

Maternal Outcome in Active and Expectant Management of Third Stage of Labour

SHAMAS-UN-NISA, SADAF-UN-NISA, MEHAR-UN-NISA

ABSTRACT

Aim: To compare the maternal morbidity in active and expectant management of third stage of labour.

Study design: It was Quasi-experimental (Interventional) study.

Duration: The study was conducted from April 2007 to September 2007.

Settings: Department of Obs. & Gynae, B. V Hospital, Quaid-e-Azam Medical College, Bahawalpur.

Methods: A total of one hundred (100) patients with vaginal delivery, Primigravida, and at Term gestation (37-42 weeks) and patients with Chorioamnionitis, Multiple gestation and High risk pregnancy (Diabetes, hypertension, Rh. Incompatibility) were excluded from the study.

Results: In our study, It was noted that the duration of third stage of labour in active management group was 7.34 minutes and in expectant group was 12.46 minutes. The incidence of primary postpartum hemorrhage was 6% and 16% in active and expectant managed group respectively. The placenta was retained more in expectant management (6%) than in active management (2%). The mean duration of hospital stay was 1 day in active management group and 1.44 days in expectant group. Side effects were observed in actively managed group.

Conclusion: Active management of third stage of labour is associated with fewer cases of postpartum hemorrhage, lower incidence of prolonged third stage of labour, retained placenta, short duration of postpartum hospitalization with slight increased incidence of maternal side effects.

Keywords: Active management, expectant management, third stage of labour, pp hemorrhage,

INTRODUCTION

Labour is defined as process by which regular painful uterine contractions bring about effacement and dilation of cervix and descent of presenting part ultimately leading to expulsion of fetus and placenta from mother. Third stage of labour is the time from delivery of fetus/s until the delivery of placenta¹.

In developed countries hemorrhage still figures in the top four causes of maternal mortality, ranking third or four after thromboembolism, hypertensive diseases and amniotic fluid embolism. In developing countries 28% maternal deaths each year are caused by postpartum hemorrhage². Worldwide around 515,000 women die annually from maternal causes many within four hours of delivery often from postpartum hemorrhage³.

The commonest cause of postpartum hemorrhage was atonic uterus (65%) followed by traumatic lesion (33%) and retained placenta (27%)⁴. Most of the patients having uterine atony responded to medical or surgical treatment with average hospital stay of seven days⁵. A study conducted at Lady Wellington Hospital, Lahore shows that the commonest cause of primary postpartum hemorrhage was uterine atony in 54% cases. Most of

them responded to medical or surgical treatment with average hospital stay of 7 days.

Prevention of uterine atony is the key to reduce the incidence of postpartum hemorrhage. The benefits of active management of third stage of labour are well documented⁶. Active management of third stage of labour is administration of prophylactic oxytocic agent within 2 min of baby's birth. Immediate cutting and clamping of cord and placental delivery by controlled cord traction⁷.

An area of controversy has been whether to administer the uterotonic agent at the time of delivery of the anterior shoulder or after the delivery of the placenta. There is concern that administration of these agents before the delivery of the placenta may increase the risk of manual removal of the placenta.⁸

In study conducted by Roger J et al, women were categorized to have either active management of third stage of labour or expectant management. The rate of postpartum hemorrhage was significantly lower in active managed group⁹. Injectable uterotonic such as oxytocins are unstable in high temperature and require cold chain storage and skill¹⁰.

However, we planned this study to compare the maternal morbidity in active and expectant management of third stage of labour and hypothesized that there is a difference in maternal morbidity so far the active and expectant management of third stage of labour is concerned.

^{1,2}Department of Gynaecology, BVH Bahawalpur, ³District Gynaecologist, Jahanian

Correspondence to Dr. Shamas un Nisa

MATERIAL AND METHODS

A total of 100 patients with vaginal delivery, Primigravida, and at Term gestation (37-42 weeks) and patients with Chorioamnionitis, Multiple gestation and High risk pregnancy (Diabetes, hypertension, Rh. Incompatibility) were excluded from the study. The study was conducted at Obstetrics and Gynaecology B.V Hospital, Quaid-e-Azam Medical College, Bahawalpur during April 2007 to September 2007.

All the cases were explained the merits, demerits and objective of the study and their written consent were taken. Cases were divided into two groups A and B, having comparable age and socio-economic status to minimize the effect of confounders. Every eligible case was offered two folded slips having letter 'A' and 'B' and was asked to pick one of them to allocate the group on random basis. Group 'A' included the patients who received expectant management of third stage of labour. Group 'B' included those cases who received active management i.e., (i) Early cord clamping and cutting before the cessation of cord pulsation. (ii) Delivery of placenta by controlled cord traction. (iii) 10 International Units of oxytocin intravenous within 2 minutes of delivery of fetus.

