# **Original Research Article**

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# Frequency of retained placenta in patients presenting with postpartum haemorrhage after active management of third stage of labour

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### **ABSTRACT**

Background: Postpartum haemorrhage (PPH) is a potentially life-threatening complication. PPH is defined as blood loss of more than 500 ml in vaginal delivery or 1000 ml in caesarean delivery. The most frequent causes are uterine atony, genital tract trauma followed by retained placenta. Active management of third stage of labour reduces the risk of postpartum haemorrhage and should be offered and recommended to all women.

**Methods:** It was a descriptive (cross sectional study) conducted to determine the frequency of retained placenta in patients presenting with postpartum haemorrhage after active management of third stage of labour, conducted in ward 8, Jinnah Post Graduate Medical Centre, Karachi from October, 2013 to April, 2014. A total of 189 patients with postpartum haemorrhage after receiving active management of third stage labour were included in this study. All patients were subjected to detailed history and vaginal examination to confirm retained placenta. Data was recorded in a pre-designed proforma.

Results: Frequency of retained placenta presenting with postpartum haemorrhage after active management of third stage of labour was observed in 20.11%.

Conclusion: It is concluded that active management of the third stage of labour has proved beneficial compared with expectant management based on the decrease in the PPH rate, use of additional uterotonic medication and cost of the

Keywords: Postpartum haemorrhage, Retained placenta, Active management of third stage of labour

## INTRODUCTION

Globally, most common source of maternal deaths if postpartum hemorrhage (PPH). In Africa and Asia, postpartum hemorrhage causes 25% of deaths. In initial 24 hours, the blood loss above 500 ml in normal delivery and 1000 ml in caesarean delivery is indicated as PPH. During third stage of labour, PPH is the most periodic complication. Genital tract trauma, uterine atony, retained placenta are the most persistent causes of PPH. A study claims that after delivery retained placental tissue (RPT) occurs in almost 1% of patients. International and local studies show that, patients with PPH, 33.3% and 11.4% of patients had retained placenta respectively. 1-4

Integrated with severe postpartum haemorrhage, eventuated in almost 3% of deliveries, retained placenta is an obstetric complication. Despite the fact, retained

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placenta confront relatively occasionally on the labour floor, it is the second major indicator of blood transfusion. Women with history of caesarean section have increased risk of retained placenta, a study revealed. Frequent risk factors correlated to retained placenta include previous caesarean delivery, non-booking for antenatal care, previous retained placenta, previous curettage and dilatation, Preterm delivery, less then 500 gm of placental weight, grand multiparity and age above 35 years. Non-use of antenatal care is the most common risk factor with a number of 78.3% followed by lesser placental weight (44.2%). 1,5-7

During third stage of labour, with or without active management, retained placenta is diagnosed clinically when placenta fails to separate spontaneously. To encourage the impulsive placental separation, after delivery and prior to retained placental diagnoses, active management is recommended which includes oxytocin, controlled cord traction and uterine massage. A secure and functional method in the management of retained placenta is to administer oxytocin and nitroglycerine on consecutive bases.<sup>2,4</sup>

The purpose of this study is to determine the frequency of retained placenta among patients having PPH after active management of third stage of delivery. Active management of third stage of labour is a safe, cost effective and life-saving technique designed to prevent PPH. Benefits of practicing this technique to reduce PPH incidence verses risk of increase rates of manual removal of placenta is something to be practiced by future clinicians. If we are able to demonstrate that the rates of retained placenta in AMTSL can be reduced if births are conducted by certified trained birth attendants, then this study will reinforce the views and confidence of the clinicians and trainees in practicing this technique to improve maternal outcome. Addressing such problem can help us in reducing the morbidity related postpartum hemorrhage due to retained placenta.

#### **METHODS**

The study was conducted in ward number 8, Jinnah Postgraduate Medical Center, Karachi from October, 2013 to April, 2014. A total of 189 patients were examined. Consecutive sampling technique was used and sample design was descriptive. All patients of age 25 to 40 years having postpartum haemorrhage after normal delivery in labour room of Jinnah Postgraduate Medical Centre after receiving active management of third stage of labour were included. Patients who had causes other then retained placenta such as abnormally adherent placenta, cervical or vaginal tears, bleeding disorder and history of anticoagulants were not included in the study.

