mortality. Timely access to quality obstetric services is the major determinant of both maternal and newborn outcomes after antepartum hemorrhage. In Ethiopia, the magnitude and consequences of antepartum hemorrhage was not well studied. Hence this study focused on assessing the overall prevalence and treatment outcome of Antepartum hemorrhage patients over a period of one year (2008E.C) at Saint Paul's Hospital Millennium Medical College in Addis Ababa, Ethiopia.

Objective: To determine the prevalence and treatment outcome of Antepartum hemorrhage in Saint Paul's Hospital Millennium Medical College.

Method: A hospital based retrospective cross-sectional study was conducted at Saint Paul's Hospital Millennium Medical College. The study focused on chart reviews of all the APH cases admitted to the hospital from September1, 2008-August30, 2008E.C. Socio demographic data and possible treatment outcome of patients were collected from patients' medical records retrospectively and the data entered into a computer using SPSS software version 20.0 and then means, percentages and were calculated and cross tab analysis was done and finally, the results were assessed and presented by use of charts, tables and texts.

Results: Between September and August, 2008 Ethiopian calendar, 10135 women gave birth in SPHMMC and hospital's Health Management Information System (HMIS) of SPHMMC reported 207 APH cases were reported, from these only 193 cases were found at medical record room and APH cases, giving that the actual prevalence of antepartum hemorrhage 2%. The major causes of antepartum hemorrhage were abruptio placentae and placenta previa occurring in 101(52.3%) and 86(44.6%) of cases of included in this study, respectively. Of the 196 babies born; 4(2%) were stillborn and additional 9 (4.6%) newborns died during the first seven days of life making perinatal mortality rate of 6.63%.

Conclusion and Recommendation: Abrutio placenta and placenta previa were most common cause of APH and improvement in treatment outcome of APH in SPHMMC but still

effort to improve geographical access, effective referral service and quality of comprehensive emergency obstetric care and NICU is needed.

Key words: Antepartum hemorrhage, retrospective study, prevalence, treatment outcome.

1. Introduction

1.1. Back ground

Adverse pregnancy outcomes including maternal and perinatal morbidity and mortality constitute major public health problems in the developing world. The risk of dying from maternal causes is 100 times higher for women in developing countries compared to those in developed countries. Developing countries contribute to 99% of the world's maternal deaths. [1, 2]

In 2013 G.C, sixty percent of Sub-Saharan African countries had a Maternal Mortality Ratio (MMR) of above 400 maternal deaths per 100,000 live births ^[1]. Ethiopia has one of the world's highest MMRs at 676 maternal deaths per 100,000 live births in 2011, showing no reduction from its 2005 level of 673 maternal deaths per 100,000 live births. ^[2]

Despite reductions observed during the last decade, perinatal mortality also remained high compared to other developing and developed countries. ^[2] For the period 2006 to 2011, the average perinatal mortality rate in Ethiopia was 46 perinatal deaths per 1,000 pregnancies of seven or more months of gestation. ^[2, 7] Antepartum hemorrhage remains one of the major causes of maternal deaths and one of the primary obstetric causes of perinatal mortality. ^[1, 3, 7] Antepartum hemorrhage (APH), bleeding from the genital tract of a pregnant mother with a viable fetus before the onset of labor, complicates 3.5% of pregnancies and it constitutes one of the reasons for emergency hospital visits among pregnant women. ^[3]

1.2. Statement of problem

Ante partum hemorrhage is one of the most causes of maternal and perinatal morbidity and mortality worldwide. ^[1] The prevalence and treatment outcome of mother with APH in developing country is not well studied especially in sub-Saharan region. Also in our country (Ethiopia) there is no comprehensive information or research were done on APH. Despite of different program and training under go, the morbidity and mortality due to APH is still high. ^[2] So the aim of this study is to determine the prevalence and treatment outcome of APH among mothers admitted to maternity ward and directly to labor ward in our hospital (SPHMMC) during a year of 208 as E.C.

1.3. Justification of study

This study is designed to determine the prevalence and treatment outcome of mother with APH among mother admitted to maternity ward in SPHMMC since there is no comprehensive study that has been undertaken in this hospital, so after the completion this study will serve as basis for other study and to develop interventional program.

