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Primary Post Partum Hemorrhage An Obstetric Catastrophe: A Review of 270 Cases

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ABSTRACT

Objective: to see the frequency, causes of Primary Postpartum Hemorrhage (PPH), and identify the management options and to apply them successfully for control of primary PPH. So as to reduce the maternal morbidity and mortality rate.

Study Design: retrospective study

Place and Duration of Study: This study was conducted in Gynae Unit–IV, Bolan Medical Complex Hospital, Quetta from January 2011 to July 2012.

Patients and Methods: The data was collected from the records of patients who were admitted as case of Primary PPH and developed PPH during the delivery / Cesarean section. The data was noted on predesigned Proforma which include, complete obstetrical history, abdominal and pelvic examination and relevant laboratory investigations. The maternal condition was assessed and managed according to Hospital protocol. All maternal complications were noted. The patients who were bleeding at the time of delivery due to non – obstetrical condition were excluded from study.

Results: A total 270 cases of PPH were diagnosed. Major causes of Primary PPH were uterine atony in 143 (53%) retained placenta, in 49 (18%) ruptured uterus in 43 (16%) cases. The risk factors for uterine atony were prolonged 1st and 2nd stage of labour, grand multipara and retained placental tissues. Patients were managed both medically and surgically. The major morbidities were anemia 32%, hypovolemic shock 26%, puerperal sepsis 15% and acute renal failure 5%.

Conclusion: Primary PPH is an important cause of serious morbidity and one of the leading causes of maternal mortality in the developing and developed world. The majority of deaths are preventable by the active management of 3rd stage of labour followed by a logical management protocol.

Key Words: Primary Postpartum hemorrhage, Uterine atony, Maternal morbidity and mortality, Active management of 3rd stage labour.

INTRODUCTION

Primary post partum hemorrhage (PPH) is defined as the blood loss exceeding 500 ml or more from birth canal within 24 hours of delivery of baby.[1] Incidence of primary PPH has been reported as 5% of all deliveries in the literature.[2] Massive PPH is defined as estimated blood lost of more than 1500 ml within 24 hours of delivery[3], remains one of the most important causes of maternal mortality and accounts for 11% of all maternal deaths during the last triennium confidential inquiries into the maternal death in the United Kingdom.[4] Massive PPH can result in maternal complications like Anemia, hypovolemic shock, Puerperal Sepsis, disseminated intravascular coagulation and renal failure.[5] Inability to stabilize a patient who is in hemorrhagic sock can eventually result in death. In order to prevent these complications, an organized and stepwise management protocol should be immediately initiated.

PPH is one of the most common complications of third stage of labour, about 8% of obstetrics patients suffer serious post partum blood loss. It is still significant cause of maternal morbidity and mortality in developed and under developed countries.[6] There are 600,000 maternal deaths reported world wide every year and 99% of these occur in developing countries.[7] 25% of deaths in developing world are due to PPH and the prevalence is 34% in Pakistan.[8] Maternal mortality rate in Pakistan 276/100000 and highest in Balochistan that is 785/100000.[6] Maternal mortality rate in India is estimate as 560/100000 live births and PPH accounting for 35-56% of these deaths.[9]

Major causes of primary PPH includes uterine atony, retained placenta, abnormally adherent placenta , uterine rupture, genital tract trauma, uterine inversion and existing or acquired coagulopathy. The most common causes of uterine atony are prolonged first and second stage of labour, augmented labour, retained placenta, multiple pregnancies, polyhydramnios, and uterine fibroids, multiparty and precipitated labour.[10] Prevention of uterine atony is the key to reducing the incidence of PPH. Active management of third stage of labour, which includes administration of uterotonic agents, controlled cord traction and uterine massage after delivery of the placenta; reduce the duration & incidence of primary PPH from 15 -5%.[11]

Prompt resuscitative measures is the main stay of treatment for PPH, which includes fluid and blood administration, use of uterotonics, uterine massage, repair of lacerations, removal of retained products of conception and intra uterine balloon tamponade. If

these measures are unsuccessful in controlling the bleeding, the next step is usually surgical, like B-Lynch suture, vessels ligation, or hysterectomy.[12,13]

All the pregnant women are at risk of obstetrical complication and most of these occur during labour and delivery, majority of these suffers from serious morbidity due to primary PPH. So the objective of our study is to apply prompt and standardized medical and surgical management protocols to reduce the morbidity and mortality due to primary PPH.

MATERIALS AND METHODS

This retrospective study was conducted in the Department of Obstetrics and Gynea unit IV at Bolan Medical Complex Hospital Quetta, from January 2011 to July 2012. Inclusion criteria were all women booked or un booked admitted with or developed Primary PPH in hospital after vaginal delivery/caesarean section.

