MEDICAL CHANNEL

Original Article

FACTORS ASSOCIATED WITH PRIMARY POST PARTUM HAEMORRHAGE

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ABSTRACT:

Objective:
To identify the factors leading to primary PPH.
To evaluate the maternal outcome in cases of primary PPH.
Study duration: Study duration was one year from 15th January 2007 till 14th January 2008.
Study design: The study design was descriptive case series study.
Setting: Indoor patients were taken for sampling and the study was conducted at labour room of Obstetrics and Gynaecology Department, Shaikh Zaid Women Hospital (SZWH) Unit-II Larkana
Subjects: 100 patients were with excessive vaginal bleeding or patients with retained placenta or placental pieces along with excessive bleeding present within 24 hours were included in the study over the span of one year.
Methods: Patients were admitted through labour room of Unit-II Obstetrics and Gynecology Department, SZWH, Larkana, detailed history was taken and physical examination, per abdominal and per vaginal examination was done with base line investigations as hemoglobin percentage complete blood count, blood grouping and cross matching was done and coagulation profile was requested in selected cases.
Results: A total of 100 women with primary postpartum hemorrhage (PPH) were included in this study. The average age of the patients was 32.22 ± 5.35 years, ninety five percent patients were not booked, 41% women had grand multi-parity followed by multipariy, retained placenta 20%, prolong labour 15%, uterine rupture 11%, vulvovaginal injuries in 6% of cases, while previous PPH, adherent placenta deranged coagulation profile found in 3% of cases, followed by 2% in abruption placenta and sepsis. Most common cause found is uterine atony 67%, retained placenta 20% followed by cervical laceration 16%, vaginal tear 8%, and extension of caesarean scar 4%.
Conclusion: Postpartum haemorrhage is a serious obstetrical emergency having unpredictable and dreadful consequences. This complication can be prevented by identification of risk factors and skillful birth attendant at the time of delivery; preventive measures are taken and, timely referral of these cases to appropriate health facility.

Key words: Post partum haemorrhage, grand multi-parity, retained placenta, prolong labour uterine atony, cervical and vaginal tear.

INTRODUCTION:

Post partum haemorrhage is one of the major causes of maternal morbidity and mortality world wide[1-5] .post partum haemorrhage (PPH) occurs in 5% of all deliveries and post partum, accounts for approximately 25% of maternal death globally [3]. It carries a case fatality rate of 1% [6].
It is estimated that about 500,000 mothers die annually worldwide or 1600 maternal death per day or about one maternal death per minute[7].
Majority of these deaths occur in developing countries (99%) and the status of maternal

health is in Pakistan is no different; an estimated 340/100,000 live births occur in Pakistan, stated by WHO/UNICEF[4].

There is no single satisfactory definition of PPH[6]. A blood loss up to 500ml at delivery is regarded physiological normal[1] .Owing to relatively low risk with this level of blood loss and lesser clinical relevance, a newer definition of PPH introduced state the loss to be more than 1000ml or 1500ml of blood. Since estimation of blood loss is subjective. Severe haemorrhage has been defined as estimated blood loss>1500ml, peripartum fall in hemoglobin concentration >4gdl or acute transfusion of 4 or more units of blood[1].

The PPH is classified as primary PPH occur within first 24 hours after delivery, and secondary PPH occur between 24 h and 6-12 weeks post partum[7]. A multitude of factors predispose to primary post partum haemorrhage, including uterine atony, general anesthesia, prolonged labour, PIH etc. In Pakistan, the most common risk factors stated are prolonged labor, multi-parity, previous 3rd stage abnormalities, PIH, and abruption placenta traumatic lesions etc[6]. Since most of studies conducted in large cosmopolitan cities, and there is lack of data from less developed part of country Larkana being one. So the present study is being proposed to gain insight into the phenomenon and use the ensuing information for better management of patients.

MATERIALS AND METHODS:

A written informed consent was obtained before enrolling the patient for study, a printed questionnaire was filled in and included patients' demographic characteristics, medical history, prior hospital admissions.