2. Literature review

Antepartum hemorrhage is a serious condition which accounts for a high percentage of maternal and neonatal morbidity and mortality. ^[1] It is defined as hemorrhage from the birth canal after the 28th week of gestation at any time until the second stage of labor is complete and has a reported incidence of 3.5% which varies with socio-demographic variables. ^[3, 4, 7] The four main causes of APH include placenta previa, placental abruption, uterine rupture and unknown etiology. ^[8] While a few studies have been conducted on these separate conditions, very few have measured the prevalence and treatment outcome of APH as a whole. ^[3, 5, 7]

Abruptio placentae and placenta previa are the major causes of APH; even though, a number of obstetric and non-obstetric situations are identified as risk factors for APH; it still remains a predominantly unpredictable condition. ^[3, 4, 5] Access to quality basic and emergency obstetric care services remains the major plausible explanation for disparities in the risk of maternal and perinatal mortality and morbidity from APH in different parts of the world. ^[3, 6]

Once it occurs, hemorrhage is likely to be fatal to the mother or her baby in situations where actions cannot be taken immediately to stop further bleeding, replace excessive blood loss, and prevent fetal complications. ^[3, 4, 6] Evidence shows that variability in the burden of APH is primarily a result of variations in outcomes instead of variations in prevalence, suggesting the vital role that improved obstetric care can play in addressing the issue. ^[4, 7]

Studies from Africa have shown comparable prevalence of causes of APH compared to those from Europe and the United States; however, maternal and newborn outcomes of APH varied vastly between developing and developed countries. ^[7]

Study done in India showed Multiparity is the major risk factor for APH. ^[4, 5] In this study, Placenta praevia was the commonest type of antepartum haemorrhage, abruptio placentae being the second major type. In spite of tertiary care, there was 1 maternal death out of 57 cases included in the study and high perinatal mortality. This study indicates that uncorrected anaemia is still common in India contributing to increased maternal mortality and also necessitating high requirement of blood transfusion. ^[4, 5]

Multiparity previous LSCS were the major etiological factors contributing to antepartum hemorrhage. According to this study reducing the family size to 1-2 child norm, reducing the primary LSCS will help in reducing antepartum haemorrhage. There is a need for directed efforts for correction of anaemia in pregnancy and antepartum haemorrhage. Based on the observations made during the study, it can be concluded that antepartum haemorrhage is the major cause of maternal morbidity and perinatal mortality. [3, 4, 5, 6]

Information regarding the magnitude, causes and consequences of APH is limited in Ethiopia. A study from Hawassa University Hospital, a referral hospital in Southern Ethiopia, conducted on placenta previa and abruptio placentae patients who visited the hospital between January 2006 and December 2012 reported perinatal mortality rate of 50%. [6]

The study done in 2015 as G.C at Jimmaa University south west of Ethiopia shows perinatal mortality rate among births to mothers with APH was 36.9%. The prevalence of low birth weight among all births was 35%. [3]

Binary logistic regression with contributing factors to APH, address, maternal age, and number of fetuses as predictors showed that only address was a significant predictor of perinatal mortality. Newborns born to mothers with APH from Jimma town (where the study hospital is located) times less likely to die during their perinatal life compared to those from outside of Jimma. [3]

In this research, 3.1% of the patients with APH died during the peripartum period, four of which were because of hypovolemic shock secondary to bleeding. The other two deaths were because of respiratory failure. 1.7% maternal death occurred among APH cases from Jimma compared 3.7% among cases from outside of Jimma. according to this study, a number of complications were diagnosed among surviving patients too which Postpartum hemorrhage and anemia (more than 10% fall in hematocrit) were the commonest postpartum complications diagnosed in 37.4% and 74 % of the cases respectively and Hysterectomy was done for 3.1% patients with uncontrolled postpartum hemorrhage. 6.7% of the patients developed endomyometritis during postpartum period. 34.4% of the patients were discharged within two days of admission; 121 (62.1%) stayed for three to seven days; and three (1.5%) were hospitalized for longer than a week. [3]

3. Objective

3.1. General objective

- To assess the prevalence and treatment outcomes of women presenting with APH at SPHMMC during a year of 2008 E.C.

3.2. Specific objective

- 1. To determine prevalence of mothers with APH at SPHMMC in 2008 E.C.APH
- 2. To assess treatment outcome of APH cases at SPHMMC in 2008 E.C
- 3. To establish frequency of APH subtype placenta previa, abruption placenta and others

4. Methods and Materials

4.1. Study design

This study is a hospital based retrospective cross-sectional analysis which designed to assess the prevalence and treatment outcome of all mothers diagnosed with APH and admitted to SPHMM by reviews medical records.

