

## EVALUATION OF CLINICAL PROFILE OF POST-PARTUM HAEMORRHAGE AT A TERTIARY CARE CENTER

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### ABSTRACT

**Background:** Post-partum haemorrhage (PPH) is defined as a loss of more than 500ml blood from the genital tract after vaginal delivery and more than 1000ml at caesarean section. It is termed Primary when bleeding occurs within 24 hours of delivery and secondary when blood loss occurs more than 24 hours but within six weeks after delivery. PPH remains the most common direct cause of maternal mortality and morbidity in India as well as all around the globe. The prevalence of postpartum haemorrhage is 2-6% of all deliveries and was 6% in our study. **Material & Methods:** A total of 100 pregnant women who had postpartum haemorrhage after normal vaginal delivery, caesarean section, or assisted vaginal deliveries were enrolled for the study. **Results:** The majority of the cases were booked multiparous women between the age group of 21-30 years. The commonest etiology for PPH was uterine atony which accounts for 72% % of the total cases followed by genital tract trauma in 9%. Among the risk factors, Prolonged labour was seen in the maximum number of patients. Through various available modalities of treatment were used to manage a postpartum haemorrhage, most of the cases 67% were managed conservatively by medical treatment. No maternal mortality was reported in our study. **Conclusion:** Postpartum haemorrhage is a serious threat responsible for maternal mortality or morbidity, especially in developing countries. Hence to avoid this serious condition it is necessary to correct the avoidable risk factors, promote institutional deliveries, increase awareness, and increase trained health care professionals and all accurate and prompt measures to minimize the blood loss during and after the delivery.

**Keywords:** Postpartum haemorrhage, PPH, maternal mortality and morbidity

### INTRODUCTION

Postpartum haemorrhage is the most dreaded obstetric emergency that can affect any woman. It is the leading cause of maternal mortality and morbidity in the developing world. Post-partum haemorrhage (PPH) is defined as a loss of more than 500ml blood from the genital tract after vaginal delivery and more than 1000ml at caesarean section. It is termed Primary when bleeding occurs within 24 hours of delivery and secondary when blood loss occurs more than 24 hours but within six weeks after delivery (1).

PPH remains the most common direct cause of maternal mortality and morbidity in India as well as

all around the globe. Maternal mortality due to PPH is significantly low in developed countries 8% as compared to 25 % in the developing countries suggesting that it is a preventable complication (2). Post-partum haemorrhage accounts for about 30% (95% CI) of maternal mortality. To combat this situation in the year 2004, the International Confederation of Midwives along with the International Federation of Gynecology and Obstetrics pioneered an initiative to prevent and treat the post-partum haemorrhage. (3)

The prevalence of Postpartum haemorrhage is approximately 2-6% of all deliveries (1). The

etiology of PPH includes Uterine atony, Trauma to the genital tract, Retained placenta, and placental tissues and coagulopathy. Apart from active management of the third stage of labour (5), proper management of all stages, prophylactic measures, intelligent anticipation, early detection, and prompt treatment by skilled personnel will help in controlling PPH and preventing maternal mortality (4). Clinical audits, active management, improving the quality of care and training programs based on international guidelines for the health care personals are the mainstay in the early diagnosis, prevention, and treatment of the post-partum haemorrhage (6).

The objectives of our study were to analyse the socio-demographic profile of women with the diagnosis of postpartum haemorrhage, various risk factors for PPH, different modalities used for management of PPH, and the maternal outcome.

## MATERIALS & METHODS

The present observational study was conducted in the Department of Obstetrics and Gynaecology, Pacific Medical College and Hospital, Udaipur which is a tertiary care referral hospital. A total of 100 pregnant women who delivered vaginally normal or operative or by caesarean section with the diagnosis of Primary postpartum haemorrhage between January 2017 to June 2019 were included in the study. Clearance from Institutional Ethics Committee was taken before the start of the study and written informed consent for the study purpose was obtained from all the enrolled participants. A detailed history and socio-demographic details, various risk factors involved and causes of PPH, mode of delivery, different modalities of management of PPH, blood transfusions, and maternal outcomes were studied. Diagnosis of Postpartum haemorrhage was based on visual estimation of blood loss and postpartum haemoglobin estimation. The data were analyzed by using software's MS Excel 2010, Epi Info v7, and SPSS v22.