This prospective descriptive case series of one year (15th January 2007 to 14th January 2008) was carried out at Obstetrics and Gynaecology Department of Shaikh Zaid Women Hospital (SZWH) unit-II Larkana. In the period under review, all the patients with excessive vaginal bleeding and/or patients with retained placenta or placental pieces, presenting within 24 hours of delivery were included in the study. A written informed consent was obtained before enrolling the patient for study; a printed Performa was filled in, and included patients' demographic characteristics, detailed medical history. General physical, per abdominal and per vaginal examinations were done in all patients, base line investigations like complete blood count, blood grouping and cross matching, serum electrolytes and urine DR were done in all patients and coagulation profile was requested in selected cases, blood loss was estimated both objectively and subjectively i.e. any amount of blood loss following birth that adversely affected the mother, as well as loss > 500 ml in vaginal and > 1000 ml during cesarean section estimated from the use of sponges and blood in suction Machine.

SPSS-13 was used to analyze data.

TABLE 1: MODE OF DELIVERY:

Mode of delivery	No of cases
Vaginal Route	78
SVD	75
Instrumental	3
Abdominal	22

RESULTS:

A total of 100 women met the inclusion criteria and were included in this study. Majority of the patients were between 26 to 35 years of age with mean age of 32.5 ± 5.3 years. Only 5% of these patients were booked and received ANC. 41% women had grand multiparity (parity > 5) 33% had multiparty (parity 2 to 4) and 26% were primipara.

A total of 78% women had vaginal route delivery in which spontaneous vaginal deliveries were observed in 75% women and 3% needed instrumentation while 22% underwent abdominal route (caesarian section) as shown in table 1.

51% of these patients had H/o delivery at home by Dai/ traditional birth attendants (TBA) and were brought to hospital later when they developed PPH, 46% patients were delivered by doctors or lady health worker, 3% women delivered on the way to hospital. Twin pregnancy was observed in 3% cases, 93% babies were alive and 7% were intrauterine death.

Multitude of risk factors leading to primary post partum hemorrhage (PPH) were identified and presented in table 2. Atony of uterus was identified as the most common factor of PPH found in 67% women followed by grand multiparity in 41%, retained placenta in 20%, cervical tear in16%. While twin pregnancies, inversion of uterus, extension of cesarean incision, previous PPH, abruption

TABLE 2: RISK FACTORS LEADING TO PPH

NO:	RISK FACTORS	NO: OF CASES
1.	Uterine Atony	67
2.	Grand Multiparity (Para 5 or more)	41
3.	Retained Placenta	20
4.	Cervical Tear or laceration	16
5.	Prolonged Labor	15
6.	Uterine Rupture	11
7.	Retained product of conception	10
8.	Vaginal Tear	08
9.	Fetal Intra Uterine Death	07
10.	Vulvovaginal Injuries	06
11.	Extension of Cesarean Incision	04
12.	Bleeding from placental bed	04
13.	Placenta previa	04
14.	Adherent placenta	04
15.	General Anesthesia	04
16.	Coagulation Profile (Deranged)	04
17.	Twin Pregnancies	03
18.	Previous PPH	03
19.	Polyhydramnios	02
20.	Abruption Placenta	02
21.	Inversion of Uterus	02
22.	sepsis	02
23.	Uterine Abnormalities	01
24.	No risk factor	01

TABLE 3: ESTIMATED BLOOD LOSS

Blood Loss	Percentage
< 2000 ml	50%
2000 to 2500 ml	40%
>2500 ml	10%

TABLE 4: MATERNAL OUTCOME

No:	Maternal Outcomes	Percentage
1.	Anemia	100%
2.	Blood Transfusion	99%
3.	Hypovolumic shock	56%
4.	Hysterectomy	
5.	Total	1%
6.	Subtotal	2%
7.	Caesarian hysterectomy	3%
8.	Puerperal Sepsis	4%
9.	Acute Renal Failure	4%
10.	Disseminated intravascular Coagulation	02%
11.	Failure to Lactate	1%

placenta, placenta-previa vulvovaginal injuries, uterine abnormalities, polyhydramnios, general anesthesia, sepsis, bleeding disorder, and deranged coagulation profile were found to be less common causes.

Blood loss estimation is shown in Table 3 and maternal outcome in Table 4.

Hypovolumic shock was observed in 56% cases. On clinical and laboratory investigations, all 100 patients were found to be anemic, and 99% required blood transfusion, while Hysterectomy was done in 6% cases as a life saving procedure. Postoperatively, puerperal sepsis and acute renal failure were found to be the most common complications, 4% each, failure to lactate in 1% cases. Maternal mortality was calculated to be 4%. Death occurred within 30 min of admission in 2 patients one due to DIC and another due to cervical and high vaginal tears, while other two survived for 48 hrs only.

