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Original Research Article

Study of risk factors in patients with postpartum hemorrhage- an observational study

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ABSTRACT

Background: In both developed and developing countries, postpartum haemorrhage (PPH) can occur in 1-5% of deliveries, and it is still the leading cause of maternal morbidity and mortality. Clinicians must be aware of PPH risk factors and should consider them when counselling women about where to birth. The goal of this study was to assess risk factors in patients with postpartum hemorrhage.
Methods: This study comprised 50 pregnant patients with PPH. Their maternal age, parity status, GA, and mode of delivery were recorded. Other associated co-morbidities with PPH such as anaemia, H/O LSCS, hypertensive status, abruptio placentae, premature rupture of membranes, and prolonged labour were also recorded. The morbidity rate and intervention employed were also recorded.
Results: In the present study, significant risk factors for PPH were 20-24 years of age, primipara, severe anaemia (Hb<7 gm%), previous LSCS, hypertensive disorders of pregnancy, premature rupture of membranes, abruptio placentae and prolonged labor.
Conclusions: Monitoring these identified risk factors could enable extra vigilance during labor, and preparedness for managing PPH in all women giving birth

Keywords: Risk factors, PPH, Atonic PPH, previous LSCS, Hypertensive disorders of pregnancy

INTRODUCTION

Postpartum haemorrhage (PPH) remains the largest preventable cause of maternal sickness and mortality around the world.[1-2] Still it is the largest cause of maternal fatalities worldwide, accounting for 25% of all deaths each year. In primary PPH, hypertensive disorders and sepsis were the leading causes. Within 24 hours of delivery, blood loss from the genital tract of 500 mL or more after a normal vaginal delivery (NVD) or 1,000 mL or more after a caesarean section is characterized as PPH.[3-4]

Uterine atony, trauma, especially genital tract injuries, placental retentions, and blood coagulation system failure are also common causes. The majority of cases of PPH (75%) are caused by uterine atony.[5]

Multiple pregnancies, foetal macrosomia, primigravida, grand multiparity, older age, preterm deliveries, genital tract injuries, non-use of oxytocin for PPH prevention, labour induction, caesarean delivery, and intrauterine foetal deaths are all risk factors.[6] However, because 20% of patients with PPH have no known risk factors, clinicians must be ready to treat it at every delivery.[7]

Severe anaemia requiring blood transfusions, disseminated intravascular coagulopathy, hysterectomy, multisystem organ failure, and death can all result from PPH.[5]

The magnitude and risk factors for PPH are poorly understood. Risk factor identification in the prenatal and intrapartum periods may enable timely interventions to avoid PPH, according to obstetrics practitioners.

This study was undertaken to assess the risk factors in patients with postpartum hemorrhage.

METHODS

This observational study was conducted in the department of gynaecology and obstetrics at ACS medical college and hospital from 2015 august to March 2017. The duration of the study was 12 months. Ethical approval was obtained from the institutional ethics committee.

Inclusion criteria

Pregnant women, >18 years, delivered at our hospital, with any one of the following criteria: Patients with estimated blood loss of more than 500 ml after vaginal delivery, more than 1000 ml after caesarean delivery, and 1500 ml loss in obstetric hysterectomy, patients with excessive bleeding that makes the patient symptomatic (e.g., Light-headedness, vertigo, syncope) and/or results in signs of hypovolemia (e.g., hypotension, tachycardia or oliguria), patients with >10% decline in PPH concentration from prepartum levels or required blood transfusion were included in the study.

Exclusion criteria

Women who were too sick or weak to give consent or to be interviewed or not willing to participate in the study.

Patient consent was taken both verbally and in writing.

Maternal age, gestational age, parity, history of abortions, prior obstetric history, co-morbidity period of pregnancy, risk factors for PPH, amount of blood loss, mode of delivery, birth weight of the child, causes of PPH, blood transfusion, management of PPH, and maternal morbidity are just some of the demographic and clinical data collected.

All data were collected and analyzed.

RESULTS

During this 12-month study, 600 deliveries were conducted at our hospital, and 50 patients experienced postpartum hemorrhage. The majority of the subjects belonged to the 20-24-year age group (44%) according to Table 1. In Table 1 we see, as per the parity status, primiparous cases were the highest (56%). As per gestational age, the majority were from 36-38 weeks and 38-40 weeks respectively both being 30% each (Table 1). In the present study, normal vaginal delivery (NVD) (74%) was the most commonly employed over LSCS (lower segment caesarean section).

