

COMPARISON OF ACTIVE VERSUS EXPECTANT MANAGEMENT OF THIRD STAGE OF LABOUR

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ABSTRACT

Objective: To find out the difference between active and expectant management of third stage of labour in terms of amount of blood loss and duration of third stage of labour.

Methodology: This quasi experimental study was conducted in the Unit "B" of department of Obstetrics and Gynaecology, Lady Reading Hospital from June - December 2006. A total of 100 patients were included in the study, out of which 50 patients under went active management of third stage of labour (AMTSL) and 50 patients had expectant management. Formal consent was obtained from all the patients. Apart from the demographic data, details regarding the amount of blood loss and duration of third stage were recorded on a semi structured proforma and analyzed by using Chi Square test, with p value of <0.05 considered as significant.

Result: In the active management group most of the patients had blood loss less than 100ml while in the expectant group most of the blood loss was between 100-200ml. Mean blood loss in the active group was 72.5 ± 36.83 ml and expectant group was 177.4 ± 59.65 ml, p value <0.001. Similarly the difference in the duration of the third stage was statistically significant between the two groups (p value <0.001).

Conclusion: AMTSL was associated with statistically significant decrease in the blood loss and shorter duration of third stage of labour.

Key words: Third stage of labour, Post partum hemorrhage (PPH), Active management of third stage of labour (AMTSL), Control cord traction (CCT).

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INTRODUCTION

Worldwide, the most important cause of maternal mortality is primary postpartum hemorrhage (PPH)¹. PPH occurs in around 4% of vaginal deliveries and 2-11% of all deliveries². Similarly audits of "near miss mortalities" have reported primary PPH as the leading cause of severe maternal morbidity^{3,4}. In most of the cases these maternal deaths can be prevented by improving the antenatal, intranatal and postnatal maternal care. The 2003-2005 triennium report has given the statement that even in UK 58% of the women were given substandard care. To decrease the incidence of PPH, different measures can be taken. Active management of third stage of labour (AMTSL) is one of the important steps in this regard⁵.

According to WHO recommendations, there are 3 important steps in AMTSL which include; 1) uterotonic agents, preferably oxytocin, immediately after the delivery of the baby, 2) clamping and cutting of cord immediately

after delivery of the baby to enhance placental separation and then controlled cord traction (CCT) for delivery of the placenta; 3) massage of uterine fundus after delivery of placenta. While in expectant management there is no use of prophylactic oxytocic agent, no cord clamping until pulsation cease and delivery of placenta by maternal effort and gravity rather than cord traction and no routine use of uterine massage until the uterus is atonic⁶.

PPH has traditionally been defined as blood loss of greater than 500ml from genital tract within 24 hours of birth of baby. PPH was reduced from 40.4 to 82% and severe PPH from 7.5 to 1% in AMTSL. Active management also reduces the risk of prolonged 3rd stage of labour. The CCT has reduced the duration of third stage of labour from 12 to 6 minutes and this in turn reduced the need for manual removal of placenta⁷.

Although extensive work has been done internationally to compare active vs. expectant management of third stage of labour. But local data was insufficient

in this regard. So we have selected this topic to see the difference in both the managements under our local circumstances.

METHODOLOGY

This quasi experimental study was conducted in Unit "B" of department of Obstetrics and Gynaecology, Lady Reading Hospital Peshawar from June to December 2006. A total of 100 patients were selected by non-probability convenient sampling technique, 50 were managed actively and 50 cases were managed expectantly. Primigravida patients admitted in labour room for normal vaginal delivery with full term singleton cephalic pregnancy with spontaneous onset of labour and having no medical disorder were included after formal consent. While patients having risk factors for PPH e.g., ante partum hemorrhage, chorioamnionitis, uterine over distension (macrosomic baby, polyhydramnios, twins), prolonged labour, instrumental delivery, anemia and those having any medical disorders were excluded from the study. Detail history and examination were done and routine investigations were sent. After fulfilling the selection criteria patients were then randomly allocated to the active or expectant management groups by using random number table.

The first group was managed actively by giving 10 units Syntocinon I/V immediately after the delivery of the baby, and placenta was delivered by controlled cord traction. CCT was applied by the method introduced by Spencer PM⁸. In this method placental separation is not waited and once the uterus contracts the CCT is initiated by applying traction on the cord with one hand and supporting the uterus with other hand. The second group was managed expectantly. Injection Syntocinon was not given and placenta delivered by maternal efforts and gravity rather than CCT.

Blood loss estimation was done by 1) graduated container to collect the blood; 2) soaked pads. Dry pads were weighted first and then the soaked pads. Blood loss of 1ml will be equal to 1gram of weight gain (1ml=1gm). Container was put under the introitus during the third stage of labour to collect all the blood losses and then pour the collected blood into a graduated container in order to measure the amount of blood loss. Third stage of labour was defined as duration after the delivery of the baby till delivery of the placenta. Duration of third stage of labour was calculated in minutes. All this information was recorded on a pre designed proforma. Data was analyzed using SPSS vs. 16. Chi square test was applied with p value of <0.05 considered as significant. Mean and standard deviation was calculated for descriptive statistics.

