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"POSTPARTUM HEMORRHAGE: AN EXPERIENCE AT TERTIARY CARE HOSPITAL, HYDERABAD"

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ABSTRACT

Objective: To determine the frequency, risk factors, causes, management, morbidity and mortality due to primary postpartum hemorrhage (PPH).
Methodology: This Descriptive study was conducted in department of Obstetrics and Gynaecology Unit II of Liaquat University Of Medical and Health Sciences Hospital, Hyderabad From 1st July 2011 to 31st December 2011.Women who developed primary postpartum hemorrhage after admission or admitted with it, were included in our study. Medical record files of these women were reviewed to find out the cause, risk factors, mode of delivery, any medical or surgical intervention, need of blood transfusions and maternal morbidity or mortality associated with this life threatening problem.
Results: Total 1800 deliveries occurred in 6 month duration. Out of which 93 women were developed primary postpartum hemorrhage, thus representing the frequency of 5..1% or 1 in 46 deliveries. Majority 59(63%) women were young and belong to age group between 25-35 years of age and most of them 46(49.5%) were multigravida. 70 (75%) were un-booked. The most common cause of postpartum hemorrhage was uterine atony. Most cases were referred and delivered at home or private maternity clinics run by Traditional Birth Attendants (TBAs) so they reach in moribund condition. 64(69%) women delivered vaginally. Initially all patients were managed pharmacologically followed by surgical intervention. Cesarean hysterectomy was performed in 4(4.%) cases. Internal Iliac Artery ligation along with hysterectomy performed in 2(2%) cases. Blood transfusion were required in 64(68%) patients. The major maternal morbidities were anemia, acute renal failure, disseminated intravascular coagulation and shock. There were 5 (5.3%) maternal deaths.
Conclusion: Uterine atony was the most frequent reason for postpartum hemorrhage secondary to high parity, abruption placentae, placenta previa, and prolong labour. So timely identification and the management of these factors can reduce this deadly problem.

Key Words : Primary postpartum hemorrhage, Uterine atony, Morbidity, Mortality

INTRODUCTION

Postpartum hemorrhage (PPH) remains a major cause of global maternal morbidity and mortality, even in developed countries, despite the use of intensive care units. It is not only life threatening situation but also an obstetricians nightmares. All women who carry a pregnancy beyond 20 weeks gestation are at risk of PPH and its sequalae.[1] Postpartum hemorrhage is one of the leading 5 causes of maternal deaths in both the developed and developing countries.[2] It is estimated that 600,000- 800,000 women die in childbirth each year.[3] The direct pregnancy related maternal mortality rate in United states is approximately 7-10 women per 100,000 live births and approximately 8% of these deaths are caused by PPH.[1]In Pakistan 25000-30000 women die each year due to

pregnancy and childbirth related complications and PPH contributes its major share,[4] it accounts 21% of all maternal deaths as determined from hospital based data.[5] Maternal mortality rate (MMR) in India is estimated 560/100,000 live births and PPH accounting for 35-56% of these deaths,[6] while it varies between 43-59%in various developing countries.[1] Loss of 500ml of blood in first 24 hours following delivery is generally considered as physiologically normal and anything exceeding that constitutes primary PPH and after 24 hour is called secondary PPH. Significant clinical deterioration usually does not occur until there is blood loss >1000-1500ml. Massive primary PPH occurs when there has been an estimated blood loss of >1500ml, peripartum fall in hemoglobin concentration >4g/dl or acute transfusion requirement of 4 units of blood.[7]The incidence of standard PPH and massive PPH is 90% and 4.2% respectively and incidence of PPH following vaginal delivery is 5-8%.[6,8] The causes of PPH includes uterine atony 65%, genital tract trauma 33%, retained placentae 27%,coagulation disorders and uterine rupture.[2,9] Several resources have suggested using the 4T's as nemonic: Tone, Tissue, Trauma and Thrombosis. Predisposing factors for PPH includes macrosomia, multiple gestation, polyhydroamnios, muliparity, leiomyomas, pre-eclampsia, abruption placentae, chorioamnionitis, use of analgesia or anesthesia, magnesium sulphate, previous caesarean section scars, caesarean section (9 times with emergency and 4 times with elective caesarean section), prolong 3rd stage of labour, prolong labour or augmented labour, PPH in previous delivery, absence of prenatal care and Asian and Hispanic ethenic.[9,10] The most common consequences of PPH including hypovolumic shock, anemia, disseminated intravascular coagulation (DIC), renal failure, adult respiratory distress syndrome (RDS), multi organ failure with circulatory collapse, transmission of viral infections or complications due to blood transfusion, hysterectomy and loss of child birth potential, Sheehan"s syndrome, Asherman"s syndrome. Morbidity and mortality from PPH are largely preventable. Proper assessment and treatment is mandatory. The primary intervention including active management on 3rd stage of labour, minimizing trauma associated with instrumental delivery, use of uterotonics both for prophylaxis and therapeutic can reduce the risk. Intervention like uterine message, bimanual compression, application of compression sutures, uterine or internal iliac artery ligation and hysterectomy can be performed. In order to save the life of the mother, prompt applicability and effectiveness are critically important issue for the method to be used. The aims of our Study were to determine the frequency, causes, risk factors of PPH and various treatment methods used in our setup. The rationale of the study was to identify risk factors and causes and these can be rectified, measures can be taken to improve the maternal morbidity and mortality by timely intervention.

