

# A study of the factors associated PPH at tertiary health centre

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## Abstract

**Introduction:** PPH is a frequent complication of delivery and its incidence is commonly reported as 2% - 4% after vaginal delivery and 6% after cesarean section with uterine atony being the cause in about 50% cases **Aims and Objectives:** Study of the factors associated PPH at tertiary health centre. **Methodology:** After approval from institutional ethical committee a cross-sectional study was carried out at in the department of OBGY in the patients who were having problem of Post-partum Hemorrhage (PPH) during the one year period i.e. March 2015 to March 2016 . After written explained consent total 72 patients were included into the study and other 70 patients who were not having problem of PPH were compared with the associated factors. The statistical analysis done by Z-test (Standard error of difference between two proportions) and if  $Z \geq 1.96$  was considered Significant ( $P < 0.05$ ) this calculated by SPSS software version 17. **Result :** In our study we have found that The majority of the patients were from the age group of >34 were 55.56%, followed by 29-34 -16.67, 24-29 were 12.50%, 20-24 were 9.72%, < 19 were 5.56%. The most common associated factors were Prolonged labor ( $Z=4.5$ ,  $P < 0.001$ ), Age >34 ( $Z=5.3$ ,  $P < 0.001$ ), Polyhydramnios ( $Z=4.89$ ,  $P < 0.05$ ), Obesity- (BMI >30) ( $Z=3.92$ ,  $P < 0.01$ ), Multigravida ( $Z=5.1$ ,  $P < 0.001$ ), Diabetes ( $Z=4.75$ ,  $P < 0.001$ ), Fetal Macrosomia ( $Z=3.56$ ,  $P < 0.01$ ), Retained placenta ( $Z=2.92$ ,  $P < 0.05$ ), Trauma to Birth canal ( $Z=2.82$ ,  $P < 0.05$ ), Bleeding disorders ( $Z=5.2$ ,  $P < 0.001$ ), Twin pregnancy ( $Z=4.92$ ,  $P < 0.001$ ). **Conclusion:** It can be concluded from our study that The majority of the patients were from the age group of >34. The most common associated factors were Prolonged labor, Age >34, Polyhydramnios, Obesity- (BMI >30), Multigravida, Diabetes, Fetal Macrosomia, Retained placenta, Trauma to Birth canal, Bleeding disorders, Twin pregnancy. **Key Words:** Post partum Hemorrhage (PPH), Prolonged labor, Polyhydramnios, Multigravida, Fetal Macrosomia, Retained placenta.

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## INTRODUCTION

PPH is a frequent complication of delivery and its incidence is commonly reported as 2% - 4% after vaginal delivery and 6% after cesarean section with uterine atony being the cause in about 50% cases<sup>4</sup>. PPH remains the

number one killer of mothers and accounts 28% of all maternal deaths in developing countries while in high income countries it accounts about 13% of maternal deaths<sup>8</sup>. There is an increase risk in the PPH due to number of changes in recent years in obstetric practice and maternal demographics; these include increase in the rate of cesarean delivery, a larger proportion of multiple gestation births, and more pregnant women of advanced maternal age<sup>2,3</sup>. PPH caused by uterine atony resulting in transfusion often occurs in the absence of recognized risk factors<sup>1,2</sup>. India alone accounts for over 20 percent of the global maternal deaths even though it has only 16 percent of world population. The United Nations issued 8 Millennium Development Goals (MDG); the fifth goal (MDG-5) stipulated a reduction of the maternal mortality rate by 75 percent by 2015<sup>6</sup>. The level of MMR in India has declined from over 750 in the sixties to about 400 in