4.2 Study area

This study conducted at Saint Paul's hospital millennium medical college, Addis Ababa, Ethiopia. The hospital is located at the northwest part of Addis Ababa and it is the second largest referral hospital in the city. The hospital has many departments of specialties beneath it and works 24 hours per day and 7 days per week. Each of department gives outpatient treatment (regular and emergency), admits and follows patients who are in need.

4.3. Study population

This study focused on pregnant women, who had been admitted to the maternity wards and directly admitted to labor ward with the diagnosis of Ante partum hemorrhage as per WHO criteria.

4.4. Source of population

All mothers with APH and gave birth at SPMMC during year of 2008 E.C.

4.5. Sampling Criteria

4.5.1. Inclusion Criteria

All mothers (any age group) who were admitted to the maternity ward or directly admitted to labor ward with the diagnosis of APH over the specified time period (in 2008 as E.C) were included in this research.

4.5.2. Exclusion Criteria

Those patients who will be excluded from the study are:

- Those mothers who are less than 28th weeks of gestational age.
- Those mothers who had not have obstetrics ultrasonography at any trimester.
- Those referred to other hospital and self-discharge for any reasons.

4.6. Sample Size Determination

A total of 207 patients had been admitted to maternity ward and directly to labor ward of Saint Paul's Millennium Medical College with the diagnosis of Ante partum hemorrhage over the last one year (from september1, 2008 to August 30, 2008 E.C). Medical records of all these patients were evaluated and included in the study.

4.7. Data Collection

Data collected retrospectively from the medical record of those patients who had been admitted to the maternity ward and directly to labor ward with diagnosis of ante partum hemorrhage over one year, Possible treatment outcome of the patients, socio-demographic data, and most common subtypes of APH has taken and fed to computer using SPSS version 20. Further analysis and correlation has done based on the data and variables.

4.8. Study variables

4.8.1. Dependent variables

Treatment outcome of the patients which includes: maternal death, perinatal death, anemia, postpartum hemorrhage, Prevalence of Ante partum hemorrhage and subtypes.

4.8.2. Independent Variable

- Age
- Address
- Occupation
- Marital Status
- Educational Status
- Employment Status
- Number of Parity
- Antenatal care
- Religion
- Ethnicity

4.9. Data Analysis

Data were analyzed using SPSS (Statistical Package of Social Sciences) Microsoft version 20. Then means, percentages and ratios were calculated and cross tab analysis was done and finally, the results were assessed and presented by use of charts, tables and texts.

4.10. Definition of Terms

Anemia: defined as a reduction in one or more of the major red blood cell (RBC) measurements obtained as a part of the complete blood count: hemoglobin concentration, hematocrit, or RBC count. ^[8]

- WHO criteria for anemia in men, non-pregnant women and pregnant woman are <13 and <12 g/dL, <11g/dL respectively.

Antenatal Care: The process of evaluating and managing pregnant women to ensure the birth of a healthy baby with minimal risk for the mother. ^[9]

Maternal death: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. ^[9]

Perinatal mortality: fetal death after 28 weeks gestational age (still birth) plus neonatal death of within first seven day. ^[9]

Early preterm: gestational age from 28⁰ weeks up to 33⁶ weeks ^[9]

Late preterm: gestational age from 34⁰ weeks up to 36⁶ weeks ^[9]

Term: gestational age from 37⁰ weeks up to 41⁶ weeks ^[9]

Postdate: gestational age 42 weeks and above ^[9]

4.11. Ethical Considerations

To carry out the study approval was given from the Saint Paul's Hospital Millennium Medical College's ethical and research committee. Even though there was no direct contact with patients, all information obtained from patients' medical records handled with utmost confidentiality.

5. Result

The hospital's Health Management Information System (HMIS) of SPHMMC reported 207 APH cases during the one year study period from September1, 2008-August30, 2008. The cases were identified by reviewing the hospital's admission log books, with 207 cases admissions both to the Maternity Wards and directly labor ward. From these, charts of 6 mothers were missing from the medical record room and 8 cases were not APH cases upon review of the chart. Finally, 193 APH Mothers who gave birth in Saint Paul's Millennium Medical College during the twelve month study period were included in the study, which means 92% of the 207 APH cases originally reported by HMIS for the study period.

