ORIGINAL ARTICLE

POSTPARTUM HEMORRHAGE: AN EXPERIENCE AT TERTIARY CARE HOSPITAL

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ABSTRACT

Objective — *To determine the frequency, causes and various treatment methods used in for postpartum hemorrhage (PPH) our setup.*

Study design — *Descriptive study.*

Place & Duration of study — *This study was conducted in the Department of Obstetrics and Gynecology Unit 1, Liaquat University of Medical & Health Sciences Hyderabad, from June 2007 to April 2008.*

Patients and Methods — *All women admitted with or developed PPH in hospital after delivery or cesarean section were included. Patients with history of bleeding disorders and those on heparin/warfarin were excluded. Results were analyzed through computer software program SPSS version 11 and percentages were used to describe the data.*

Results — *Total number of obstetric admissions during the study period was 1231. Out of these 118 (9.5%) patients developed PPH. Out of these 118 patients, 98(83%) patients had primary PPH while 20(16.9%) patients had secondary PPH. Seventy five (63.5%) patients were unbooked while 43(36.4%) were booked. Regarding causes of PPH, most common cause was uterine atony in 76(64.4%) cases, followed by perineal and vaginal tears in 41(34.7%) patients and prolonged labor in 29(24.5%). Uterine massage was done in 76(64.4%) patients, B-Lynch sutures were applied in 6(5%) cases and hysterectomy done in 4(3.3%) patients.*

Conclusions — *Majority of patients developed primary PPH and the commonest cause was uterine atony. PPH was commonly seen in unbooked patients, induced/ augmented labor and grand multiparous women.*

Key words — *Postpartum hemorrhage, Uterine atony, Oxytocics.*

INTRODUCTION:

Postpartum hemorrhage is a life threatening situation and an obstetrician's nightmare.[1] It remains a major cause of maternal morbidity and mortality worldwide. It is still an important issue in the developing world.[2] About 13% of all deliveries may result in PPH with a blood loss of more than one litre while life-threatening hemorrhage occurs 1 in 1000 deliveries.[3] There are 600,000 maternal deaths reported worldwide every year and 99% of these occur in developing countries.[4] Around 25% of deaths in developing world are due to PPH. The prevalence of PPH in Pakistan is 34%.[5] Uterine atony is the most common cause of PPH, in about 75-90% of cases. Other causes include placenta previa, accreta, lower genital tract laceration, coagulopathy, uterine inversion and ruptured uterus.

In Pakistan, about 90-95% of deliveries are conducted by traditional birth attendants (TBAS), who provide some antenatal and intranatal care but postpartum care is virtually absent. So, when the mothers develop some

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postpartum complications, they are brought to the hospital in a moribund state. This fact was highlighted in various studies done on maternal mortality in Pakistan.[6] As the PPH have grave consequences, identification of risk factors and early referral to the hospital with necessary management facilities is necessary.

Oxytocin, syntometrine, ergometrine, PGF2 alpha and misoprostol are different medical preparations used as uterotonics for prophylaxis and therapeutic management of PPH. The two main aspects of management of PPH are resuscitation and identification/management of underlying cause. Interventions like application of compression sutures, internal iliac artery ligation, uterine artery embolization and hystrectomy are other life saving measures. Objectives of this study were to determine the frequency, causes of PPH and various treatment methods used in our setup.

PATIENTS AND METHODS:

This descriptive study was conducted in the Department of Obstetrics and Gynecology at LUMHS Hyderabad from June 2007 to April 2008. Inclusion criteria were all women admitted with or who developed PPH in hospital after delivery or cesarean section. Exclusion criteria were patients with history of bleeding disorders and those on heparin/warfarine. All patients were analyzed for age, parity, socioeconomic status, distance from hospital and transport facility. Details of risk factors including grand multiparty, polyhydramnios, multiple pregnancy, induction/augmentation of labor, prolonged labor, chorioamnionitis, previous history of PPH, cesarean section, precipitate labor and instrumental delivery were recorded in a proforma. Assessment of general health including anemia, blood pressure, abdominal and pelvic examination and laboratory investigations were done. Deliveries conducted by traditional birth attendants, lady health workers and doctors were also evaluated.

Management including resuscitation, uterine massage use of oxytocic agents, prostaglandins, minor surgical procedures and major surgical interventions were determined. Hemoglobin estimation and number of transfusions given were also noted. Results were analyzed through computer software program SPSS version 11 and percentages were used to describe the results.

RESULTS:

Total obstetric admissions during the study period were 1231. Out of these, 118(9.5%) patients had PPH. Of these 118 patients, 98(83%) had primary PPH while 20(16.9%) had secondary PPH. Fourteen (11.8%) patients were less than 20 years of age, 38(32.2%) patients belonged to age group of 20-30 years, 44(37.2%) patients belonged to 31-40 year age group while 22 (18.6%) patients were more than 41 years of age. Eighteen (15.2%) patients were primiparas, 31(26.2%) were multipara while 69(58.4%) patients were grand multiparas. Seventy-five (63.5%) patients were unbooked while 43(36.4%) were booked. Regarding socioeconomic condition, 64(54.2%) patients belonged to poor class, 36(30.5%) patients belonged to middle class while 18(15.2%) patients were of upper class.

Thirty eight (32.2%) patients delivered at home, 34(28.8%) delivered in private maternity homes and 46(38.9%) in hospital (study place). Out of 118 patients who developed PPH, 34(28.8%) were delivered by spontaneous vaginal delivery (SVD), 39(33%) by instrumental delivery while 45(38.1%) were delivered by cesarean section.