the nineties<sup>6,7</sup>. It has further declined from 254 in 2004-06 to 212 in 2007-2009<sup>5</sup> bulletin. Worldwide about half a million women die as results of complications of pregnancy and childbirth<sup>8</sup>. Nearly all (99%) of these deaths are in low and middle income countries<sup>9</sup>. Hemorrhage, usually occurring in the postpartum period, is responsible for between one quarter and one third of obstetric deaths<sup>10</sup>. According to the world health organization, obstetrics hemorrhage causes 127,000 deaths annually worldwide and is the leading cause of maternal mortality<sup>11</sup>. Primary postpartum hemorrhage is the loss of more than 500 ml of blood within the first twenty-four hours of delivery or loss of any amount that is enough to cause hemodynamic instability in the mother or loss of more than 10% of the total blood volume. It is the most common form of postpartum hemorrhage<sup>12</sup>. Secondary postpartum hemorrhage, on the other hand is defined as bleeding in excess of normal lochia after twenty-four hours and up to six weeks postpartum. In both the true loss is often underestimated due to the difficulty with the visual quantification<sup>13</sup>. The risk of dying from PPH depends not only on the amount and the rate of blood loss but also the health status of the woman. A major reason why many patients die from hemorrhage is because once bleeding starts, death can occur in around 2 hours compared to 10 hours for eclampsia and 72 hours for obstructed labor<sup>14</sup>.

## METHODOLOGY

After approval from institutional ethical committee a cross-sectional study was carried out at in the department of OBGY in the patients who were having problem of Post-partum Hemorrhage (PPH) during the one year period i.e. March 2015 to March 2016. After written explained consent total 72 patients were included into the study and other 70 patients who were not having problem of PPH were compared with the associated factors. The details of the patients like age and risk factors like Prolonged labor, Polyhydramnios, Obesity, Multigravida, Diabetes, Fetal Macrosomia Retained placenta, Trauma to Birth canal, Bleeding disorders, Twin pregnancy etc. The statistical analysis done by Z-test (Standard error of difference between two proportions) and if  $Z \geq 1.96$  was considered Significant ( $P < 0.05$ ) this calculated by SPSS software version 17.

## RESULT

**Table 1:** Distribution of the patients as per the Age

| Age group    | No.       | Percentage (%) |
|--------------|-----------|----------------|
| < 19         | 4.0       | 5.56           |
| 20-24        | 7.0       | 9.72           |
| 24-29        | 9.0       | 12.50          |
| 29-34        | 12.0      | 16.67          |
| >34          | 40.0      | 55.56          |
| <b>Total</b> | <b>72</b> | <b>100.00</b>  |

The majority of the patients were from the age group of >34 were 55.56%, followed by 29-34 -16.67, 24-29 were 12.50%, 20-24 were 9.72%, < 19 were 5.56%.

**Table 2:** Distribution of the patients as per the associated factors

| Associated factors    | Patients with PPH (n=72) (No) (%) |        | Without PPH (n=70) (No) (%) |     | P-Value         |
|-----------------------|-----------------------------------|--------|-----------------------------|-----|-----------------|
|                       | No                                | (%)    | No                          | (%) |                 |
| Prolonged labor       | 47                                | 65%    | 14                          | 20% | Z=4.5, P<0.001  |
| Age >34               | 40                                | 55.56% | 13                          | 19% | Z=5.3, P<0.001  |
| Polyhydramnios        | 30                                | 42%    | 12                          | 17% | Z=4.89, P<0.05  |
| Obese (BMI >30)       | 29                                | 40%    | 11                          | 15% | Z=3.92, P<0.01  |
| Multigravida          | 28                                | 39%    | 9                           | 13% | Z=5.1, P<0.001  |
| Diabetes              | 25                                | 35%    | 7                           | 10% | Z=4.75, P<0.001 |
| Fetal Macrosomia      | 24                                | 33%    | 6                           | 9%  | Z=3.56, P<0.01  |
| Retained placenta     | 21                                | 29%    | 5                           | 7%  | Z=2.92, P<0.05  |
| Trauma to Birth canal | 14                                | 19%    | 4                           | 5%  | Z=2.82, P<0.05  |
| Bleeding disorders    | 9                                 | 13%    | 2                           | 3%  | Z=5.2, P<0.001  |
| Twin pregnancy        | 7                                 | 10%    | 1                           | 2%  | Z=4.92, P<0.001 |

