

## Ducted a Clinical Assessment of Risk Variables in Patients with Post-Partum Haemorrhage

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### Abstract

**Background:** In both industrialized and developing nations, post-partum haemorrhage can occur in 1-5 percent 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 counseling females about where to birth.

**Aims & objectives:** The goal of this research was to look at risk variables in tertiary hospital patients with post-partum haemorrhage.

**Material and Methods:** The current investigation was a prospective, observational research undertaken in pregnant females over the age of 18 who were delivered at our hospital and had been diagnosed with post-partum haemorrhage.

**Results:** During the four-year research period, 9784 births were performed at our hospital, with 172 patients (1.76%) suffering from post-partum haemorrhage. The majority of the patients were aged 21-24 years (37.21%), followed by the 25-29 years age group (31.4 %). The research group's average age was 23.26 3.46 years. Severe anemia (Hb 7 gm%) (36.05 percent), previous LSCS (26.74 %), hypertensive disorders of pregnancy (22.09 %), premature rupture of membranes (17.44 percent), hypothyroidism (17.44 %), abruptio placentae (17.44 %), prolonged labor (15.12 %), and placenta previa were all common risk factors in the current research (15.12 %). Other than more than 2 uterotonics (100.00%) and > 2 PCV blood transfusions (84.88%), bilateral uterine artery ligation (45.35%), bilateral uterine artery ligation + bilateral internal iliac artery ligation (9.30%), obstetric hysterectomy (15.12%), and perineal tear repair (15.12%) were the commonest interventions (9.30 percent). Twelve patients died (atonic PPH– six instances, mixed PPH– four cases, placenta accreta spectrum– two cases).

**Conclusion:** 21-24 years of age, primiparity, severe anemia (Hb 7 gm%), previous LSCS, hypertensive disorders of pregnancy, preterm rupture of membranes, hypothyroidism, abruptio placentae, prolonged labor, and placenta previa were all significant risk factors for post-partum haemorrhage in this research.

**Keywords:** risk factors, post-partum haemorrhage, atonic PPH, previous LSCS, hypertensive disorders of pregnancy.

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## Introduction

In both industrialized and developing nations, post-partum haemorrhage can occur in 1-5 percent of deliveries, and it is still the leading cause of maternal morbidity and mortality [1]. Blood loss sufficient to cause hypo-volemia, a 10% drop in the hematocrit, or requiring transfusion of blood products is referred to as post-partum haemorrhage (PPH) in vaginal delivery, C-section blood loss of above 1000 ml, or 1500 ml loss in obstetric of PPH is that blood loss sufficient to cause hypo-volemia, a 10% drop in the hematocrit, or requiring transfusion of blood products in obste (regardless of route of delivery) [ 2]. Maternal mortality is caused by an avoidable cause: post-partum haemorrhage. In developed countries, maternal deaths related to post-partum bleeding are extremely rare (about 8%). i.e., pregnant females in impoverished nations are at a higher risk of dying during childbirth than their industrialized counterparts [3,4]. Anemia, multiple pregnancy, obstetric procedures (augmentation and inducement of labor, artificial vaginal delivery, cesarean delivery) and chorio-amnionitis are all known risk factors for PPH, but PPH can also occur in patients who have no known risk factors [5]. Risk factors are assessed before to childbirth as part of the prediction technique. Risk factors for PPH can appear before or during pregnancy, so care plans must be adjusted accordingly [6]. Clinicians must be aware of the risk factors for PPH and should consider them when counseling females about where to give birth. Our capacity to lower the incidence of PPH is contingent on continued research into previously unknown causes and risk factors [7,8].

**Aims & objectives:** The goal of this research was to look at risk variables in

post-partum haemorrhage patients at a tertiary hospital.

**Material and Methods:** The current investigation was a prospective, observational research that took place in the Department of Gynaecology and Obstetrics at Cenral India. The research lasted four years. The institutional ethical committee gave their consent to the research.