RESULTS

Total number of patients was 100. Out of which 50 patients underwent active management of third stage and rest have received expectant management. There was no significant difference between the ages of the two groups (p= 0.356). The average age of the patients in the active management group was 25.6±2.76 years, while in the expectant management group, the mean age was 26.1±3.45 years (Table 1).

There was no significant association observed between gestational age (in weeks) of the two groups (p=0.189). Mean gestational age in active group was 38.5±0.74 and expectant group 38.3±0.62. Table 1

In most of the cases the blood loss was less than 100ml in the active group while in expectant group most of the blood loss was between 100-200ml. Mean blood loss in active group was 72.5±36.83 ml and expectant group 177.4±59.65 ml (p=<0.001) [Table 2].

Table 1: Demographic details of the patients (n=100)

		Active Group (50)		Expectant Group (50)	
Maternal Age (years)	<25	10	25.6±2.76	11	26.1±3.45
	25-35	37		36	
	>35	3		4	
Gestational age (weeks)	37-40	48	38.5±0.74	46	38.3±0.62
	>40-42	2		4	

Table 2: Distribution of blood loss of patients of active and expectant groups

Blood Loss	Active Group (n=50)	Expectant Group (n=50)	P value
<100ml	44	4	<0.001
100-200ml	5	31	
>200ml	1	15	

Table 3: Distribution of duration of third stage of labour by active and expectant groups

Duration of 3rd Stage	Number of patients(n= 100)	Groups		p-value
		Active(50)	Expectant(50)	
<1 minute	24	24	0	<0.001
1-5 minutes	36	26	10	
>5 minutes	40	0	40	

Similarly the difference in the duration of third stage was statistically significant between the two groups ($p=0.001$) [Table 3].

DISCUSSION

Worldwide and especially in the under developed countries PPH is the most important cause of maternal mortality. In 2007 WHO recommended AMTSL as the most important step in the prevention of PPH⁶. Different studies have been done to compare active vs. expectant management of third stage of labour.

Jangsten et al in their randomized control trial has demonstrated that there was only 10% blood loss in woman who received AMTSL as compared to 16.8% blood loss in the woman who didn't (p value of <0.001). Also multiple logistic regressions resulted that for every five minutes duration before delivery of the placenta, bleeding increased by 40ml. The duration of third stage of labour was also decreased by AMTSL and the difference was statistically significant with p value <0.001 ⁹. Our study is consistent with the above study. Hoffman M in their study have shown 8.8% incidence of PPH in the AMTSL group as compared to 22.5% in the expectantly managed group with p value <0.025 . Also duration of third stage of labour was also decreased, 7.6 vs. 9.6 minutes, with p value <0.005 ¹⁰. Begley CM in their systematic review has shown that AMTSL was associated with a decreased blood loss as compared to expectant management. The average mean difference in the blood loss was -78.80 ml with RR 0.34. Regarding mean length of third stage of labour, this study showed no statistically significant difference¹¹.

Similarly other studies have also demonstrated the role of AMTSL in the prevention of PPH¹²⁻¹⁵.

Although there is some variation across AMTSL guidelines but a Multicentre clinical trial showed that the most important AMTSL component was the administration of an uterotonic agent¹⁶. According to the new WHO recommendations uterotonic agents (oxytocin) is the most important step of the AMTSL. While the other two steps i.e., CCT and uterine massage can be adopted depending on the availability of the staff and expertise¹⁷. Although WHO trial has reported that there was a small difference in the amount of blood loss in the woman who delivered their placenta by CCT as compared to spontaneous delivery of placenta, the blood

loss was 10ml less in the CCT group. The important difference, however, was the duration of third stage of labour, which was about six minutes longer in the woman who delivered their placenta spontaneously without CCT. This difference can be important for busy delivery suit with large number of patient input, although not very important for the individual woman. In our study, the difference in the duration of third stage between the two groups was statistically significant. In 80% of expectantly managed patients the duration of third stage of labour was >5 minutes. While in the actively managed group it was less than 5 minutes.

Sheldon et al had done a systematic assessment of the relative effectiveness of different components of AMTSL. They have documented that the significance of CCT is only if the uterotonic agents are not available or if oxytocin is given intramuscularly. But if oxytocin is given intravascular then CCT may not be necessary. Also there were no complication reported with CCT e.g. uterine inversion and cord separation from placenta, and this is because CCT was performed by highly skilled doctors and nurses. CCT is important in the under developed areas where oxytocin is either unavailable or given intramuscularly¹⁸. In our study although oxytocin was administered by intravascular route because patient were already having an I/V line in situ and also delivery was performed by skilled doctors, so the complications of CCT were not observed.

CONCLUSION

AMTSL (I/V oxytocin and CCT) was associated with statistically significant decrease in PPH and also duration of third stage of labour. Also our study has shown that oxytocin and CCT without uterine massage can give significant results in terms of blood loss and duration of third stage of labour.

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CONTRIBUTORS

RK and FP helped in data collection and write up of the manuscript. MFM conceived the idea, collected the data and wrote the initial draft. All authors contributed significantly to the final manuscript.