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POSTPARTUM HEMMORHAGE: IN A RURAL SET UPAT PMC HOSPITAL NAWABSHAH.

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ABSTRACT:

OBJECTIVE:*To determine the frequency, risk factors and causes of postpartum hemorrhage in a rural setup.*
STUDY DESIGN: *Descriptive study.*
STUDY PERIOD: *One year from January 2006 to December 2006.*
SETTING:*The study was conducted in the Department of Obstetrics & Gynaecology at Peoples Medical College & Hospital Nawabshah.*
PATIENTS & METHODS:*Clinical study of women admitted with or developed PPH in hospital after vaginal or cesarean delivery, keeping in view their age, parity, booking status, mode, type and place of delivery. The efficacy of obstetric care was assessed by maternal morbidity and mortality related to PPH and its treatment.*
RESULTS: *During the study period 192(15.40%) patients presented with postpartum hemorrhage. Out of 192 patients with PPH 130 (67.7 %) were un-booked cases. Risk factors identified were advanced maternal age, grand multiparity, anemia, ante partum hemorrhage, prolong/obstructed labor and previous cesarean section. Most common cause of PPH was uterine atony in 103 (53.64 %) cases, followed by genital tract trauma in 67 (34.89 %) patients, retained products of conception in 11(5.72%) cases, retained placenta in 7 (3.64 %) patients, DIC in 03(1.56%) patients and uterine inversion in 01 (0.25 %) patient. Uterine massage was successful in 30(15.62%) patients, uterine temponade by packing was done in 31 (61.14 %) patients and by Foley's balloon catheter in 09(4.68%) patients, simple repair of genital tract injuries were performed in 39 (21.31 %) patients. Obstetrical hysterectomies accounts for 38 (19.79 %) of cases. During study period, 45 maternal deaths occurred and PPH accounted for 08(17.17%) of it.*
CONCLUSION:*Most deaths could have been prevented by prompt treatment of obstetric emergency at the peripheral level & by early referral of the patients at tertiary care units, ensuring timely intervention.*

KEYWORD: Postpartum hemorrhage, Maternal morbidity, Mortality.

INTRODUCTION

Postpartum hemorrhage (PPH) is a sudden, potentially life threatening event, unusual and frequently unpredictable in its occurrence, kills a women within hours[1].This is one of the challenging complications which a clinician can face and has been a nightmare for obstetricians since centuries[2,3]. About 13% of all deliveries may result in PPH with a blood loss of more than one liter while life-threatening hemorrhage occurs 1 in 1000 deliveries[4]. PPH accounts for one quarter of all maternal deaths worldwide. In developing countries PPH continues to be a leading cause accounting for 24 % to 43 % of maternal deaths[5]. In Pakistan 25,000 to 30,000 women die each year due to pregnancy and childbirth related complications and PPH contributes its major share[6].

The consequences of PPH depend upon the differing capacities of individual pregnant woman to cope with blood loss. A healthy woman has 30 – 50 % increase in blood volume in a normal pregnancy and is much more tolerant to hemorrhage than a woman who has pre-existing anemia, short stature, an underlying cardiac disease or volume contracted conditions secondary to dehydration or preeclampsia[7]. In our rural setup in Pakistan, most women often become pregnant without planning in a less than ideal nutritional state, the majority of deliveries occur at home under the supervision of traditional birth attendants or "dias" who provides some antenatal and intranatal care but postpartum care is virtually absent. Most rural areas lack emergency obstetric care facilities. Poor transportation and lack of financial resources further complicate matters. So, when the mothers develop some

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[6,8]. As the PPH has grave consequences, so prevention, early recognition, prompt and appropriate intervention are the keys to minimize its impact. It is preventable melody under ideal circumstances like identification of high risk pregnant woman, active management of 3rd stage of labour, early detection of problem and its appropriate management[9]. This study was conducted to evaluate the frequency, risk factors and causes associated with PPH in a rural setup.