**Inclusion criteria:** Pregnant females over the age of 18 who give birth at our hospital and meet any of the following criteria: Patients who have lost more than 500 milliliters of blood following vaginal delivery, more than 1000 milliliters after caesarean delivery, or 1500 milliliters during obstetric hysterectomy. Patients who have excessive bleeding that causes symptoms (e.g., light-headedness, vertigo, syncope) and/or indicators of hypo-volemia (eg, hypotension, tachycardia or oliguria). Patients who required blood transfusions had a post-partum haemoglobin concentration drop of more than 10% from prepartum levels.

**Exclusion criteria:** Females who are too ill to consent to be questioned, or who refuse to take part in the research.

The patient/relatives signed a written informed consent form to participate. 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 child, causes of PPH, blood transfusion, management of PPH, and maternal morbidity are just some of the demographic and clinical data collected. Data was collected and collated using Microsoft Excel, and descriptive statistics were used for statistical analysis.

## Results

During the four-year research period, 9784 births were performed at our hospital, with 172 patients (1.76%) suffering from post-partum haemorrhage. The bulk of the patients (37.21%) were between the ages of 21 and 24, followed by the 25-29 age group (31.4 percent ). The research group's

average age was  $23.26 \pm 3.46$  years. The majority of the females were primiparous (51.16 percent), with parity status >2 coming in second (26.74 percent ). The commonest gestational age range was 38-40 weeks (31.4%), followed by 36-38 weeks (31.4%). (26.74 percent )

**Table 1: General characteristics**

Characteristics	No. of cases	Percentages
Age in years		
19-20	6	3.49%
21-24	64	37.21%
25-29	54	31.40%
30-34	32	18.60%
≥ 35	16	9.30%
Parity		
1	88	51.16%
2	38	22.09%
>2	46	26.74%
Gestational age (weeks)		
<34 weeks	16	9.30%
34- 36	18	10.47%
36- 38	46	26.74%
38- 40	54	31.40%
>40	38	22.09%

Severe anemia (Hb 7 gm%) (36.05 percent), previous LSCS (26.74 percent), hypertensive disorders of pregnancy (22.09 percent), premature rupture of membranes (17.44 percent), hypothyroidism (17.44 percent), abruptio placentae (17.44 percent), prolonged labor (15.12 percent), and placenta previa were all common risk factors in the current research (15.12 percent ).

**Table 2: Risk factors associated with PPH**

Risk factors	No. of cases	Percentages
Severe Anaemia (Hb < 7 gm%)	62	36.05%
Previous LSCS	46	26.74%
Hypertensive disorders od pregnancy	38	22.09%
Premature rupture of membranes	30	17.44%
<u>Hypothyroidism</u>	<u>30</u>	<u>17.44%</u>
Abruptio placentae	30	7.44%
Placenta previa	26	15.12%
Prolonged labor	26	15.12%
Mal presentation	18	10.47%
Instrumental delivery	18	10.47%
Genital trauma	16	9.30%
Gestational diabetes mellitus	16	9.30%

Fever	14	8.14%
Primary LSCS	12	6.98%
Multiple pregnancy	10	5.81%
Macrosomia (Birth weight > 4 kg)	10	5.81%
Polyhydramnios	10	5.81%
Placenta accreta spectrum	2	1.16%
Fibroid uterus	2	1.16%

Other than more than 2 uterotonics (100.00%) and > 2 PCV blood transfusions (84.88%), bilateral uterine artery ligation (45.35%), bilateral uterine artery ligation + bilateral internal iliac artery ligation (9.30%), obstetric

hysterectomy (15.12%), and perineal tear repair (15.12%) were the commonest interventions (9.30 percent). Six patients died (atonic PPH – six instances, mixed PPH – four cases, placenta accreta spectrum – two cases).