MATERIAL AND METHODS

This descriptive study was conducted at Gynaecology and Obstetrical Unit II of Liaquat University of Medical and Health Sciences Hospital Hyderabad between 1st July 2011 and 31st December 2011.Total 93 patients with primary postpartum hemorrhage were admitted during study period and were included in the study. Patients presented with secondary postpartum hemorrhage, hemorrhage due to accidental causes (RTA) and bleeding disorders were excluded from the study. Patients who were admitted for delivery and ending up in postpartum hemorrhage or came in emergency either throughout patient department (OPD), causality or as referral from other hospitals of Hyderabad or from interior of sindh were included. After reviewing record of all patients who fulfilled the inclusion criteria and all the data retrieved regarding age, parity, gestational age, booking status, risk factors, causes (uterine atony, vaginal haematoma, adherent placentae, cervical, vaginal, perineal tears, uterine angle extension),mode of delivery (spontaneous vaginal, instrumental vaginal, caesarean section) and complications(shock, anemia, disseminated intravascular coagulation (DIC), renal failure, septicemia or any other complications). Diagnosis of PPH and its causes were made clinically based on findings of pelvic examination, condition of uterus and amount of bleeding. After initial assessment of patient emergency care was provided according to condition of patient. Initially medical treatment started including uterotonics (oxytocin,ergometrine,prostaglandin F2 alpha), blood transfusion, need for care in High dependency Unit. Surgical intervention like examination under anesthesia, intrauterine packing, evacuation of retained placental tissues, manual removal of placentae, repositioning of uterine inversion, suturing of cervical ,vaginal, perineal and uterine angle tears, drainage of vaginal haematoma, internal iliac artery ligation, caesarean hysterectomy were proceeded in patient who failed to give response to above mentioned measures. An efficacy of the obstetric care was assessed by maternal morbidity and mortality related to PPH and its treatment. Data was entered in objectively structured proforma. SPSS version 16 was used for statistical analysis. Categorical variables like age, parity, gestational age and booking status were analyzed in form of frequency and percentages. Statistical test of significance were not applicable for this descriptive study.

RESULTS

During study period of 6 months from 1st July 2011 to 31st December 2011, total admissions were 2350 and 1800 women were delivered. Among them 93 cases of primary postpartum hemorrhage with different etiologies were admitted in Gynaecology and Obstetrical Unit II of Liaquat University of Medical and Health Sciences Hospital, Hyderabad. Hence frequency was 5.1%. Majority of women 59(63%) were between 25-35 years age group, 46(49.5%) were multigravida, 33(35.5%) were grandmultipara while 14(15%) were primipara. Our most of patients 71(76.4%) were presented in third trimester, 6(6.4%) women in second trimester while 16(17.2%) women presented with PPH in period of puerperium within 24 hours of delivery who delivered somewhere else (postnatal period). 70(75%) patients had no antenatal checkup while 23(25%) had antenatal checkup. Regarding risk factors abruptio placentae found in 7(8%) women, placenta previa in 6(6.4%), pre-eclampsia in 6(6.4%), previous caesarean section in 5(5.3%), prolong labour in 4(4.3%), obstructed labour in 3(3.2%), scar dehiscence found in 2(2%) women who have previous scar and now delivered vaginally. 64(69%) women were delivered vaginally. Out of these 64 women 41(64%) were delivered at home or maternity clinics. The most common cause of PPH was uterine atony found in 46(50%) women followed by cervical, vaginal and perineal tears in 26(28%) cases, retained placental tissue in 12(13%), retained placenta in 2(2%), uterine inversion in 2(2%), placental bed bleeding in 2(2%), scar dehiscence in 2(2%) and vaginal haematoma in 1(1%) cases (Table-1). Regarding management options, almost all patients received pharmacological treatment as it is 1st line management but some patients required conservative or aggressive surgical treatment who were not respond