## RESULTS

In the present study, the age of the patients ranged from 19 to 43 years, out of the maximum number of the study participants were categorized in the age group of 21-30 years (62%). 21% of the study participants were in the age group of 31- 40 years, 12% of the study participants were in the age group of equal to or less than 20 years and lastly, 5% of cases were in the age group of 40 years or above. The majority of patients 65% belonged to a rural

area and 35% were urban. Regarding antenatal care, 70% of women were booked.

Most of the pregnant women were multiparous, out of the maximum number of cases had one to two living children (49%), 37% of pregnant women were primipara while resting 14% pregnant women had 3 or more living children. About 50% of women delivered vaginally, 45% underwent Caesarean section and 5% had an operative vaginal delivery. (Table 1)

**Table 1: Sociodemographic profile and obstetric details of study participants**

No	Item	Percentage
<b>Age</b>		
1	<20	12%
2	21-30	62%
3	31-40	21%
4	>40	5%
<b>Area wise distribution</b>		
1	Rural	65%
2	Urban	35%
<b>Booking status</b>		
1	Booked	70%
2	Unbooked	30%
<b>Parity</b>		
1	Primi	37%
2	Para 1- 2	49%
3	≥3	14%
<b>Mode of delivery</b>		
1	Vaginal	50%
2	Caesarean	45%
3	Operative vaginal	5%

Table 2 shows the most common etiology of Postpartum haemorrhage was uterine atony which accounts for 72% of the total cases. Traumatic cause for PPH was reported among 9% of the cases. Atony with trauma was seen in 12% of the cases. Retained placenta in 5% of the cases and Coagulopathy in 2% of the cases. (Table 2)

**Table 2: Distribution of study participants based upon causes of PPH**

Type of PPH	No. of cases
<b>Atonic PPH</b>	72%
<b>Traumatic PPH</b>	9%
<b>Combined (Atonic+ Traumatic)</b>	12%
<b>Retained placenta</b>	5%
<b>Coagulopathy</b>	2%

**Table 3: Risk factors associated with postpartum haemorrhage**

Antepartum haemorrhage	14%
Multiparity	18%
Prolonged labour, CPD	33%
Multiple pregnancy	7%
Anaemia	15%
Gestational Hypertension / Preeclampsia	11%
Sepsis	2%

It was observed in this study that the commonest risk factor associated with Postpartum haemorrhage was prolonged labour 33% followed by multiparity 18% and Antepartum haemorrhage 14%. Other risk factors were Anaemia 15%, Gestational hypertension and preeclampsia 11%, multiple pregnancy 7% and sepsis in 2% cases.

**Table 4: Distribution of study participants based upon different types of management techniques**

Type of management	No. of cases
Medical management	67%
Repair of Perineal /vaginal tears	9%
Manual removal of placenta	7%
Blynch sutures	2%
Balloon tamponade	7%
Stepwise devascularization	3%
Caesarean hysterectomy	3%
Devascularisation + balloon tamponade	1%
Internal iliac ligation	1%

Majority of cases were managed medically by uterotonics, uterine massage, replacement of fluids, transfusion of blood and blood components while surgical management was required in 33% cases. About 7 % cases had retained or adherent placenta where manual removal of placenta was done. Other surgical procedures performed were B Lynch sutures in 2%, Stepwise devascularization 3-4%, caesarean hysterectomy in 3% and Internal iliac ligation in 1% cases. Balloon tamponade was useful in 7% patients.