The most common associated factors were Prolonged labor ( $Z=4.5$ ,  $P<0.001$ ), Age >34 ( $Z=5.3$ ,  $P<0.001$ ), Polyhydramnios ( $Z=4.89$ ,  $P<0.05$ ), Obesity- (BMI >30) ( $Z=3.92$ ,  $P<0.01$ ), Multigravida ( $Z=5.1$ ,  $P<0.001$ ), Diabetes ( $Z=4.75$ ,  $P<0.001$ ), Fetal Macrosomia ( $Z=3.56$ ,  $P<0.01$ ), Retained placenta ( $Z=2.92$ ,  $P<0.05$ ), Trauma to Birth canal ( $Z=2.82$ ,  $P<0.05$ ), Bleeding disorders ( $Z=5.2$ ,  $P<0.001$ ), Twin pregnancy ( $Z=4.92$ ,  $P<0.001$ ).

## DISCUSSION

Globally, postpartum hemorrhage (PPH) is a leading cause of maternal mortality<sup>15</sup>. The global prevalence of PPH is 6%<sup>16</sup> and the highest burden is experienced in low-income countries<sup>17,18</sup>. The magnitude of PPH in sub-Saharan Africa is high at 10.5%<sup>16</sup>. In Uganda, PPH causes 25% of all maternal deaths<sup>19</sup>. However, there is

little information on the magnitude and risk factors for PPH. Common causes of PPH are uterine atony, genital tract injuries, failure of the blood coagulation system and trauma. Uterine atony is responsible for the majority (75 %) of PPH<sup>20</sup>. Risk factors for PPH include; past history of PPH, multiple pregnancy, fetal macrosomia, primi-gravida, grand multi-parity, older age, preterm births, genital tract injuries, non-use of oxytocics for PPH prophylaxis, labour induction, cesarean birth and intra-uterine fetal deaths<sup>21</sup>. In our study we have found that The majority of the patients were from the age group of >34 were 55.56%, followed by 29-34 -16.67, 24-29 were 12.50%, 20-24 were 9.72%, < 19 were 5.56%. The most common associated factors were Prolonged labor (Z=4.5, P<0.001), Age >34 (Z=5.3, P<0.001), Polyhydramnios (Z=4.89, P<0.05), Obesity- (BMI >30) (Z=3.92, P<0.01), Multigravida (Z=5.1, P<0.001), Diabetes (Z=4.75, P<0.001), Fetal Macrosomia (Z=3.56, P<0.01), Retained placenta (Z=2.92, P<0.05), Trauma to Birth canal (Z=2.82, P<0.05), Bleeding disorders (Z=5.2, P<0.001), Twin pregnancy (Z=4.92, P<0.001). These findings are similar to Sam Ononge *et al*<sup>22</sup> they found Among the 1188 women, the overall incidence of postpartum hemorrhage was 9.0%, (95 % confidence interval [CI]: 7.5–10.6%) and of severe postpartum hemorrhage (1000 mls or more) was 1.2%, (95 % CI 0.6–2.0 %). Most (1157 [97.4 %]) women received a uterotonic after childbirth for postpartum hemorrhage prophylaxis. Risk factors for postpartum hemorrhage among all deliveries (model 1) were: cesarean section delivery (adjusted odds ratio [aOR] 7.54; 95 % CI 4.11–13.81); multiple pregnancy (aOR 2.26; 95 % CI 0.58–8.79); foetal macrosomia  $\geq 4000$  g (aOR 2.18; 95 % CI 1.11–4.29). Risk factors among vaginal deliveries only, were similar in direction and magnitude as in model 1, namely: multiple pregnancy, (aOR 7.66; 95 % CI 1.81–32.34); macrosomia, (aOR 2.14; 95 % CI 1.02–4.47).

## CONCLUSION

It can be concluded from our study that The majority of the patients were from the age group of >34. The most common associated factors were Prolonged labor, Age >34, Polyhydramnios, Obesity- (BMI >30), Multigravida, Diabetes, Fetal Macrosomia, Retained placenta, Trauma to Birth canal, Bleeding disorders, Twin pregnancy

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