



A Study on Risk Factors of Post Partum Haemorrhage

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Abstract

Background: Postpartum hemorrhage (PPH) is an obstetric emergency. It is a major cause of maternal mortality and severe morbidity, particularly in low income countries. If clinical situation in which haemorrhage is likely to occur can be predicted then anticipatory and preventive measures can be taken before active treatment is necessary. Thus in this study our aim was to study the risk factors associated with postpartum haemorrhage.

Material and Method: This is a retrospective study conducted in the Department of OBG at Sawai Maan Singh hospital, Jaipur. A total of 60 cases of the past 6 months from January 2021 to June 2021 were included in the study to find out the predisposing factors for PPH.

RESULT: Out of 60 cases, 56% of primi gravidas and 44% of multigravidas had PPH, more commonly in patients of age group 25 to 29 years. Out of 60 cases 13% had hypothyroidism, 18% were previous LSCS, 10% had premature rupture of membranes and placenta previa, 11% had pre-existing anaemia and 5% had macrosomic babies.

Conclusion: Our results suggest that the temporal increase in the incidence of PPH, at least at the study hospital, was attributable to rise in the incidence of several key risk factors, including previous LSCS, premature rupture of membranes, anaemia, big baby and malpresentation

Keywords: NIL

Introduction

Postpartum hemorrhage (PPH) is an obstetric emergency. It is a major cause of maternal mortality and severe morbidity, particularly in low income countries.

According to the World Health Organization (WHO) postpartum hemorrhage (PPH) is defined as the blood loss of more than 500 milliliters following a vaginal delivery or more than 1000 ml following Caesarean section^{(1) (2)}. PPH can also be defined as any amount of vaginal bleeding following delivery that causes derangement of vital signs or loss of 10% hemoglobin from the baseline^{(3) (4)}. A final marker

used to estimate the hemorrhage incidence is the transfusion rate.

Causes of postpartum haemorrhage are commonly referred to as 4 T's 1) **Tone:** The most frequent cause of obstetrical haemorrhage is failure of the uterus to contract sufficiently after delivery and to arrest bleeding from vessels at the placental implantation site⁽⁵⁾ 2) **Trauma:** Childbirth is invariably associated with trauma to the birth canal, which includes the uterus and cervix, vagina, and perineum. Injuries sustained during labour and delivery range from minor mucosal tears to lacerations that create

life-threatening haemorrhage or hematomas. 3) **Tissue:** retention of tissue from the placenta or foetal membranes may lead to bleeding. 4) **Thrombin:** a bleeding disorder occurs when there is a failure of clotting, such as with diseases known as coagulopathies.

Aims and Objectives: To find out the risk factors likely to cause PPH so that timely preventive measures can be taken.

Materials and Methods : This is a retrospective study conducted in the Department of OBG at Sawai Maan Singh hospital , jaipur . A total of 60 cases of the past 6 months from january 2021 to june 2021 were included in the study to find out the predisposing factors for PPH. After taking approval of Institute review board and ethical committee , Retrospectively data was collected from medical records regarding age, parity, period of gestation, risk factors for PPH, mode of delivery and management. A standard proforma was used to tabulate the above data along with test results .

The **inclusion criteria** were – blood loss over 500 ml at the time of delivery or in the first 24 hours after delivery in cases of normal vaginal delivery ,over 1000ml in cases of cesarian delivery and those cases in which the patients pulse rate, blood pressure, and haemoglobin estimation reflected blood loss of more than 10%.

Blood loss was assessed in terms of weight of blood clot collected in a kidney tray. Data regarding women who received blood transfusion post PPH were noted. Blood transfusion for excessive bleeding was defined as a blood transfusion given for a likely PPH ≥ 1500 ml due to clinical symptoms and signs of anaemia or hemodynamic decompensation after delivery.