The data was collected through pre-designed proforma and analyzed by using SPSS Version 10. Frequencies were calculated for qualitative variables (primary postpartum hemorrhage and side effects of the drug, retained placenta) and (graphs) tables were made for study variables. Difference of different variables (duration of third stage of labour, primary postpartum hemorrhage, retained placenta, duration of hospital stay and side effects of drug) in both group were noted. Any difference observed was subjected to statistical significance. Mean \pm SD were calculated for duration of third stage of labour and duration of hospital stay is quantitative variables so, test of significance was t-test. While side effects, primary postpartum hemorrhage and retained placenta being qualitative in nature were subjected to Chi-Square test. $P \leq 0.05$ is taken as significant.

RESULTS

The mean duration of third stage of labour in active management group was 7.34 min and 12.46 min in expectant group. The results were significant because actual difference between two means is more than standard error difference between two means (Table 1). The incidence of primary pph is less in active management group (6%) than expectant group (16%). But the results are not statistically significant because P-value is 0.11 which is >0.05 (Table 2). The observed percentage of

retained placenta is also more in expectant management group (6%) than active group but again results are not statistically significant because P value is 0.307 which is >0.05 (Table 3). The mean duration of hospital stay in active management group is 1.000 days and 1.4400 days in expectant management group. Results are statistically significant as actual difference between two means is more than standard error difference between two means (Table 4). In 14% of actively managed cases, side effects were observed (Table 5).

Table 1: Duration of third stage of labour (n=100)

Group	Mean	SD
Active management	7.34 min	0.9607
Expectant management	12.46 min	2.7569

Table 2: Primary Postpartum Hemorrhage. (n=100)

Group	PPH		Total
	Yes	No	
Active management	3 (6%)	47 (94%)	50
Expectant management	8 (16%)	42 (84%)	50

P value=0.11

Table 3: Retained Placenta (n=100)

Group	PPH		Total
	Yes	No	
Active management	1(2%)	49(98%)	50
Expectant management	3(6%)	47(94%)	50

P value=0.307

Table 4: Duration of Hospital Stay. (n=100)

Group	Mean	SD
Active management	1.1000	0.4165
Expectant management	1.4400	1.0529

DISCUSSION

Active management of third stage of labour (Prophylactic oxytocin clamping the cord before placental delivery, and cord traction) is widely practiced by few randomized trials have documented its efficacy. Although most of results of my study are not statistically significant but these are in general agreement of those randomized trials. This probably because of short sample size, difference in study population, variables and projection of problems. An interim analysis of data of my study revealed a high rate of postpartum hemorrhage in expectant group (16%).

These results are comparable to Nordstrom et al who describes 8.8% cases of postpartum hemorrhage with active management while 15.2% with expectant management¹¹. Same thing is described by Khan G et al in his study that is increased incidence of postpartum hemorrhage with expectant management of third stage as compared to active management¹².

As long as the duration of third stage of labour is concerned, it is prolonged with expectant management. The mean difference between the two groups in my study is 5.1200 minutes which is comparable with a little difference with Prendiville et al who describes mean difference of 3.40 minutes in study¹³. The mean duration of third stage of labour in my study is 7.34 minutes in active management group and 12.46 minutes in expectant group. It is almost same as described by A drew D. weeks i.e. 8.8 minutes in active group and 15.5 minutes in expectant group¹⁴. The incidence of retained placenta in my study is 2% in active group and 3% in expectant group which is almost same as described by Khan GQ et al in his study (1.6% in active group vs. 4.5% in expectant group). Dublin trial is the only trial which shows an increase of manual removal of placenta with oxytocic drugs (relative risk, 19.5; 95% CI 2.6-145.4)¹⁵. While comparing the mean duration of hospital stay in both groups there is a very little difference in both in my study (1.1000 days in active vs. 1.4400 days in expectant group). Nordstrom also describes the same that there is very little difference in postpartum hospitalization (4-5 days vs. 4-6 days) in both groups¹¹.

As long as the side effects are concerned these are more in active management group as compared to expectant group (14% vs. 0%). Prendivielli et al also says in his study that active management is associated with increased risk of maternal nausea and vomiting¹³. So the critical review of the results shows that active management of third stage of labour is very much important in obstetrics care. Bibi S. describes that in our country almost 40% of maternal deaths are due to postpartum hemorrhage and postpartum hemorrhage can be prevented by active management of third stage of labour¹⁶. So, the routine prophylactic administration of an uterotonic agent is an integral part of active management of third stage of labour, helping to prevent the postpartum hemorrhage¹⁷.

Analysis of different studies conclude that active management should be the routine management of choice for a woman expecting a single baby by vaginal delivery in maternity hospital. However, further studies have to be done to assess whether certain aspects of active management are more effective than others.

CONCLUSION

Active management of third stage of labour should be routine after uncomplicated vaginal deliveries in a hospital setting. It is associated with fewer cases of postpartum hemorrhage, lower incidence of prolonged third stage of labour, retained placenta,

short duration of postpartum hospitalization with slight increased incidence of maternal side effects.

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