**Table 3: Management outcomes**

Type of intervention for PPH	No. of cases	Percentages
Uterotonics > 2	172	100.00%
Blood transfusions > 2 PCVs	146	84.88%
Surgical intervention		
Bilateral uterine artery ligation	78	45.35%
Bilateral uterine artery ligation + bilateral internal iliac artery ligation	16	9.30%
Obstetric hysterectomy	26	15.12%
Perineal tear repair	16	9.30%
Mortality	12	6.98%

## Discussion

The commonest cause of PPH is uterine atonicity, which occurs when the placenta separates and the uterine sinuses, which are ripped, are unable to be compressed properly due to improper contraction and retraction of the uterine musculature, and bleeding continues [9]. EPH can cause serious complications related to severe anemia, such as acute kidney injury (29.3%), hepatic failure, Sheehan Syndrome, adult respiratory distress syndrome (24.6%), and disseminated intravascular coagulopathy (DIC) (11.7 percent) Rajeshwari et al. looked at 142 females who had experienced post-partum bleeding, the majority of whom were primiparous [10]. Pre-existing anemia was identified in 11 percent of the females between the ages of 25 and 29, PROM was seen in 16 percent, hypothyroidism was

seen in 20%, and 19 percent of the females underwent secondary LSCS. The current research found similar results. 115 patients had severe obstetrical bleeding (greater than 1500 ml), according to Chandrika SK (prevalence of 0.9 percent). Severe obstetric bleeding was found to be common in 0.9 percent of cases. Multipara patients made up a high percentage of the patients (62%). In this research, mortality was 21.73 percent and morbidity were 78.26 percent. In this research, uterine atonic PPH was the commonest cause of obstetric haemorrhage. Yogesh T et al. found that PPH was more common between the ages of 25 and 28, with a mean gestational age of 36.5 3.4 weeks and higher parity in research of 80 cases of PPH. Preeclampsia (35%) and prolonged labor (26.3%) were both significant risk factors for PPH<sup>11</sup>. Nanani M. looked at 200 cases of PPH and found that atonicity

of the uterus was the commonest risk factor (84 percent), followed by PIH (37 percent), APH (22.5 percent), protracted labor (14 percent), and retained placental products (8.5 percent). Large baby induced PPH (7%) was followed by genital tract injuries (6.5%), ruptured uterus (4.5%), multiparity (4.5%), infections (2.5%), and uterine inversion (2.5%). (1 percent). [11] According to research by Kebede BA et al., the total prevalence of primary post-partum haemorrhage was 16.6% among 422 research participants. Pre-partum anemia [AOR = 5.3, 95 percent CI (2.2, 12.8)], complications during labor [AOR = 1.8, 95 percent CI (2.8, 4.2)], history of previous post-partum haemorrhage [AOR = 2.7, 95 percent CI (1.1, 6.8)], and instrumental delivery [AOR = 5.3, 95 percent CI (2.2, 12.8)] were all significant predictors of primary post-partum haemorrhage [12-14]. PPH can be compounded by pre-existing anemia, and even if only a little amount of blood is lost, the clinical consequences can be severe. In terms of uterine atony, anemia is common during pregnancy and is associated to post-partum haemorrhage. [15] The more severe the anemia, the more blood loss and complications are expected. It is feasible to detect anemia in pregnant females early in their antenatal care and take relevant measures. In settings with weak communications and referral systems, as well as shortages of required drugs and equipment, the rapidity with which PPH deaths occur is a significant obstacle. Preventing post-partum haemorrhage among facility-based deliveries is particularly effective when the third stage of labor is actively managed. It prevents blood loss, severe post-partum haemorrhage (>500 ml), and a protracted third stage of labor better than physiological management. Given that PPH can strike without notice, rural areas should examine strategies to improve both primary and secondary PPH prevention (iron supplementation, AMTSL) (availability of obstetric first aid,

availability of transport, and availability of emergency obstetric care).

### Conclusion

21-24 years of age, primiparity, severe anemia (Hb 7 gm%), previous LSCS, hypertensive disorders of pregnancy, preterm rupture of membranes, hypothyroidism, abruptio placentae, prolonged labor, and placenta previa were all significant risk factors for post-partum haemorrhage in this research. Anemia is a treatable condition that is linked to uterine atony and should be addressed as soon as possible during pregnancy.

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