Thirty five (29.6%) deliveries were conducted by TBAS, 37(31.3%) by LHV/midwives, 32(27.1%) by doctors and 14(11.8%) by obstetricians. Labor was induced in 47(39.8%) patients, augmented in 38(32.2%) while it was spontaneous in 33(27.9%) patients who developed PPH. Regarding causes of PPH, most common cause was uterine atony found in 76(64.4%) cases, followed by perineal and vaginal tears in 41(34.7%) and prolonged labor in 29(24.5% - table 1).

Blood pressure was un-recordable in 15 (12.7 %) patients. Systolic B.P was below 80 mmHg in 21 (17.7%) and above 100 mmHg in 82 (69.4 %) patients. Hemoglobin level was between 8-10gm/dl in 101(85.5 %) patients. Blood transfusion was done in all cases. Uterine massage was done in 76(64.4%) patients, B-Lynch sutures were applied in 6(5%) cases and hysterectomy was done in 4(3.3%) patients (table 2).

Table: 1. Causes Of PPH (n= 118)

Causes	Frequency	Percentage
Retained placenta	09	7.6
Uterine atony	76	64.4
Retained Products of conception	05	4.2
Perineal/vaginal tears	41	34.7
Vulval hematoma	02	1.6
Inversion of uterus	01	0.8
Morbidly adherent placenta	01	0.8
Disseminated Intravascular Coagulation	04	3.3
Ruptured uterus	02	1.6
Prolonged labor	29	24.5

Table: 2 Management of PPH (n = 118)		
Treatment	Frequency	Percentage
Misoprostol	61	51.6
Oxytocics (Others)	76	64.4
PGF2 Alpha	6	5
Uterine massage	76	64.4
Manual removal of placenta	9	7.6
Repair of tears	41	34.7
Drainage of vulval hematoma	2	1.6
Uterine packing	3	2.5
B-Lynch suture	6	5
Manual correction of uterine inversion	1	0.8
Fresh Frozen Plasma	4	3.3
Hysterectomy	4	3.3

DISCUSSION:

PPH is the most common cause of maternal morbidity and mortality and accounts for 25% of all maternal deaths worldwide. Majority of these deaths (88%) occur within first four hours of delivery due to events in the third stage of labor. The frequency of PPH in our study was 9.5%. A study from China revealed that 6% women had postpartum complications and most of them occurred just after the birth of the baby.[7] The rate of primary PPH varies from 2-8%.[8] Active management of third stage of labor can prevent PPH effectively. A review has shown that the risk of PPH can be reduced by 40% with the use of oxytocics. [9]

In our study majority of the patients who developed PPH were unbooked and 63.5 % cases had come after delivery. Important preventive measure therefore is the identification of cases at risk of developing PPH during labor by experienced persons and active management of third stage. This probably was lacking in our series. Active management of third stage of labor is the key to reducing incidence of PPH due to uterine atony.[10] Early oxytocic therapy reduces the incidence and severity of PPH by 40% and postpartum anemia and the need for blood transfusion as well.[11-13] This method is far from ideal in low resource setup where births are supervised by TBAS away from hospital. Misoprostol 800 micrograms per rectally is valuable in the treatment of PPH in low resource setups because of its low cost and easy storage.[14] Pakistani data showed uterine atony as a major cause of PPH in a recently conducted study where 48% of PPH cases responded to rectal misoprostol in the first 30 minutes and it had fewer side effects.[15]

In our study grandmultiparity, prolonged active labor, twin delivery and instrumental delivery were significant risk factors for the development of PPH from any cause. These results matched that of the other studies.[16] Uterine atony is responsible for up to 80% of primary PPH.[17] In an Irish study, 76% of massive PPH were due to uterine atony,[18] while an Indian study showed 17.5% of PPH related maternal deaths were due to uterine atony.[19]

Ruptured uterus and lower genital tract trauma during delivery were found in 36.3 % of cases. Prolonged labor, obstructed labor and its sequele ruptured uterus and uterine atony are common in poor unhealthy and malnourished women who deliver away from health facility. Delivery in a well-staffed and well supplied medical facility prevent delay in recognition of complications, delay in transportation and delay in receiving adequate comprehensive care.[20]

To avoid maternal morbidity and mortality, it is essential to find out the avoidable factors responsible for the development of PPH and their consequences. The two vital role players in this context are standard antenatal care and skilled birth attendants.[21,22] Despite the fact that good antenatal care helps recognizing risk factors for development of PPH and also in time diagnosis of preexisting health problems, it is still being observed in many studies that even with the recognition and proper management of risk factors, PPH cannot be prevented in most of the cases.[23] However, properly organized antenatal visits provide an opportunity to educate the women regarding the importance of skilled birth attendant and better utilization of emergency obstetric services. In an other study majority (68%) of deliveries were conducted in the hospital with strict protocol for active management of third stage of labor but still in 30% of cases mismanagement of labor at all stages was noticed.[24] This observation demonstrates the importance of improving hospital system with the availability of standard and accessible emergency obstetrical service and regular training of staff. [25]

CONCLUSIONS:

Majority of patients developed primary PPH and the commonest cause was uterine atony. PPH was commonly seen in unbooked patients, induced/ augmented labor and grandmultiparous women. PPH can be prevented by avoiding unnecessary induction/ augmentation, risk factor assessment and active management of third stage of labour. PPH is serious obstetrical emergency. It is necessary to take the preventable measures and in case of lack of facilities, timely referral to appropriate health facility is necessary.

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