DISCUSSION:

Severe PPH is stated to be the most prevalent cause of mortality worldwide [8], and has been estimated to increase the risk of morbidity fifty times.[9]

The age of patients presenting with PPH was found to be 32±5 years, which is lower as compared to international figures stating it to be over 35 years[10], the differences can be attributed to socio-cultural factors like early age at marriage, early gravidity and parity, and multiparity. In this study 41% patients were grand multiparous. As majority of patients are of lower socioeconomic status, and delivered away from health facility, by a TBA, and are only brought to the hospital when they develop complications like prolonged labor, twin pregnancy or hypertension, which on their own are the risk factors for uterine atony. Uterine atony was found in to be the most common factor predisposing to PPH, observed in 67% patients in this study, which is quite comparable to studies carried out locally and internationally, stating it to range between 59-77%.[11,12]

Worldwide Traumatic lesions are the second leading cause of PPH usually found in 9-33%[11,12] cases which is consistent with this study, where vaginal, cervical and perineal tears were found in 16%, 8%, and 6% cases respectively, and 30% cumulatively. Retained placenta was found in 20% patients in this study, which is lower than reports from Rawalpindi Pakistan (27%) and Quetta Pakistan (37%) and much higher than international literature, which reports it to be 5-10%.[13, 14] This increase can probably due to referral bias, as majority of cases are referred after complicated deliveries at home or at private clinics as no case of retained placenta was found in hospital deliveries in this study.

Prolong labour is another risk factor identified in 15% cases in this study, which is less than other studies carried out in Pakistan.[13,15]

Uterine rupture occurred in 11 cases in this study, of which 7 patients had history of previous one or two caesarean section, while 4 had history of injudicious use of oxytocin and were multiparous.

The most important factor leading to spontaneous uterine rupture is obstructed labor, which is more common in developing countries where women routinely deliver at home without the benefit of the presence of trained health-care providers, due to poverty and social factors[16] but in this study uterine rupture was also noticed in patients with previous caesarean section indicating that previous C/S is an equally important factor that could predisposes to PPH. All these factors predisposing to PPH are preventable and the key being standard antenatal care and skilled birth attendance. A good and properly organized antenatal care can not only recognize the risk factors for PPH (e.g. twin pregnancy, Hypertension, previous c/section and previous history of PPH) can also identify pre-existing health problems like anemia or cardiac disease, which may render woman more susceptible to dreadful consequences of PPH. But despite this fact 95% women did not receive any antenatal care. Furthermore all 100 patients were anemic, and 13% patients were severely anemic. Anemia is a one of the major risk factor for PPH[17], and the high frequency of maternal anemia in this study is reflective of underlying chronic nutritional deficit a persistent problem in our country.

Mode of delivery is an important factor predisposing to PPH. Some authors suggest that the risk of PPH increases with Caesarean and operative vaginal deliveries; while other are of view that caesarean section reduces the risk of PPH in high risk women[15]. As the frequency of vaginal delivery in this study is greater when compared to caesarean section, and lack of antenatal care, nothing much can be commented on this.

Another factor which is even more important is the optimum level of care provided during labor and in the immediate post partum period. The active management of third stage of labor is key to reducing incidence of PPH[17], Early oxytocic therapy reduces the incidence and severity of PPH (by 40%) post partum anemia and the need for blood transfusions. Rapid recognition, resuscitation and restoration of circulating blood volume plus simultaneous identification and treatment of the cause play pivotal role in management of PPH. As 50% women in this study were delivered at home by TBA and 3% delivered by LHVs, the level of care provided was suboptimal and presented late with complications like uncontrolled hemorrhage, Hypovolumic shock 56%, ARF 4%, sepsis 4%, DIC 2% etc. greatly increasing morbidity and mortality. These results coincide with that of the MOMA study[15] which stressed on the role of skilled birth attendance to

reduce maternal deaths.

Maternal mortality in this study is 4%, and the mortality worldwide is 11%.[11]

CONCLUSION AND RECOMMENDATIONS:

To conclude Postpartum haemorrhage is a serious obstetrical emergency having unpredictable and dreadful consequences. It can be prevented by early identification of risk factors by proper assessment antenatally, during labor by skilled birth attendance and in early postpartal period by active management of 3rd stage of labor.

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