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PRIMARY POSTPARTUM HEMORRHAGE;
CAUSATIVE FACTORS, TREATMENT OUTCOME AND ITS CONSEQUENCES.

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ABSTRACT... Objectives: To see the changing trends in causative factors and various treatment options in pirmary PPH. **Study Design:** Retrospective study of all the cases who experienced primary postpartum hemorrhage. **Period:** 4 years i.e: June 2013 to June 2017. **Setting:** NESCOM Hospital Islamabad. **Material and Methods:** The sociodemographic characteristics, mode of delivery, antenatal risk factors, causative factors and the treatment received by the patients were extracted from patient's case notes, entered into computer programme SPSS and analysed. **Results:** Total number of cases who went into PPH were 77. Majority of patients were belonging to age group 26-34 years. 50% of patients were multiparous whereas 41% were primiparous and 7.7% were grand multiparous. 66% of patients had caesarean section while 34% were delivered vaginally. Commonly identified risk factor was anaemia as in 19% of cases. Others were high parity 12%, prolong labour 7%, augmented labour 5%, and fetal macrosomia in 7% of cases. No risk factors were identified in 43% of cases. Uterine atony was found to be a major causative factor in 70% of cases and genital tract trauma in 23% of cases. 51.9% of patients were successfully managed with medical treatment. Special feature of the medical treatment was the use of tranexamic acid which added to success rate.48% of patients required surgical intervention. **Conclusion:** It is worthy to note that postpartum hemorrhage can occur in the absence of any identifiable risk factors. Therefore, the anticipation of its occurrence and prompt, adequate, and timely intervention will go a long way in reducing the adverse outcome.

Key words: Primary Postpartum Hemorrhage (PPH), peripartum hysterectomy

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INTRODUCTION

Postpartum hemorrhage accounts for nearly one quarter of all maternal deaths globally and is the leading cause of maternal mortality in developing countries (WHO 2012)[1,6], like Pakistan where 25000 women die of PPH each year. Primary PPH is the hemorrhage occurring within 24 hour postpartum and is defined as blood loss of 500 ml or more. Blood loss is extremely difficult to quantify accurately, and frequently underestimated. Hemodynamic instability is an important part of diagnosis and a smaller blood loss may be significant in a severely compromised woman. Loss of 1000ml or more is considered major or severe, although definitions of severity vary.[2,3] Timely diagnosis, appropriate resources and appropriate management are critical for preventing death. Most women who have post partum hemorrhage have no identifiable risk factors (WHO 2012). However there are factors that might help to identify some women at risk of the event including grand multiparity, multiple gestation, prolong labour, polyhydramnios, which are associated with an increase risk of bleeding after birth (WHO 2012). Uterine atony is said to account for upto 75-90 percent cases of PPH.[4] The main risk factors for emergency peripartum hysterectomy appears to be changing overtime from uterine atony to abnormal placentation due to increasing number of previous caesarean birth[5] and the possible causes include multiparity, pre eclampsia, previous postpartum hemorrhage, genital tract trauma, uterine rupture, retained placenta, augmented labour, coagulation disorders. The global incidence of primary post partum hemorrhage of 1000ml or more has been estimated at 10.5 percent of live birth, with a case fatality rate 1 %. A further 12% survive but with severe anemia.[7] Australian studies and studies in other developed countries, suggest that the rate

of postpartum hemorrhage in these countries is between 1% and 5% of live births.[7,8]

The aim of study was to recognize the changing trends in various causative factors, new treatment options and long term consequences. The onset of post partum hemorrhage is often unpredictable and sudden.[8] This makes prevention difficult and the focus is often on prevention, recognition, and management of the condition and optimization of the women's hemoglobin antenatally.

RESULTS

We reviewed the medical record of 77 patients retrospectively who underwent primary PPH. Table-I shows the relationship of primary PPH with various age groups. Highest incidence [49%] of primary PPH was noticed among women of age group 26-31 years.

Age	Number of Cases	Percentage
19-22	5	7%
23-25	10	13%
--26-28	25	32%
29-31	13	17%
32-34	13	17%
35-37	8	10%
38-40	3	4%

Table-I. Distribution of cases according to age.

Its arithmetic mean is 29.11 years and standard deviation 4.5916; it can be interpreted as the average pregnancy age with variation of 4.5916 is 29.11. It can be further deduced that minimum 68 % of pregnant women will be between ages of 29.11 $\pm$ 4.5916 years.

Variable	Number	Percentage
Primiparous	32	41%
Multiparous	39	50%
Grandmultiparous	6	7.7%

Table-II. Distribution of cases according to parity.

Majority of patients were multiparous [50%], where as frequency of PPH was seen in [41%] of primigravidas and [7.7%] of grand multipara.

Majority 66 % of patients had caesarean section for various indications while 34 % of patients were delivered vaginally.