Exclusion criteria were patient with history of bleeding disorders, acute fulminant hepatitis or on antiplatelets drugs.

Record of all the patients were analyzed for age, parity, booking status, mode of delivery, place of delivery, possible causes of PPH (uterine atony, retained placenta, ruptured uterus, perineal and cervical tears and morbidly adherent placenta). Details of risk factors including prolonged first and second stage of labour, grandmultiparity, ante partum hemorrhage, retained placental tissues and multiple pregnancies were reviewed. Resuscitative measures and medical & surgical interventions were evaluated. Patients were evaluated for the complications due to primary PPH like anemia, hypovolemic shock, Puerperal sepsis, acute renal failure and DIC. All the record was noted on predesigned proforma and analyzed on SPSS version 17.0.

RESULTS

During study period from January 2011 to July 2012 a total number of deliveries were 6518. Out of these 5695 (87%) delivered as spontaneous vaginal delivery (SVD), 358 (5.4%) by instrumental deliveries and 465 (7.1%) by Lower Segment Cesarean Section. Out of these 270 patients developed primary PPH. Incidence of Primary PPH was 4.1%.

Table-I: Incidence of PPH (n = 270)

SVD	5695	212	3.7%
Instrumental	358	15	3.3%
LCSC	465	43	9.2%
Total	**6518**	**270**	**4.1%**

Figure I shows the causes of primary PPH .Uterine atony was identified as major cause of primary PPH 143 (53%), the next common cause was retained placenta 49 (18%), ruptured uterus 43 (16%) and Perineal &cervical tear in 24 (8.8%).

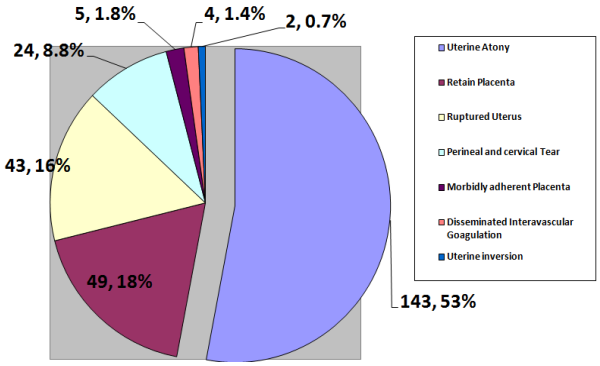

Figure No.1: Causes of Primary PPH (n-270_

Table 2 shows the risk factors causing uterine atony.Prolonged first and second stage of labour 40(28%), grand multi parity 27(19%), ante partum hemorrhage 24(14%),& retained placental tissues and membranes 24(16%) were the most common causes of uterine atony

Table No.2: Risk Factors causing uterine atony (n-143)

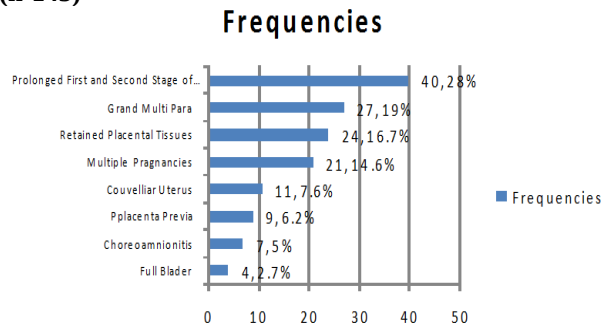

Table 3 shows management for primary PPH. Bimanual Uterine Compression and uterotonic agents were tried in every patient when failed then other measures were performed like uterine exploration for retained placental fragments and membranes or clots. In 49 (18.4%) retained placenta was manually removed under general anesthesia, repair of ruptured uterus was done 36 (13.3%) and repair of cervical and perineal tear in 24 (8.8%), B- Lynch suture was applied 13 (9%), uterine artery and internal illiac artery ligation 11 (7.59%) and emergency obstetrical hysterectomy were performed in 15 (5.5%).

Results regarding the morbidity of primary PPH are shown in table-V. It was noted that most of the patients 87 (32%) suffered from anemia and 72(26%) suffered from hypo volumic shock. Next common complication seen was Puerperal Sepsis in 41(15%) and only 9% of patients suffered from serious complication such as acute renal failure and DIC.