In present study common risk factors severe anaemia (28%), previous LSCS (22%), PIH/ pre-eclampsia (18%), pre-mature rupture of membranes (12%), abruptio placentae (12%) and prolonged labor (8%) shown in the Table 1.

Table 1: General characteristics

Parameters		Frequency	Percentage (%)
Maternal age (Years)	<20	2	4
	20-24	22	44
	25-29	14	28
	30-34	8	16
	>35	4	8
Parity	Primipara	28	56
	Multipara	22	44
GA (in weeks)	<34	4	8
	34-36	6	12
	36-38	15	30
	38-40	15	30
	>40	10	20
Mode of delivery	NVD	37	74
	LSCS	13	26

Table 2: Risk factors associated with PPH.

Risk factors	Frequency	Percentage (%)
Anemia	14	28
Previous LSCS	11	22
PIH/Preeclampsia	9	18
Abruptio placentae	6	12
Premature rupture of membranes	6	12
Prolonged labor	4	8

Table 3: Management outcomes.

Type of intervention	Frequency	Percentage (%)
Uterotonics	50	100
Blood transfusions	41	82
Surgical intervention	43	86

To combat the PPH, various types of interventions were employed to save the patients' life. The most common of which was the use of uterotonics (100%) while the surgical intervention was used in 86% of the cases followed by PCV blood transfusions (82 %), in this study.

Table 4: Mortality.

Mortality	Frequency	Percentage (%)
Yes	2	4
No	48	96
Total	50	100

According to Table 4, we see in the present study, that 2 cases of mortality were observed.

DISCUSSION

In underdeveloped nations like India, pregnancy and delivery, as well as the complications that follow, remain the primary causes of death, sickness, and disability among women of reproductive age.[8] In our study of 50 cases, we have observed that 28 cases were primiparous while 22 cases were multiparous with the majority belonging to the maternal age group of 20-24 years in the age group of 25 to 29years, Rajeshwari et al studied 142 women with PPH, majority of the women were primiparous.[9] While according to Li et al multiparity was a risk factor for PPH.[10]

Anaemia in pregnancy is defined as a haemoglobin level below 11 g/dl (WHO).[11] In the present study anaemia presented as one of the most common risk factors for PPH. The most salient finding in a study by Kavle et al is a strong association between moderate-to-severe anaemia at 28 weeks gestation (on average) and greater severity of blood loss at delivery and postpartum.[12]

A previous history of a previous LSCS was seen as a strong risk factor for PPH in this study. According to Kramer et al prior Caesarean section is a major independent risk factor for PPH as seen in our study.

Preeclampsia was seen as a risk factor for PPH in this study Von Schmidt auf Altenstadt et al demonstrated an association between the two most important causes of maternal mortality and morbidity pre-eclampsia and PPH; women with pre-eclampsia have a 1.5-fold increased risk of PPH in the Netherlands.[13]

Placental abruption or abruptio placentae is defined as the total or partial separation of the placenta before delivery, is a common cause of poor pregnancy outcomes, necessitating a caesarean section and extensive infant care.[14] Our study showed abruptio placentae in 12% of cases with PPH. Sengodan et al also found 19.6% of cases with PPH affected by placental abruption

Premature rupture of membranes (PROM) is defined as the spontaneous rupture of the amniotic membrane with a release of amniotic fluid at least one hour before the onset of labor. If the membranes rupture after 37 weeks of gestation it is called the term PROM. If the rupture of membranes (ROM) occurs after 28 weeks but before 37 weeks of gestation is termed the preterm premature rupture of membrane (PPROM).[15] PROM presented as a risk factor in our study for PPH.

Mortality was observed in only 2 cases. This demonstrates that though PPH can be fatal, awareness and proper intervention can make it highly preventable.

In the present study, for treatment, all patients were administered uterotonics. The world health organization (WHO) recommends uterotonic administration for every woman after birth to prevent PPH.[16] Multiple uterotonics have been evaluated for PPH prevention over the past four decades, including oxytocin receptor agonists (oxytocin and carbetocin), prostaglandin analogues (misoprostol, sulprostone, carboprost), ergot alkaloids (such as ergometrine/methylergometrine) and combinations of these (oxytocin plus ergometrine, or oxytocin plus misoprostol).[17]

Blood transfusions were required in 82% of the cases in the present study while 86% required surgical intervention.

CONCLUSION

In the present study, significant risk factors for PPH were 20-24 years of age, primipara, severe anaemia (Hb<7 gm%), previous LSCS, hypertensive disorders of pregnancy, premature rupture of membranes, abruptio placentae, prolonged labor clinicians should be aware of this increased risk and use this knowledge in the management of the third stage of labor.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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