The study was conducted after approval from institutional review board. All patients meeting the criteria, admitted through labour room casualty or Outpatient Department (OPD) were included. All patients with PPH were

subjected to detailed history and vaginal examination to confirm retained placenta. All the information was recorded in a predesigned proforma. All the diagnosis and observations were supervised by an expert obstetrician fellow of CPSP and done by the trainee itself.

The data was analyzed using Statistical package for social sciences (SPSS) version 19. The results given as mean±Standard deviation (SD) for quantitative/continuous variables like age, gestational age, duration of third stage of labour. Frequency and percentages were computed for quantitative variables, like parity, retained placenta, past history of retained placenta, previous caesarean section. Confounders were controlled through stratification of age, parity, past history of retained placenta and previous caesarean section to see the effect of modifications applying chi-square test for quantitative variables, taking p≤0.05 as significant. All the results were presented in the form of tables and graphs.

#### **RESULTS**

The study included 189 patients and majority of the patients were 26 to 35 years old with mean age of 30.25±4.4 years as presented in Figure 1. PPH with respect to age group in described in Table 1.

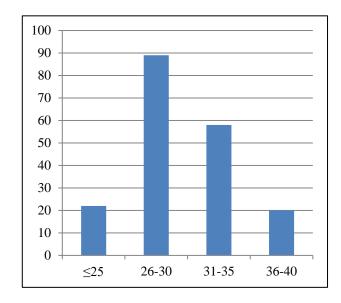


Figure 1: Age distribution of the study.

The mean gestational age and duration of third stage of labour was  $35.57\pm2.35$  weeks and  $31.05\pm11.16$  minutes respectively.

Out of 189 patients 15 (7.94%) were primigravida, 117 (61.9%) were multipara and 57 (30.16) were grand multiparas.

Past history of retained placenta and previous caesarean section was found in 24 (12.7%) and 82 (43.39%) cases respectively and frequency of retained placenta was observed in 20.11% Similarly retained placenta was also

observed high in cases that had past history of retained placenta and caesarean section as presented as described in Table 4 and 5 respectively.

Table 1: Postpartum hemorrhage with respect to age groups.

| A so success                   | Retained placenta |            |       |
|--------------------------------|-------------------|------------|-------|
| Age groups<br>(years)          | Yes (n=38)        | No (n=151) | Total |
| (years)                        | N (%)             | N (%)      |       |
| Less than or equal to 25 years | 04 (18.2)         | 18 (81.8)  | 22    |
| 26 to 30 years                 | 21 (23.6)         | 68 (76.4)  | 89    |
| 31 to 35 years                 | 9 (15.5)          | 49 (84.5)  | 58    |
| 36 to 40 years                 | 4 (20)            | 16 (80)    | 20    |

Chi-square=1.48; p=0.68

Table 2: Frequency of retained placenta in patients presenting with postpartum hemorrhage.

| Castational                          | Retained placenta |               |       |
|--------------------------------------|-------------------|---------------|-------|
| Gestational<br>age groups<br>(weeks) | Yes (n=38)        | No<br>(n=151) | Total |
|                                      | N (%)             | N (%)         |       |
| Less than or equal to 37 weeks       | 35 (26.1)         | 99 (73.9)     | 134   |
| Greater than 37 weeks                | 3 (5.5)           | 52 (94.5)     | 55    |

Chi-square=10.36; p=0.001

Table 3: Frequency of retained placenta in patients presenting with postpartum hemorrhage with respect to parity.

|                    | Retained placenta |            |       |
|--------------------|-------------------|------------|-------|
| Parity             | Yes (n=38)        | No (n=151) | Total |
|                    | N (%)             | N (%)      |       |
| Primigravida       | 2 (13.3)          | 13 (86.7)  | 15    |
| Multipara          | 18 (15.4)         | 99 (84.6)  | 117   |
| Grand<br>multipara | 18 (31.6)         | 39 (68.4)  | 57    |

Chi-square=6.72; p=0.035

Table 4: Frequency of retained placenta in patients presenting with postpartum hemorrhage with respect to past history of retained placenta.

| Past                 | Retained placenta |            |       |
|----------------------|-------------------|------------|-------|
| history of           | Yes (n=38)        | No (n=151) | Total |
| retained<br>placenta | N (%)             | N (%)      | Total |
| Yes                  | 10 (41.7)         | 14 (58.3)  | 24    |
| No                   | 28 (17)           | 137 (83)   | 165   |

Chi-square=7.95; p=0.005

Rate of retained placenta was significantly high in below or equal to 37 weeks gestation (p=0.001) rate of retained

placenta was also significantly high in gland multipara as compared to multipara and primigravida (p=0.035) as presented in Table 3 and 4 respectively.