Table No.3: Management of Primary PPH (n-270

Procedure used	Number	%age
Bimanual Uterine Compression + Uterotonics +	150	55%
Misoprostol	70	25.80%
Manual removal of Placenta and Membranes + Clots	49	18%
Repair of ruptured Uterus	36	13%
Repair of cervical and perineal tear	24	8.80%
Correction of uterine inversion	2	0.70%
B – Lynch suture	15	5.50%
Uterine Artery Ligation	10	3.70%
Internal Iliac Artery Ligation	3	1.10%
Emergency Obstetrical Hysterectomy	15	5.50%

Table No.4: Morbidity due to Primary PPH (n-270)

Complications	**Number of Patients**	**Percentage**
Anemia required blood transfusion	87	32%
Hypo volumic Shock	72	26%
P Sepsis	41	15%
Acute renal failure	13	5%
DIC	11	4%
Sheehan Syndrome	0	0%
No complications	37	13.7%

DISCUSSION

Obstetrical hemorrhage is the leading cause of maternal mortality in developing countries accounting for 10-30% of direct maternal deaths. According to Pakistan Demographic Health Survey 2006-7, PPH is the commonest cause of maternal death.[6] WHO gives prevalence of PPH as 34% in Pakistan.[7]

Most common cause of PPH in our study was uterine atony. This is somewhat lower in comparison to other study conducted in a teaching hospital in Abbottabad, which shows it to be the cause in 70% of cases.[14] Another study from Abbottabad identified grandmultiparityas a risk in 51.5% cases much higher than our study in which 18.8% of PPH was due to grandmultiparity.[15]

Prendiville at all in their study found that early oxytocin therapy reduces the incidence and severity of PPH by 40% and post partum anemia and need for blood transfusion as well.[16] We agree with Khan et all that uterotonic are more active in prevention of PPH if they are administer before, rather then after the placenta is delivered.[17]

Misoprostol (800Ugm) per rectally is valuable in the treatment and prevention of primary PPH, in lower resources setup, because of its low cost and easy storage.[18]

Retained placenta& ruptured uterus was the next common cause of PPH in our analysis. A study from civil hospital Karachi June 2009 showed common causes of PPH as ruptured uterus (35%) and morbid adhesion of placenta (20%) which are higher than our study.[19] In contrast to that an African study incidence of retained placenta as 78.57% reason being mismanagement of the third stage of labour.[20]

Genital tract tears, commonly cervical and vaginal can bleed profusely and are recognized cause of significant PPH. Timely detection and stitching of tear and injuries can reduce morbidity and mortality. Some studies reports similar recommendations of rapid recognition of trauma and simultaneous resuscitation are given by other authors[14,21].

B-Lynch suture was applied in 5.5%. it allows for conservation of the uterus for the subsequent menstrual function and pregnancies, hence it is preferred over hysterectomy. As it is simple first surgical step control bleeding and strongly recommended by several authors.[13,15,22,23]

Emergency obstetrical Hysterectomy (EOH) is well known procedure in controlling PPH. It was performed where uterine atony do not respond to conservative measures or when ruptured uterus was non-repairable. Hysterectomy is a radical procedure that causes sterility, secondary amenorrhea, physical and psychological trauma. Several authors reported that bilateral uterine artery ligation is an effective procedure for management of uncontrolled PPH.[19,21]

As supportive medical and surgical interventions required to save the life of patients in our study, 32% of patients required blood transfusion. Study by Lumaan sheikh et all. shows 87.5% required admission to 'High Dependency Unit', 56.3% required blood transfusions, caesarean hysterectomy in 12.5% and B-Lynch sutures in 6.2%.[23] A study in conducted in Abbottabad showing 40% patient had anemia 4% has acute renal failure 2% had DIC and 16% has combined morbidity, i.e, shock plus anemia.[15]

A serious complication from prolonged hypotension in which renal perfusion is not re established, if systolic blood pressure remains below 80mm Hg for more then few hours, the patient is liable to develop anuria due to tubular necrosis. A study conducted in Peshawar showing of obstetrical acute renal failure amounts from 7% to 10 %, PPH contributing 35%, septicemia, 24% combine APH, PPH with eclampsia 20%.[24]

Uncontrolled or untreated Post partum hemorrhage can leads to shock and death very rapidly. Most of the deaths occur with in first few hours after delivery. A study in Egypt found that 88% of these death within 4 hours postpartum[25]. Adequate EMOC can be determine, if a women live or die, for example average interval from onset to death in PPH was 2 hours and in ruptured uterus was one day. Factors delayed attendance of EMOC are lack of knowledge, low social status of women or poor quality of health services, for example poor midwifery domiciliary services, illiteracy, improper referral system and lack of transport or financial inaccessibility of health care. As every woman is potentially at risk of PPH, active management of the 3rd stage of labour should be offer to all the women. The risk factors for PPH are known but, it is not always possible to successfully prevent it. So the main stay to

prevent morbidity and mortality due to PPH, manage this life threatening condition promptly and effectively.

CONCLUSION

From the experience of our cases and review of literature, the primary PPH is an un predictable and potentially catastrophic complication of child birth. Optimal and timely management of 3rd stage of labour decreases the incidence of PPH, reduces need for blood transfusion and minimizes the severity of postpartum complications.

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