MATERIAL AND METHODS

This descriptive study was conducted from January 2006 to December 2006 in the Department of Obstetrics & Gynaecology at peoples Medical College Hospital Nawabshah. Nawabshah Medical College and Hospital is a tertiary care hospital and having a single Obstetrics & Gyecology unit. During the study period, 192 patients were recruited who presented to labour ward with postpartum hemorrhage or developed it when delivered at PMCH. Exclusion criteria were patients with history of bleeding disorders and those on heparin/warfarin therapy. The information recorded on `risk factors including age, parity, booking status, multiple pregnancy, polyhydramnias, prolong/ obstructed labor, induction/ augmentation of labor, ante partum hemorrhage, cesarean section and previous history of PPH. Assessment of general health including anemia, blood pressure, abdominal and pelvic examination and laboratory investigation were done. Analysis done on the causes of PPH, medical and surgical interventions. In referred cases, PPH was diagnosed by history of profuse vaginal bleeding after delivery, or deteriorating condition and need for blood transfusion. Once the patient was diagnosed to be in PPH, management includes resuscitation, in cases of uterine atony; uterine massage, use of oxytocic agents and prostaglandins. Intrauterine temponade done in patients with failed medical treatment. Appropriate management of genital tract trauma, retained products of conception, DIC and reposition of uterine inversion. Hysterectomy proceeded in patients failed to give response to above mentioned measures. Hemoglobin estimation and number of blood transfusions given were also noted. An efficacy of the obstetrics care was assessed by maternal morbidity and mortality related to PPH and its treatment.

Data was analysed by using SPSS version -10 on computer. Catagorical variables like parity, anemia etc were analyzed as frequencies. Continuous variables like age, blood pressure and hemoglobin were computed as Mean and SD. Statistical test of significance were not be applicable for this descriptive study.

TABLE-I:
RISK FACTORS FOR PPH

Characteristic	Frequency(n=192)	Percentage
AGE		
16-19YEARS	15	7.81%
20 – 25 Years	38	19.79%
26 – 34 Years	50	26.10 %
35 – Above Years	89	46.30 %
PARITY		
0 – 1	38	19.79 %
2 – 4	74	38.54 %
5 and Above	80	41.66 %
BOOKING STATUS		
Booked	62	32.30 %
Un-booked	130	67.70 %
Referred	120	62.50 %
OTHER RISK FACTORS		
Cesarean Sections	30	15.62%
Placenta previa	17	08.85 %
Polyhydramnias	13	06.77 %
Multiple Pregnancy	10	05.20 %
Prolonged Labor	10	05.20 %
Obstructed Labor	07	03.64 %
Abruptio Placenta	06	03.12 %

RESULTS

During the study period total number of obstetric admissions were 2957. Out of these, 192 (15.40%) patients had postpartum hemorhage. Risk factors association shows that, advance maternal age 35 years and above is associated with progressively elevated risk of PPH 89(46.30 %), mean age recorded were 31.69±7.36 years ranged minimum 16 years and maximum 42 years, relation to parity shows that high proportion of patients with PPH were grand multiparous 80(41.66 %), lack of antenatal were found in 130(67.70%) patients. Other risk factors identified were previous cesarean sections in 25(13.02%) patients, placenta previa in 17 (08.85%) patients amongst them 03 (1.56%) patients had morbidly adherent placenta,

polyhydramnias in 13(6.77 %) patients,

prolonged labor in 10(5.20 %) patients obstructed labor in 7(3.64 %) patients, multiple pregnancy in 10(5.20 %) patient and abruptio placenta in 6 (3.12 %) patients (Table1).

Regarding place of delivery, 55(28.64 %) patients delivered at home, 50(26.04%) patients delivered at private hospitals and 87(45.31%) patients delivered at PMC hospital Nawabshah (study place). Regarding other characteristics, 109 (56.77 %) delivered vaginally and 83 (43.23 %) patients were delivered through cesarean sections. Sixty two (32.29%) deliveries were conducted by TBAS, 55(28.64%) by LHV/ Midwives, 58(26.10%) by doctors and 29 (13.10%) by obstetricians.

Commonest cause of PPH was uterine atony found in 103 (53.64 %) cases followed by genital tract trauma in 67 (34.89 %) patients amongst them 31(16.14%) patients had upper genital tract trauma including uterine rupture in 8(4.16%) and scar dehiscence in 22(11.45%) patients, thirty six (18.75%) patients had lower genital tract trauma including cervical tears in 28(14.58%) cases amongst them one patient had cervical tear extending to uterus and perineal/ vaginal tears/hematoma in 08 (4.16%) patients. RPOCs were found in 11 (5.72 %) cases, retained placenta in 7 (3.64 %) cases, DIC in 03 (1.56 %) and 01 (0.25 %) patient had uterine inversion (Table-II).Blood pressure was un-recordable in 20(10.41%) patients with a mean of 78.64±32.07mmhg, ranged minimum 0mmhg to maximum 140mmhg.