Between September 1 and august 30, 2008E.C a total of 10,135 mothers gave birth in SPHMMC which make actual prevalence of APH 2% in 2008 E.C.

5.1. Sociodemographic Characteristic of Mothers with APH at SPHMMC in 2008 E.C

The distribution of socio-demographic characteristics among women with APH broadly reflects the population composition of reproductive age women in the catchment area; majority of the mothers included in this study were Oromo (53.3%), Ahmara (24.4%), Gurage (14.5%), others (7.8%): orthodox (64.2%), Muslim (26.4%), protestant(8.3%), complete grade ten and above (33.7%) up to grade 8(28.5%), illiterate(24.9%). The average age of the women was 28.13 years with standard deviation of 5.053 years. Three fourth of the mothers were in the age range of 20 and 35.

Table 1: Socio-demographic Characteristics of Mothers with APH at SPHMMC in 2008 E.C

Variables	Categories	Frequency	Percent
Age by years	20 and below	13	6.7
	21 up to 34	153	79.3
	35 and above	27	14
Ethnicity	Oromo	103	53.3
	Amahra	47	24.4
	Gurage	28	14.5
	others	15	7.8

Religion	Orthodox	124	64.2
	Muslim	51	26.4
	Protestant	16	8.3
	others	2	1
Occupation	House wife	113	58.5
	Civil servant	30	15.5
	Farmer	21	11
	Other	28	15
Marital status	Married	191	99
	Single	2	1
Address	Addis Ababa	84	43.5
	Out of Addis Ababa	109	56.5
Gestational age at time of delivery	Early preterm	11	5.7
	Late preterm	26	13.5
	term	123	63.7
	post term	4	2.1
	Unknown date	29	15

5.2. Subtype of Antepartum Hemorrhage

Abruptio placentae and placenta previa were the major causes of APH established as final diagnosis in 101 (52.3%) and 86 (44.6%) of APH patients, respectively. Other causes including cervical cancer, polyp and unknown causes accounted for 6 (3.1%) of the cases. The prevalence of abruptio placentae and placenta previa was 1% and 0.85% respectively among mothers who gave birth in SPHMMC and included in this study during a year of 2008, E.C.