TABLE # 1:
Causes of PPH (n=93).

Causes	Number	Percentage
Uterine atony	46	50%
Cervical ,vaginal, perineal tears	26	28%
Retained placental tissues	12	13%
Retained placenta	2	2%
Uterine inversion	02	2%
Vaginal haematoma	01	1%
Placental bed bleeding	02	2%
Scar dehiscence	02	2%

TABLE # 2.
Various management options (n=93).

Management	Number of Patients	Percentage
Uterine message	17	18%
Bimanual compression	5	5.3%
Intrauterine Packing	11	12%
Vaginal Packing	07	8%
Suturing of genital tract injuries	19	20.4%
Uterine Exploration due to RPOCS	12	13%
Manual removal of Placenta	2	2%
Manual reposition of Uterus	2	2%
Compression sutures at placental bed	2	2%
Drainage of vaginal haematoma	1	1%
Laprotomy due to scar dehiscence	2	2%
B-lynch sutures application	7	8%
Caesarean Hysterectomy	4	4.3%
Internal Iliac Artery ligation +Hystrectomy	2	2%

TABLE # 3:
Maternal morbidities and mortalities.

Causes	Number	Percentage
Morbidities		
Anemia	53	57%
Shock	8	9%
Acute renal failure	4	4.3%
DIC	5	5.3%
Paralytic Ileus	5	5.3%
Puerperal fever	8	9%
Puerperal psychosis	4	4.3%
Maternal mortalities	**5**	**5.3%**

to medical treatment. Uterine message was done in 17(18%) patients with uterine atony, 5(5.3%) were managed with bi-manual compression, uterine and cervical packing was done in 11(12%), vaginal packing in 7(8%), suturing of genital tract injuries done in 19(20.4%), uterine exploration due to retained products of conceptions done in 12(13%), B-lynch applied in 7(8%) women. Caesarean hysterectomy done in 4(4.3%). Manual removal of placenta in 2(2%), manual reposition of uterus in 2(2%), compression suture at placental bed in 2(2%), drainage of vaginal haematoma in 1(1%), laparotomy due to scar dehiscence in 2(2%) patients and combined procedure like Internal Iliac artery ligation along with subtotal hysterectomy done in 2(2%) women (Table-2). 64(68%) of women required blood transfusion. Regarding maternal morbidities anaemia was found in 53(57%) women, shock in 8(9%), acute renal failure in 5(5.3%), disseminated intravascular coagulation in 4(4.3%) patients. Other morbidities were paralytic ileus, puerperal fever, and puerperal psychosis. Maternal mortality was 5(5.3%) (Table-3).

DISCUSSION

Hemorrhage in pregnancy still constitutes a major part of the gravest obstetrical emergencies. Any women who gives birth can have PPH which may threaten her life and it is one of the leading cause of maternal morbidity and mortality in developing world. Incidence of PPH in our study was 5.1% while it varies between 0.5-9.5% in different studies done in Pakistan [1,3,7,11] and 3.2% in study done in India.[3] In recent review, PPH was found to have an increasing trend in the more developed parts of the world including Australia, Canada, UK, and USA.[12]

Grandmultiparity, lack of antenatal care, pre-eclampsia, antepartum haemorrhage, placenta previa, previous cesarean section, obstructed labour, prolong labour, scar dehiscence were the significant risk factors in our study which compares well with other studies.[13, 14] Regarding the causes of PPH the main cause was uterine atony with frequency of 50% while it varies between 34-65% in different studies done in Pakistan.[15,16,17] In international studies uterine atony was also the most common cause of PPH ranging from 50 to 70% of cases.[6,18] The other causes of PPH in our study were traumatic lesion of genital tract in 26(28%) patients, retained placental tissues in 12(13%),retained placenta in 2(2%), uterine inversion in 2(2%) patient. Same causes were reported by Shaista Tabassum in her study.[1]