Regarding treatment modalities, majority responded to conservative medical and surgical treatment and required more than one measures. Uterine massage was done and 10 units intravenous oxytocin was given to all patients with uterine atony. Thirty (15.62 %) patients were managed by uterine massage+ oxytocin infusion, in 23 (11.97 %) cases PPH managed by doing bimanual uterine compression and by giving tablet misoprostol 1000 mg (5 cytotec tablets) per rectally amongst them 04(2.08%) patients also required prostin F2 alpha. Uterine temponade by uterine packing was done in 31(16.14%) cases and with Foley's no:24 catheter performed in 09 (4.68 %) patients, simple repair of genital tract injuries done in 39 (21.31 %) patients, seven (3.64 %) cases require manual removal of placenta, evacuation of RPOCs was done in 11 (5.72 %) patients, three (1.56%) patients required fresh frozen plasma and reposition of uterine inversion done manually in 01 (0.25%) patient. Blood transfusion was done in all cases. Peripartum hysterectomy was performed in 38 (19.79 %) patients. Hysterectomy was preferred over vascular ligature as most of the time patients were in shocked state and operator in expertise was also a factor (Table-III).

Considering the maternal morbidity and mortality due to PPH, anemia was found in 150 (78.12%) patients, mean hemoglobin recorded was 7.20±2.4gm/dl ranged minimum 2gm/dl to maximum 11gm/dl, postpartum paralytic ileus in 15 (7.81 %) patients, puerperal fever due to pelvic infection in 11(5.72 %) patients, chest infection in 10 (5.20 %) patients, renal failure in 3 (1.56 %) patients and forty nine (25.52%) patients

TABLE-II:
CAUSES OF PPH (N= 192)

Causes	Frequency	Percentage
Uterine atony	103	53.64 %
Ruptured uterus	08	4.16 %
Scar dehiscence	22	11.45 %
Cervical tears	28	14.58 %
Perineal/Vaginal tears/hematoma	08	4.16 %
Retained products of conception	11	5.72%
Retained placenta	07	03.64%
Disseminated Intravascular Coagulation	03	1.56%
Inversion of uterus	01	0.25%

TABLE-III:
TREATMENT MODALITIES (N=192)

Treatment	Frequency	Percentage
Uterine massage+Oxytocin infusion	30	15.62 %
Bimanual uterine compression + Misoprostol per rectally	23	11.97%
Prostin f2 alpha	4	2.08 %
Intrauterine packing	31	16.14 %
Intrauterine foley's balloon temponade	09	4.68%
Repair of genital tract injuries	39	21.31%
Manual evacuation of RPOCs	11	5.72%
Manual removal of placenta	07	03.64 %
Fresh frozen plasma	03	2.56%
Manual correction of uterine inversion	01	0.25%
Hysterectomy	38	19.79%

required ICU care. During the study period, 45 maternal deaths occurred and PPH accounted for 08 (17.77 %) of it (Table-1V).

TABLE-IV:
MATERNAL MORBIDITY AND MORTALITY DUE TO PPH

MORBIDUTY/MORTALITY	No. of Patients	Percentage
Anemia	105	78.12 %
Postoperative paralytic illeus	15	07.81 %
Puerperal fever due to pelvic infection	11	05.72 %
Chest infection	10	05.20 %
Renal failure	03	01.56 %
ICU Care	49	25.52 %
Maternal Death	08	17.17 %

Mean hemoglobin (Mean±SD): 7.20±2.4gm/dl

DISCUSSION

Maternal mortality has been used traditionally as a measure of quality of healthcare. However, maternal morbidity has been taken into account to assist the burden of the disease. Postpartum hemorrhage (PPH) is the most common cause of maternal mortality and accounts for one quarter of maternal deaths worldwide[10]. Ninety nine percentages of maternal deaths occur in developing countries that have an inadequate transport system, limited access to skilled care givers and poor emergency obstetric services[11]. The rate of primary PPH varies from 2-8%[12]. The prevalence of PPH in our study was 15.54%. According to WHO this was found 34% in Pakistan[10]. Our women are poor, powerless and pregnant without planning in less than ideal nutritional state. The majority of deliveries occurs at home and supervised by unskilled TBAS away from hospital. Most rural areas lack emergency obstetric care facilities. The majority of our Basic Health Units (BHUs) and Rural Health Centers (RHCs) are not functional.

Present study shows an association of PPH with advanced maternal age, grand multiparity and lack of antenatal care. In addition to the risk factors cited above, anemia, APH, previous c/section, prolonged/ obstructed labour, polyhydramnios and deliveries by untrained persons have been associated with PPH. This is also comparable with other studies[7,13]. Un-booked status of the mother seriously affects the obstetrical performance as the clinicians are unaware of risk factors but antenatal care alone is insufficient to prevent maternal death due to PPH. It is the affective intranatal care at all levels of healthcare system which will greatly reduce maternal death[14]. Some studies shows that the prediction of PPH by antenatal risk assessment is poor (40%), two thirds of women who develop PPH have no identifiable clinical risks factor, even with recognition and proper management of risk factors, PPH can not be prevented in most of the cases[15,16].