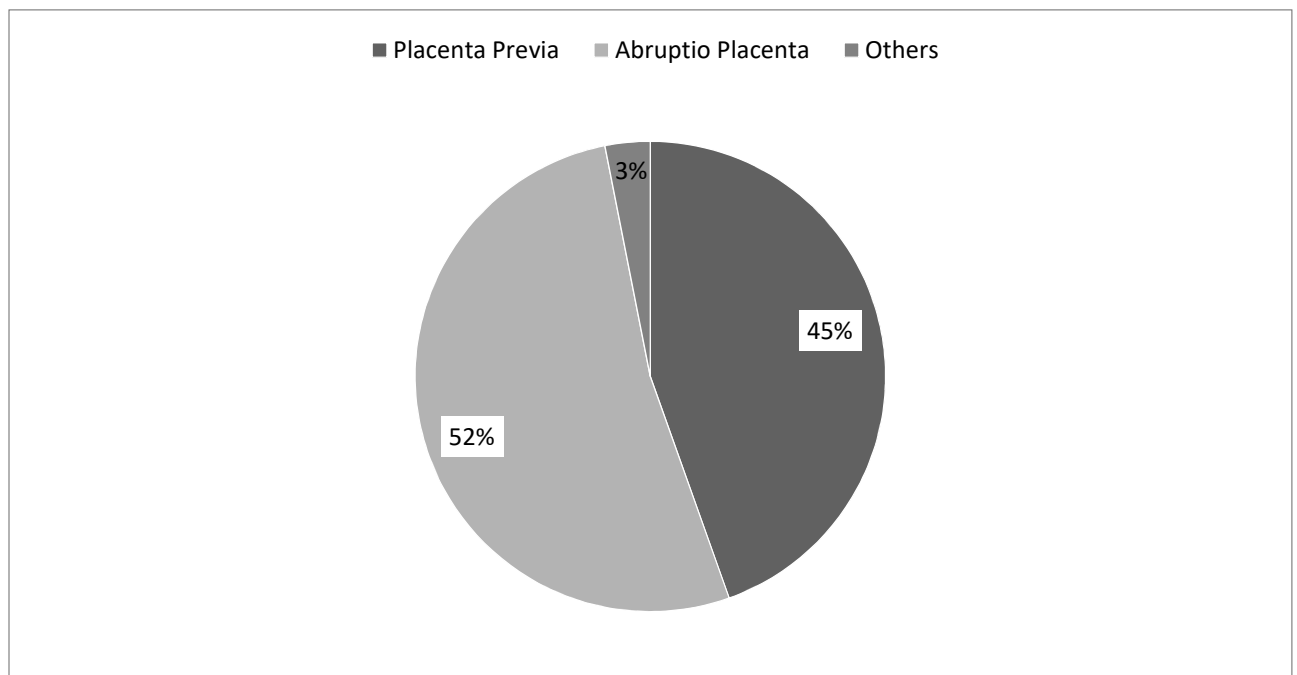


Figure 1: Subtypes of Antepartum Hemorrhage cases, SPHMMC, 2008 E.C

5.3. Healthcare service to mothers with APH at SPHMMC, 2008 E.C

Majority, 144 (74.6%), of the mothers with APH had at least two prenatal care visit to a health centre while 41 (21.25%) mothers' ANC were at hospital and eight (4.1%) mothers had no ANC follow up. Six (6.98%) of patients with placenta previa and two (2%) of those with abruptio placentae had no prenatal visits. One hundred fifty two (78.76%) of the patients were referred from another health facility mostly from catchment area around Addis Ababa.

Table 2: Healthcare service to mothers with APH, SPHMMC, 2008 E.C

Type of care	Categories	Numbers	Percent
Mode of delivery	Spontaneous vaginal delivery	42	21.8%
	CS delivery	148	76.7%
	Instrumental delivery	3	1.6%
Type of CS delivery	Emergency CS	91	65.5%
	Elective CS	57	35.5%

Antenatal care follow up visit	A health Centre (Referred From HC)	144	74.6%
	At hospital	41	21.2%
	No ANC follow up	8	4.1%
Blood transfusion	Blood transfusion indicated	58	31%
	Blood transfused at least one unit	44	75.8%

Cesarean section delivery (CS) was the common mode of delivery used in (74.6%) of APH patients. It was employed in 84(97.6%) mothers with placenta previa of which 43(51.2%) were done as emergency. Sixty two (61.4%) of mothers with abruptio placentae delivered by cesarean delivery 38(36.6%) delivered by spontaneous vaginal delivery. Non-reassuring fetal heart beat pattern (NRFHRP) was the major indication for cesarean section delivery in mothers with abruptio placentae documented in 49 (79%) of cases.