Statistical analysis of data was carried out using SPSS statistical software. Quantitative data were analysed with mean, median and standard deviation. Qualitative data (categorical) were analysed with percentages and frequencies. The significance in difference between the two groups were assessed and cross tables, Pearson's chi square test and Fishers exact test were applied where ever necessary.

Results

Out of 60 cases, 56% of primigravidas and 44% of multigravidas had PPH(Figure1).PPH was seen more

commonly in patients of age group 25 to 29 years (Figure2). Out of 60 cases 18% were secondary LSCS , 13 % had hypothyroidism , 11 % had pre-existing anaemia and gestational diabetes mellitus, 10% had premature rupture of membranes and 5% had macrosomic babies and (Figure3).

Post partum haemorrhage was controlled with uterotonics in 72 % of cases . 22 % cases required surgical management like B lynch sutures . Subtotal hysterectomy was done in 6% cases (table1). Blood transfusion was done for 30 cases .

Discussion

Pregnancy and childbirth and their consequences remain the leading cause of death, disease and disability among women of reproductive age in developing countries like India. In our series of 60 cases we have observed that primigravida with age group of 25 to 29 were more prone to postpartum haemorrhage and hypothyroidism, secondary LSCS, premature rupture of membranes, pre-existing anaemia, gestational diabetes mellitus were identified as major risk factors.

In Michael S. Kramer et al., study, ⁽⁶⁾ they found that Labour induction, augmentation of labour, and prior caesarean section are significantly associated with the risk of PPH, and their increase over the study period largely explained the observed rise in PPH in their study. ⁽⁷⁾ In Sam Ononge et al., in their study found that caesarean section, multiple pregnancy, fetal macrosomia and HIV are the risk factors for PPH ⁽⁸⁾. Jane B Ford et al., in their study on post partum haemorrhage found that 5.8 % of women had PPH in their first pregnancy and 4.5 % had PPH in their second and 4.5% of women had PPH in their third pregnancy. ⁽⁹⁾ Lao et al., in their study found that parturient aged ≥ 35 years (12,686/64,886 or 19.6%) had significantly increased incidence of PPH. In our study maximum number of cases were in the age group of 25 to 29years. ⁽¹⁰⁾

Hypothyroidism was found as major risk factor for PPH in our study. Post-partum haemorrhages in hypothyroidism are produced both through the uterine hypotony and coagulation problems, with plaque adhesiveness problem. ⁽⁶⁾ Rodica Tudosa et al., in their study on maternal and fetal complications of the hypothyroidism related pregnancy, they found that post partum haemorrhage was seen in 18.3

percentage in patients with hypothyroidism. ⁽¹¹⁾ Various studies (Leung, Buckshee, Davis) from the literature indicate a percentage between 7% and 19%.⁷ In our study 13 % of the hypothyroid patients had PPH. Therefore hypothyroidism is one of the major risk factor for post partum haemorrhage and post partum haemorrhage should be anticipated at the time of delivery and steps should be taken to control it.

Anaemia in pregnancy is common and linked to postpartum hemorrhage in terms of uterine atony. The more severe the anaemia, the more likely the greater blood loss and adverse outcome. Frass et al., showed that 29.1% of anaemic women developed PPH during caesarean delivery due to uterine atony. Prior studies have demonstrated that severe anaemia may impair myometrial contractility resulting from impaired transport of hemoglobin and oxygen to uterus causing tissue enzymes and cellular dysfunction. In their study severe uterine atony required emergency hysterectomy which occurred in 39.6% (32/53) of women who had severe anemia. ⁽¹²⁾

Magann et al., in their study found that the PPH rate in nonelective caesarean (6.75%) was greater than after elective caesarean (4.84%). In our study 18% of the previous LSCS patients had PPH. ⁽¹³⁾ Lill Trine Nyfløt et al., in their study PPH is associated with premature rupture of membranes in 12 % of cases. In our study PPH is associated with PROM in 10% of cases. ⁽¹⁴⁾

Michael S. Kramer et al., studied a total of 1,03,726 deliveries during their study period, among which

2346 (2.3%) had a recorded PPH and 157 (0.15%) had a PPH accompanied by a blood transfusion and/or hysterectomy ⁽⁷⁾ . In our study PPH was controlled with uterotonics in 72% of cases and 21 % required surgical management like B lynch sutures or Hayman sutures and hysterectomy was done in 4 cases. Blood transfusion was done for 30 cases (50%).