Table 5: Frequency of retained placenta in patients presenting with postpartum hemorrhage with respect to past history of previous CS.

| Duantana       | Retained placenta |            |       |
|----------------|-------------------|------------|-------|
| Previous<br>CS | Yes (n=38)        | No (n=151) | Total |
| CS             | N (%)             | N (%)      |       |
| Yes            | 23 (28)           | 59 (72)    | 82    |
| No             | 15 (14)           | 92 (86)    | 107   |

Chi-square=5.68; p=0.017

#### **DISCUSSION**

The Joint Commission's 2010 sentinel event alert warns that at least half of the reported maternal deaths are preventable. If a safer birth is to be achieved, maternal deaths related with PPH must be significantly reduced.

In our study, active management of third stage of labour includes three components: administration of uteronic agent (10 IU oxytocin, (intravenous (IV)/intramuscular (IM)) after delivery of fetus, controlled cord traction and uterine massage after delivery of placenta.

Research has shown that effective uterine activity leads to lesser incidences of retained placenta and the speculative concern for placenta entrapment is not supported by data. <sup>10</sup> The use of control cord traction method was reportedly associated with a significant reduction in the duration of the third stage of labour and highly effective in preventing PPH. <sup>11</sup> Cord traction and delivery of the placenta are followed by uterine massage as necessary.

In our study, frequency of retained placenta in patient presenting with postpartum hemorrhage after active management of third stage of labour was observed in 20.11% (38/189). Rate of retained placenta was significantly high in below and equal to 37 weeks gestation as compared to above 37 weeks gestation (p=0.001). Rate of retained placenta was also significantly high in grand multipara as compared to multipara and primigravida (p=0.035). Similarly, retained placenta was also observed high in those cases that had past history of retained placenta and previous cesarean section. Evidence-based literature and the World Health Organization (WHO) support and recommend the active management of the third stage of labour approach, asserting that blood loss and the risk of PPH are decreased by 68%. 9,12-14 Many clinicians would argue that widespread application has reduced PPH but there are also those who have questioned the value of the routine package of active management during the third stage of labour. 15-18 The Hinchingbrooke trial compared expectant and active management of the third stage of labour. 19 Active management resulted in a reduction of maternal blood loss by an average of 79.33 ml and the length of the third stage of labour was decreased

by an average of 9.8 minutes. This led to a decrease in the risk of PPH, postpartum anemia and need for therapeutic oxytocin. This study advocates for active management with oxytocin alone. Prendiville et al summarized 5 major trials in a meta-analysis in the Cochrane library, comparing active versus expectant/physiologic management.<sup>13</sup>

The meta-analysis concludes that active management leads to several benefits.<sup>13</sup> These results were all highly significant as indicated by the 95% Confidence interval (CI). Experts contend that active management of the third stage of labour is safe, effective, and decreases hemorrhage due to uterine atony.<sup>13,14,19,20</sup>

A study done by Fulleron et al who calculated the net benefit of using Active management of the third stage of labour (AMTSL) rather than Expectant management of the third stage of labour (EMTSL) for mothers in Guatemala and Zambia found that the proven clinical benefit of AMTSL is also associated with a distinct financial benefit to health facilities.<sup>21</sup> They believe that these findings although drawn from very cautious cost estimates, assumptions and procedures offer a compelling argument in support of the introduction of AMTSL as a clinical practice guideline, with both client and facility benefits as an outcome.

#### **CONCLUSION**

The result of our study concluded that active management of the third stage of labour has proved beneficial compared with expectant management based on the decrease in the PPH rate, use of additional uterotonic medications and cost of care. Active management of the third stage of labour is a safe, cost effective and life-saving technique designed to prevent postpartum hemorrhage. Transitioning practice from an expectant approach to an active method requires a multi-disciplinary team, significant planning and quality management by certified trained birth attendants and may be a key initiative to improve maternal safety and outcome.

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