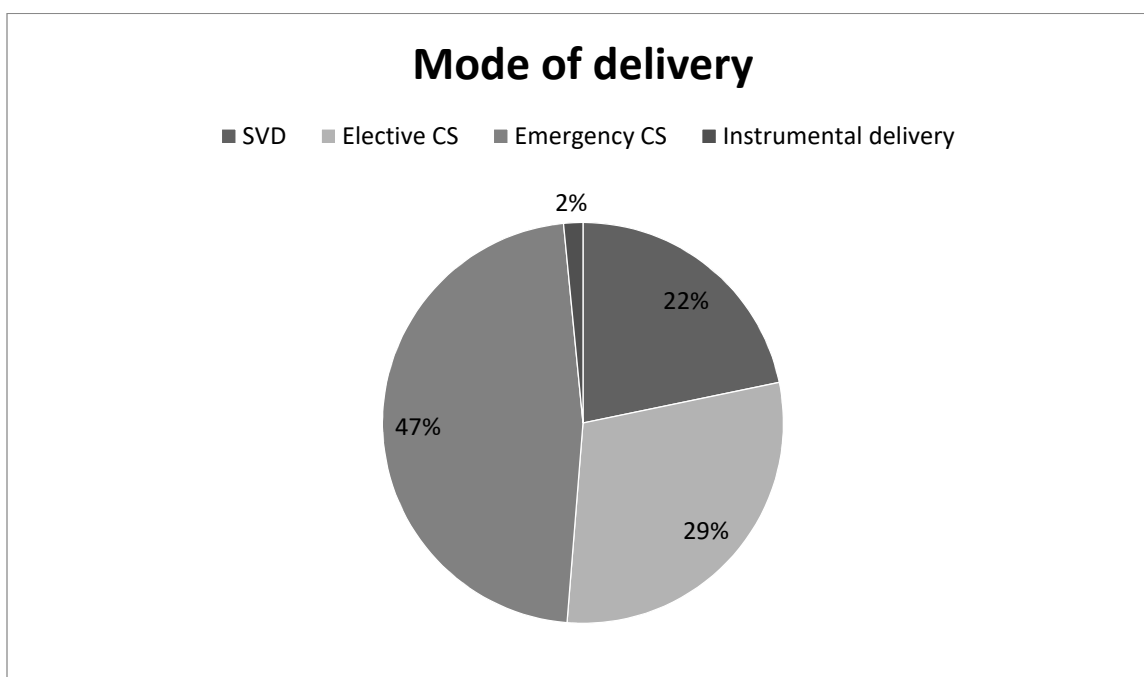


Figure 2: Mode of delivery of mothers with APH, SPHMMC, 2008 E.C.

5.4 Maternal Outcomes of mothers with APH at SPHMMC in 2008 E.C.

No Patient with APH was died during this study period, even though; a number of complications were diagnosed among patients with APH. Anemia was the commonest postpartum complications diagnosed in 63 (32.65%) cases. Postpartum hemorrhage was diagnosed in 11(5.7%) patients with APH and endometritis with surgical site infection in 12(6.2%) patients.

Hysterectomy was done for 2(1%) patients with uncontrolled postpartum hemorrhage. Thirty (15.5%) of the patients were discharged within two days of admission; 48 (24.9%) stayed for three to seven days; and 115 (59.6%) were hospitalized for longer than a week.

Table 3: Maternal outcomes of mothers with APH, SPHMMC, 2008 E.C

Variables	Categories	Numbers	Percent
Life outcomes	Discharged alive	193	100
	Maternal death	0	0
Complication	Anemia	63	32.65
	Postpartum hemorrhage	11	5.7
	Endometritis and surgical site infection	12	6.2
	Hysterectomy	2	1
Length of hospital stay	< =2days	30	15.5
	3 to 7 days	48	24.9
	More than 7 days	115	59.6

5.5. Perinatal Outcomes of newborn from mothers with APH, SPHMMC, 2008 E.C

A total of 196 newborn were born to 193 mothers. One hundred ninety (96.9%) were singleton babies; the rest 6 (3.1%) were twins. Of the total 196 babies born, 192(97.95%) were liveborns and 4 (2.05%) were stillborn, 59(30.1%) new born admitted to NICU. An additional, 9 neonates (4.6%) died within seven days of life after referral to Neonatal Intensive Care Unit (NICU).

Overall, perinatal mortality rate among births to mothers with APH was 6.63%. The prevalence of low birth weight among all births was 64(34.2%).