In our study 64(69%) women were delivered vaginally. Out of these 64, 23(36%) were delivered in our hospital while 41(64%) women were delivered either at home or private maternity clinics. Four patients had instrumental vaginal delivery while 25(27%) women delivered by emergency caesarean section. It was comparable with the study done in Larkana.[11]Association between PPH and caesarean section is comparable to other studies, where the highest risk of massive PPH has been reported for pre-labour and emergency caesarean section, especially in mothers with previous section.[19] The reason of PPH with Caesarean section is due to increase bleeding either from uterine incision or from the extension of tears. The risk of PPH increases with caesarean section as mentioned in many studies.[6]

Timely recognition and intervention are fundamental keys in preventing serious maternal morbidity and mortality. A combination of conservative therapies is adequate and successful in many cases but when the bleeding continues or hemodynamicl instability develops, the next step must be invasive intervention.[7] Our almost

all patients required pharmacological treatment which is comparable to the study done in abbottabad.[6] Various procedures like uterine message, bi-manual compression, intrauterine and vaginal packing, suturing of genital tract traumas, evacuation of uterus due to retained placental tissues, manual removal of placentae, manual reposition of uterus, compression sutures at placental bed, drainage of vaginal haematoma, laparotomy due to scar dehiscence after vaginal birth done for control of PPH during study period. Same procedures were reported by Lumaan Sheikh in her study.[3] If these measures were unsuccessful in controlling the bleeding the next step is usually surgical either conservative or aggressive. Conservative surgical procedure like b-lynch applied in 7(8%) women, it was applied in 24% of women in study done at Karachi.[7] Caesarean hysterectomy done in 4(4.3%) women while rate was higher in study of Safia that is 19.79%.[4] Also combined surgical procedures were performed in our department in which most important is Internal Iliac Artery ligation along with caesarean hysterectomy it was done because even after hysterectomy patients were continue to bleed from vault, so as a lost resort was internal iliac artery ligation was done and was successful and patients survived, it was done in 2(2%) women similar procedure was performed in 13(5.3%) women in study done in Turkey.[2] 64(68%) women required blood transfusion while 88% of patients needed blood transfusion in the study done in Karachi.[7] It was less in our study because remaining 29 women were mildly anaemic and not required blood transfusion.

Apparently two third of obstetrical morbidity is related to obstetrical hemorrhage. Anemia was the commonest maternal morbidity found in 53(57%) women while it varies between 40-78.12% in different studies.[4,6] Other morbidities were acute renal failure, disseminated intravascular coagulation, shock, paralytic ileus. puerperal fever, puerperal psychosis. Same were reported by Humaira Niaz.[6] During study period 35 maternal deaths occurred and PPH accounts for 5(5.3%) of it which is quite small figure than 17-20%[4,21,22] reported in other studies. [4,21,22] These 5 patients were referred either from private hospital or maternity clinics run by Traditional birth attendants(TBA).The reasons for such morbidities and mortalities were lack of antenatal care, most of deliveries conducted at home or private maternity clinics. These patients were referred to our hospital in a moribund condition. Even after all efforts the loss already occurred due to delayed arrival, hypovolumia and DIC which was not recoverable. By timely referral of these patients and correction of hypovolumia at basic health units and during transportation can improve the outcome of PPH. Postpartum haemorrhage is life threatening obstetrical emergency. In order to prevent the complications associated with this condition great attention needs to be directed to the preventive measures that will be adopted and an organized step wise management protocol should be initiated.

CONCLUSION

Postpartum hemorrhage is most common cause of obstetrical hemorrhage. It can be preventable condition and its early identification and timely management can reduce the maternal morbidity and mortality. Our study highlights the interventions to evaluate and control bleeding by various methods like intrauterine, cervical and vaginal packing, B-lynch sutures and Internal Iliac artery ligation. These methods are easily applicable, safe and effective for the management of life threatening obstetrical bleedings due to atony. These are not costly and not required complex equipments with advantage of preservation and maintenance of fertility. By these methods we not only reduce the morbidity but also reduce mortality.

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