The present study found that the uterine atony 53.64% was the most common cause of PPH. Uterine atony is responsible for up to 80% of primary PPH[15]. Different studies from different countries also shows that uterine atony is the commonest cause of PPH[7,17]. Ruptured uterus 4.16%, scar dehiscence11.45% and lower genital tract trauma during delivery were found in 18.78%. Prolong labor, obstructed labor and its sequele ruptured uterus and uterine atony is common in poor unhealthy and malnourished women who deliver away from health facility. Lack of financial resources, delay in transportation, delay in recognition and receiving comprehensive care further complicate matters[18].

In the present study nearly 80 % patients responded to conservative medical and surgical measures, obstetrical hysterectomy was required in 19.79 % patients. The incidence of peripartum hysterectomy reported in literature varies from 7 – 13 per 10000 births[19,20]. In our setting, majority of patients come in extremist with marked anemia and severe infection, alongwith substandard care, hysterectomy is an only resort to save their lives. Although peripartum hysterectomy is associated with increased operative, psychological and menopausal morbidity but for PPH, it remains a potentially life saving procedure in unavoidable catastrophes[21].

Apparently two third of obstetrical morbidity is related to obstetrical hemorrhage[22].Studies shows that PPH increases the risk of maternal morbidity 50 times and has nearly 5 times higher morbidity than mortality[23]. WHO estimates that 20 million maternal morbidities results annually form PPH, a cause of great physical and mental suffering[24]. Anemia was the commonest maternal morbidity 78.12 % found in the present study correlates with the study by Chohan A, Ansari A[25]. Also comparison reveals that referred cases had significantly more maternal morbidity, this reveals that morbidity parameter is much more sensitive and should be incorporated in clinical review to evaluate the actual burden of the problem and find better and effective management strategies for prevention from its long standing and debilitating consequences.

About 60 women die of pregnancy related complications in our country every day. Hemorrhage is still the leading cause of maternal death. MMR in Pakistan is estimated to be 340-400 per 100,000 births, which means 1 in every 31 women dies of pregnancy related problems[26]. During the study period forty five maternal deaths occurred and PPH accounts for 08(17.77%) of it. Death due to PPH is reported to represented between 17% & 40% of maternal mortality in some parts of the world[27,28]. It was found 11.7 % in one study[2]. PPH still ranks high as a cause of maternal death in developing countries like us and it is the greatest neglected problem of healthcare. Similar conclusion has also been reached with other studies[29]. In our study out of 08 maternal deaths, 07 (87.5%) of them were referred cases (03 being referred from hospitals and 02 from maternity homes and 02 by dias), 05(62.5%) of them were received in a state of shock, 01(12.5%) patients were received in gasping state and 02 (25%) were unconscious, 03 (37.5%) being referred undelivered with severe APH. The youngest mortality occurred in patient of 18 years of age and eldest was 42 years, rest of them ranges b/w 25-40 years. Most of them were multipara and two were primipara delivered vaginally, 07 of the patients were severally anemic. O5 of them were delivered at study place, 04 by emergency cesarean sections, 02 of them due to severe abuption with disseminated intravascular coagulopathy and 01 due to morbidily adherent placenta previa

and another one due to hand prolapse and one patient was delivered vaginally developed vaginal hematoma, collapsed and went into DIC. Remaining of 03 patients came delivered, 01 had cesarean section and 02 had vaginal deliveries. Uterine atony was the cause in 06patients and 01 patient had cervical tear extended up to uterus with multiple vaginal and perineal tears, 03 patients expired due to severe disseminated intravascular coagulopathy following hypovolumic shock. Seven patients were shifted to Surgical ICU for further management, while 01 patient expired prior to shifting to Surgical ICU.

There is a global commitment to the Millennium Development Goal (MDG) of reducing maternal deaths by three-quarters by the year 2015, a commitment that requires a reduction of the maternal mortality ratio by 5.5% each year[30]. To avoid maternal morbidity and mortality, it is essential to find out the avoidable factors responsible for the development of PPH and their consequences. Greater attention needs to be directed to preventive measures that may be adopted, and practiced by obstetricians. They could help to propagate these amongst other health professionals and TBAS[31].

CONCLUSION

PPH is still a challenging and serious problem in spite of marked improvement in management, remains significant contributor to maternal morbidity and mortality. The commonest cause of PPH was found uterine atony. PPH was commonly seen in unbooked, anemic, older multi parous patients, women having cesarean section, antepartum hemmorhage and prolong/ obstructed labor delivering away from the health facility. Most deaths could have been prevented by prompt treatment of obstetric emergency at the peripheral level & by early referral of the patients at tertiary care units, ensuring timely intervention.

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