Conclusion

Obstetrical hemorrhage along with hypertension and infection continues to be the infamous “triad” of causes of maternal deaths in both developed and underdeveloped countries. It is a leading reason for admission of pregnant women to intensive care units (ICUs). Postpartum haemorrhage is an emergency every obstetrician has to face, often unexpectedly. It complicates about 3-6% of all deliveries. It is potentially life threatening, and third most common cause of maternal death in developed world. Our results suggest that the temporal increase in the incidence of PPH, at least at the study hospital, was attributable to rises in the incidence of several key risk factors, including secondary LSCS, premature rupture of membranes, anaemia, big baby and malpresentation.

Ethical Statement: The study has been approved by Human and Animal Rights. This study does not involve any research work involving animals and was performed on booked antenatal patients.

Informed Consent: Informed consent has been obtained from all concerned authorities prior to study

Figure 1 Parity and age distribution

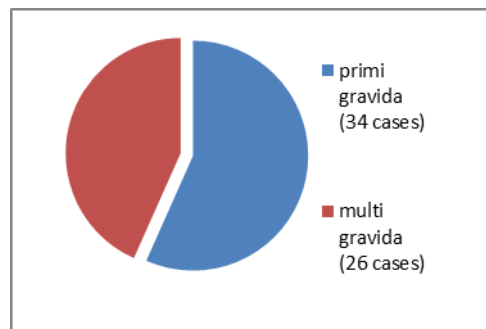


Figure 2 Age group in years

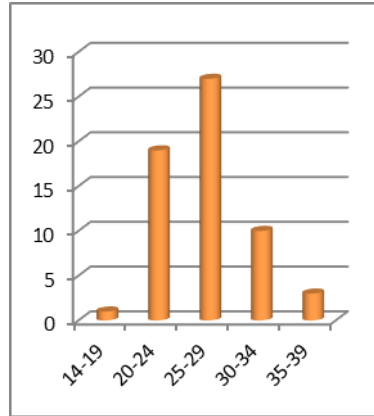


Figure 3 Risk factors associated with PPH

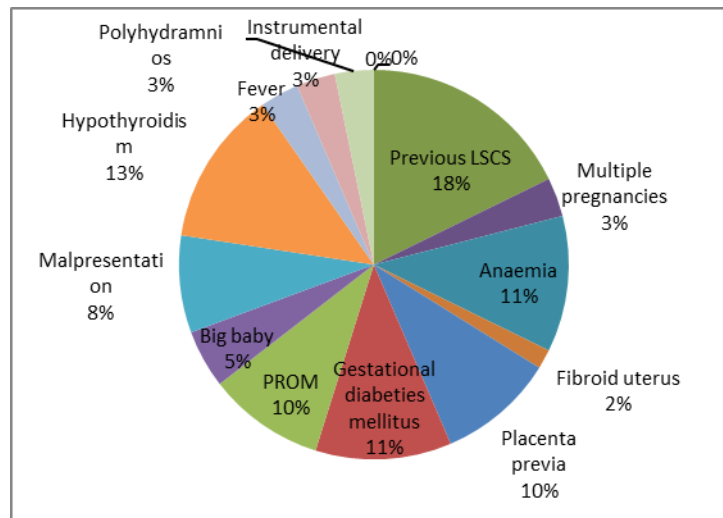


Table 1

Categories	No of cases
Uterotonics	43
Surgical management	13
Hysterectomy	4

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