## DISCUSSION

Several researches had been conducted to know the prevalence of the post-partum hemorrhage. However many studies reported the prevalence varies from 1.5% to 12% of the total deliveries (8). Another study reported rates of Postpartum haemorrhage in Africa (27.5%), Oceania (7.2%), Europe and North America (13% ) and globally (10.8%) 17 In the

present study the incidence of PPH was observed to be 6% reason being that ours is a referral centre. In a study conducted in a teaching hospital of Nigeria among the pregnant women who had vaginal delivery and prevalence of post partum hemorrhage was reported 1.5% (1). In our study the age of the patients ranged from 19 to 43 years, out of them maximum number of the study participants were in the age group of 21-30 years (62%). Similar results were seen in a study conducted by sheikh L et al, Ajenifuja KO et al (48%) while Tongde G et al and Duhan L et al reported 71% and 88% women in 21-30 years age group. (9, 15, 16)

In the present study it was reported that majority of pregnant women were multiparous, out of them maximum number of cases had one or two living children (49%), 37% of pregnant women were primipara while rest 14% pregnant women were had 3 or more living children. These findings were in the contrast with the findings reported by a study conducted by Edhi M et al on prevention and management of post-partum hemorrhage who reported primary post-partum hemorrhage in primiparas (11). Gunavardane et al reported 52.5% multipara and 32 % primipara, Tongde et al reported 42% primipara while Ajenifuja KO et al found more multipara compared to primipara (64% and 23%) respectively which were similar to our study. (3, 15, 9) Duhal L et al found equal numbers of primipara and multipara 50% and 49%. (16)

Our study reveals 30% unbooked cases which was similar to the studies of Ajenifuja et al 30.36%, Tongde G 40%. (9, 15) In contrast Duhan L et al reported 72% unbooked cases. (16)

In this study the commonest etiology for PPH was uterine atony which accounts for 72% of the total cases. Genital tract trauma was reported in 9%, Atony with trauma in 12%, Retained placental tissue in 5% and Coagulopathy in 2% of the cases. These findings were in correlation with the study conducted by Sheikh L et al who found 54% cases of atonic uterus (12). Tongde G et al reported 69% uterine atony and 20% genital tract trauma and Duhan L reported 68% and 23.7% cases respectively. (15, 16) In the study by Ajenifuja retained placenta was the most common cause 48.21%, uterine atony 10.7%, trauma 8% and he attributed this to poor management of 3rd stage of labour. Use of oxytocics has been associated with 60% decrease in incidence of PPH. (9). Similarly Henry et al also found retained placental tissue as the commonest etiology (13).

Many risk factors are associated with Postpartum haemorrhage. Our study reveals that prolonged labour is the commonest risk factor 33% which was also seen in the studies of Gunavardane et al 34.4% and Duhan L et al 26%. Tongde G et al reported no factor in 65% cases and prolonged labour only in 6.5% cases. **(3, 15, 16)**

Postpartum haemorrhage can be managed by various modalities of treatment. Most of the cases were managed by conservative medical treatment 67%, which was also observed in the studies of Gunavardane et al 47.5% and Duhan L et al 55%. **(3, 16)** Peripartum hysterectomy was done in 3% in our study, 2.63% in study of Duhan L et al while Gunavardane et al reported in 21.3% cases. **(3, 16)**

Post-partum hemorrhage accounts for approximate 25% of maternal mortality due to haemorrhage and majority of these from developing countries.**(18)** Apart from the high mortality, post-partum hemorrhage is linked with serious and chronic morbidities such as increased requirement and risk of blood transfusion related complications, disseminated intravascular coagulopathy, renal failure due to hypovolemic state, infertility and failure of lactation **(17)**.

## CONCLUSION

Haemorrhage is still the leading cause of maternal mortality accounting for 33.9% maternal deaths in Africa, 31% in Asia, 11% in Latin America. **(15)**

Post-partum hemorrhage is a leading cause of maternal mortality and morbidity especially in developing countries. Prevention is important and includes identifying and correcting the avoidable risk factors and active management of 3rd stage of labour, promote institutional deliveries, increase awareness, and increase trained health care professionals and all accurate and prompt measures to minimize the blood loss during and after the delivery.

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