Mode of delivery	Number	Percentage
Caesarean section	51	66%
Vaginal delivery	26	34%

Table-III. No of cases according to the mode of delivery

Risk factors	Number of cases	Percentage %
Anemia	15	19 %
Fetal Macrosomia	5	7%
Prolonged labour	5	7%
Obstructed labour	1	1%
Grandmultiparity	6	7%
Placenta accrete + placenta previa	2	3%
Augmented labour	5	6%
PIH	1	1%
Polyhydramnios	1	1%
No risk factor	33	43%

Table-IV. Distribution of cases according to various risk factors:

Commonly identified risk factors were anemia 19%, high parity 12 %, prolonged labour 7 %, augmented labour 5% and fetal macrosomia 7% of cases contributing towards uterine atony. No risk factors were identified in 43 % of the cases.

Causative factors	Number of cases	Percentage %
Uterine Atony	54	70%
Surgical trauma	11	14.2%
Birth canal laceration	7	9%
Retained placenta and products	4	5.1%

Table-V. Analysis of data according to causative factors.

Uterine atony was found to be a major causative factor in 70 percent of cases and second most common causative factor was genital tract trauma which includes uterine, cervical, vaginal and perineal tears in 23 % of cases.

Majority 51.9 % of cases were successfully managed with medical treatment whereas 48% of cases required surgical intervention.

Surgical treatment	Number of cases	Percentage %
Repair of laceration	18	23.3%
Balloon temponade	2	2.5 %
Uterovaginal packing	6	7.7 %
Brace sutures	4	5.1%
Peripartum hysterectomy	2	2.5%
Removal of placenta	4	5.1%
Internal iliac ligation	1	1.2%
Medical treatment		
Oxytocin	77	100%
Misoprostol	54	70%
Tranaxemic Acid	77	100%
Factor VIIa	3	3.8%

Table-VI. Treatment of PPH.

DISCUSSION

Primary PPH is a major cause of maternal morbidity and mortality in both the developed and developing countries like Pakistan. 28% maternal deaths were caused by primary PPH in a study done by Ejaz et al.[9] Another study showed a prevalence rate as high as 34%in Pakistan done by Bibi S et al.[10] The global prevalence of primary PPH is estimated at 6% of all deliveries.[11]

Among 77 patients who went into primary PPH, majority of them [50%] were multiparous and it was also noticed that the incidence of PPH increases with increasing parity. These results are comparable with study done by Al-Zirqi et al.[12]

The major causative factor is uterine atony identified in 70 % of patients in our study. Uterine atony is still the leading cause of primary PPH worldwide, whether is assessed in spontaneous vaginal delivery or caesarean section.[1,13,14] In an Irish study 76% of massive PPH was due to uterine atony.[15]

Genital tract trauma is the second commonest cause of PPH as seen in 23% of cases. These results are comparable to the study done by Naz et al which found 24% of genital tract lesion.[16] Retained placenta and products in 5.1% of cases which is comparable to the study done by sheikh's L et al.[17] Caesarean section increases blood loss at delivery and is a major risk factor to the etiology of PPH as high lightened in this study. Measures should be taken to reduce the caesarean section rate. Higher incidence of abnormal placentation appears to be associated with rising rates of caesarean delivery. A United Kingdom Obstetric Surveillance System (UKOSS) study found that peripartum hysterectomy was strongly associated with previous caesarean section birth and risk rose with an increasing number of previous caesarean births.[5]

Regarding risk factors for obstetric haemorrhage the commonest was anemia [19%]. Anemia was also found as the commonest risk factor in study done by Al-Zirqi et al.[12] Others being grand multiparity [7.7%], prolong labour [7%], fetal macrosomia [7%], augmented labour [6.5%], placenta previa [3%], PIH, polyhydraminos and obstructed labour in 1% of cases each. In our study 66% of patients were delivered by caesarean section which carries highest risk for obstetric haemorrhage. Comparable to this that is 60% ceasarean section rate is seen In Al-Zirqi et al.[12] It is worthy to note that postpartum hemorrhage can occur in the absence of any identifiable risk factors.[18,19] As no risk factors were identified in 43% of cases in this study.

Majority [51.9%] of cases were successfully managed with medical treatment. The significant feature of the medical treatment was the use of Tranexamic acid in all of the patients which reduced the need of blood transfusion and surgical intervention. A recent study done by Haleema et al (The Woman Trial) revealed that maternal mortality was reduced by a third if the treatment was given within 3 hours after delivery. Tranexamic acid also reduced the need for urgent surgery to control bleeding by 36 %.[20]

Consequences of postpartum hemorrhage include anaemia and fatigue that may affect the mother's ability to care for her newborn and may increase the risk of postnatal depression. Blood transfusion may be necessary and is not without risk. It was also observed in the study that patients who suffered serious morbidity including massive transfusion, renal insult and had peripartum hysterectomy for PPH, took longer time to recover both physically and mentally. One of our patients

developed chronic depression.

CONCLUSION

It is worthy to note that postpartum hemorrhage can occur in the absence of any identifiable risk factors. Therefore, the anticipation of its occurrence and prompt, adequate, and timely intervention will go a long way in reducing the adverse outcome.

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Injustice anywhere is a threat to justice everywhere.

– Martin Luther King, Jr. –

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
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