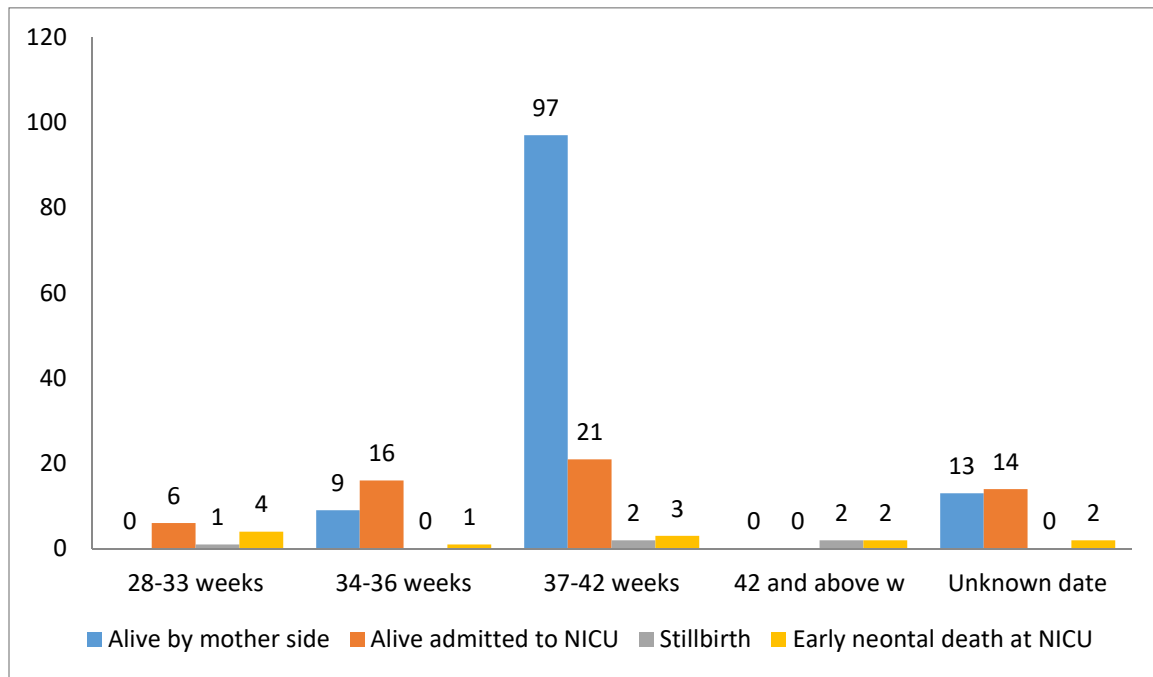


Figure 3: Life outcome of newborns form mothers with APH at birth and on 7th day of life with respective to Gestational age, SPHMMC, 2008 E.C

Table 4: Perinatal outcomes, newborn born to mothers with APPH, in SPHMMC 2008 E.C

Variables	Categories	Number of new born	Numbers of still born	Number of early neonatal death	Percent of perinatal death
All of newborns		196	4	9	6.6%
Causes of APH	Placenta previa	89	0	2	15.4%
	Abruptio placenta	101	4	7	84.6%
	Others causes	6	0	0	0%
Address	Addis Ababa	84	1	3	30.8%
	Out of Addis	112	3	6	69.2%
Maternal age	Less than 35 years	169	4	6	76.9%
	35 years or older	27	0	3	23.1%

Number of fetuses	Single	190	3	8	84.6%
	Twin	6	1	1	15.4%
Gestational age at delivery	Early preterm	12	1	4	38.46%
	Late preterm	27	1	3	30.8%
	Term	123	2	1	23.1%
	Post term	5	0	1	7.7%
	Unknown date	29	0	0	0%

6. Discussion

The prevalence of APH in SPHMMC was 2 %. The prevalence rates observed in this study were lower than reports from other studies conducted at Jima University, 20013 G.C (5.1%) which was prospective study and the researcher asses all patient from time of came to emergency which was not done in this study (not included those gave birth at emergency and discharged before admitted to maternity ward).

The distribution of socio-demographic characteristics among women with APH broadly reflects the population composition of reproductive age women in the catchment area; majority of the mothers included in this study were Oromo (53.9%), Amhara (23.8%); Orthodox (64.2%), Muslim (26.4%) which comparable with population of catchment area.

Illiterate rate (24.9%) lowers than researches done elsewhere do to most of mothers come from urban area Addis Ababa and others cities surrounding Addis Ababa. The average age of the women was 28.13 years with standard deviation of 5.053 years, which higher than study done at Jima University (26.6 years). Three fourth of the mothers were in the age range of 20 and 35.

The perinatal mortality (6.63%) and there was no maternal death observed among APH patients in this retrospective cross sectional study which was undergone at SPHMMC, these was much lower than study done at Jimma university(36.9%) which done in 2013, G.C.

These is due to most of mothers have chance to evaluated with obstetric ultrasonography and referred to our hospital from catchment area (Addis Ababa and surrounding towns) before it complicated with active bleeding for in patient management and also low early neonatal death after admitted to NICU (15.25%) compare to study done in Jima University, which most patient were from rural area and more likely to presented with active vaginal bleeding. The prevalence of low birth weight among all births was 64(34.2%) this result is similar with those done at Jima university (35%).

This study suggested that improvement in access to comprehensive obstetric care was a major contributor for the observed significant decrease fatality rates. Blood transfusion is a lifesaving component of comprehensive emergency obstetric care for mothers with obstetric

hemorrhage and in this study, blood transfusion were done for 75.5% for which required blood transfusion but during others research for example; study done at Jima blood transfusion were done only for 18.5% of mother required transfusion which explain high maternal mortality rate during that study.

In this study 115(59.6%) mothers stayed in patient for more than 7 days for inpatient management but in previous study, for example study at Jima University, 95.4% patient discharged with in 7days of admission which showed that most mother presented with active bleeding during laboring which associate with high maternal and perinatal mortality rate.

7. Limitation and Strength

The study has some limitations due to its nature as a retrospective medical record review study. The investigators had no control over the quality or completeness of the data since it was primary clinical data, not originally recorded for research purposes but for patient care. In general, the poor quality of medical recording has limitation not to accurately report demographic characteristics, and even treatment outcomes of some patients were not properly documented on discharge summary or progress notes. This study didn't include mothers with APH those gave birth at emergency obstetric OPD and discharged before admitted to maternity ward.

In addition, this study didn't get information how mothers who didn't include in this study were treated, and inability to follow discharged mothers and newborns until day seven of delivery. As a result, perinatal and maternal mortality might have been underestimated, if additional deaths occurred at home or others hospital among discharged newborns.

8. Conclusion

Antepartum hemorrhage, primarily caused by abruptio placentae and placenta previa, is a common complication of pregnancy and cause of maternal morbidity and perinatal mortality. The risk of adverse maternal and newborn outcomes including maternal morbidity, perinatal mortality were lower but birth weight was similar among APH cases in SPHMMC compared to reports from other Hospitals. Improvement in access to comprehensive obstetric care was a major contributor for the observed significant decrease fatality rates.

9. Recommendation

Efforts to improve geographical access, referral services and quality of comprehensive emergency obstetric and NICU care are still needed to improve more maternal and newborn outcomes in our catchment area and in Ethiopia as general.

In addition, a prospective hospital based study of APH incidence and prevalence studies are required to define the true socio-demographic characteristics and determinants of treatment outcomes of APH in SPHMMC.

10. References

1. World Health Organization, Maternal Mortality Factsheet, No 384, 2014 G.C.
2. Central Statistic Agency, Ethiopia Demographic and Health Survey, 2011 G.C.
3. Nega Chufamo, Hailemariam Segni , Yibeltalkelfie Alemeyehu, Incidence Contributing Factors And Outcomes Of Ante Partum Hemorrhage In Jimma University Specialized hospital , South West Ethiopia, 2015 G.C.
4. Jejani Ayushma Et Al, Study Of Obstetric Outcome In Antepartum Hemorrhage, Panacea Journal of Medicine September_ December, 2015 G.C.
5. Archana Maurya, Sonal Arya, Gajra Raja, Study Of Antepartum Hemorrhage And Maternal And Perinatal outcome , Gajra Raja Medical College, Gwalior, February, 2014 G.C.
6. Yefru Berhan, Predictors Of Perinatal Mortality associated With Placenta Previa And Abruptio Placenta, College Of Medicine And Health Science Hawasa University, Hawasa , Ethiopia, 2014 G.C.
7. Bener, Et Al, Prevalence and Associated Riskfactors of AntePartumhemorrhage Among Arab Women in an Economically Fast Growing Society, Nigeria, October, 2011 G.C.
8. Nutritional Anemias, Report of WHO Scientific Group, WHO Organ Tech Rep Ser 1998; 405:5.
9. John O. Schorge, et al, Williams, Obstetrics, 23th Edition university of Texas Southwestern Medical center at Dallas, USA, 2008 G.C.

11. Data collection check lists

1. Socio demographic data of mother with APH at SPHMMC.

1.1 . Hospital card number

1.2. Age

1.3. Religion

1.2 . Ethnicity

1.3 .Address

1.4 .Occupation

1.5 .Marital status

1.6 .Educational status

1.7. Parity

1.7 . Gestational age at presentation

1.8 . Gestational age at delivery

2. subtypes of Antepartum hemorrhage:

a, abruptio placenta b, placenta previa c, others local causes

3. Healthcare service to mothers with APH in SPHMMC.

3.1 Mode of delivery:

a. Spontaneous vertex delivery b. cesarean section delivery c. instrumental delivery

3.1.1. Types of cesarean delivery and indication:

3.2 . Antenatal care follow up:

a. at health center (referred from health center) b. at hospital c. no antenatal care follow up or less than two visit

3.3. Blood transfusion:

a. blood transfusion indicated b. indicated and transfused with at least one unit c. indicated but not transfused

4. Maternal outcomes of mother with APH at SPHMMC.

4.1. Life outcomes:

a, discharged alive b, maternal death

4.2. Complications to mother:

a. anemia b. postpartum hemorrhage c. endometritis and surgical site infection
d. hysterectomy done and indication

5. Length of hospital stays by days

6. Perinatal outcomes of newborn from mothers with APH at SPHMMC.

6.1. Number of newborn:

a. singleton b. twin

6.2. Gestational ages at delivery by weeks

6.3. Birth weight of new born by gram

6.4. Live outcome:

a. alive by mother side b. alive admitted to NICU c. stillbirth d. early neonatal death after
admitted to NICU