Original Article

Comparison and the Duration of Third Stage of Labour with or without Cord Blood Drainage in Females Undergoing Normal Vaginal Delivery at Term

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Abstract

Objective: To contrast the mean duration of labour's third stage with cord blood drainage in females undergoing normal vaginal delivery at term

Methodology: This randomized control trial was held at Obstetrics & Gynecology department of Lady Willingdon Hospital Lahore from July 2018 to January 2019. Patients with the third stage of labour underwent normal vaginal delivery at term were included. Patients were divided into 2-groups via lottery technique. For group A, cord blood drainage was done while in group B, cord blood was not drainage. After delivery of fetus, duration was noted till the delivery of the placenta. Data was collected via self-made proforma and analyzed by the 20th version of SPSS.

Results: Patients' mean age was 29.59±6.72 years and average gestational age was 39.50±1.13 weeks. The average of 3rd stage labors' duration was 5.50±1.56 minutes. Statistically, the significant variance was seen between both study groups according to the duration of 3rd stage labor i.e. p-value=0.000.

Conclusion: Blood drainage of the cord is an effective method to minimize the loss of blood and duration of the delivery of placenta as compared to those without cord blood drainage undergoing normal vaginal delivery at term.

Keywords: Cord, Drainage, Blood, Duration, Stage, Labour.

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Introduction

The labor's third stage begins following the fetus delivery to the membranes' and placental eviction.[1] The third stage of labor is a period of concern because normal cases may become abnormal within no time and can result in maternal mortality. The Indian nation seems to have a high rate of maternal mortality with 4 live births per 1000 cases, while in developed nations there are 1 to 4 live births per 10,000 cases. Postpartum hemorrhage is by far the most common trigger of mortality among mothers which is responsible for nearly one-fourth of maternal mortality.[2] In 2011, it was reported that maternal mortality induced by PPH was 17.5% in Pakistan.[3]Third stage labor can be managed expectantly or actively. The active

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administration involves management with cutting and clamping of the cord, oxytocic drugs, and regulated traction of cord.[4] It has been proposed that cord unclamping on the mother's side and placental blood release should be practiced to make the placental delivery simple because physiologically it is evident that placental blood-drainage decreases its mass enabling the effective contraction and retraction of uterus for easy placental delivery which can minimize the length of the labor's 3rd stage.[1,4] The duration of 3rd stage of labor becomes much lesser if cord blood is drained.

Drainage of placental blood is non-invasive, safe and simple procedure that minimizes the length of the labor's 3rd stage.[5] In a trial, conducted by Jongkolsiri et al., it was found that the mean length of labour's 3rd stage was significantly shorter following the drainage of placental cord as compared to no cord blood drainage and thus drainage of placental cord reduces the 3rd stage labor duration. This method is simple and does not raise postpartum complications.[6] In other trials, conducted by Al-Jobbery and Stealth it was revealed that the mean length of labour's 3rd stage was significantly shorter following the drainage of the placental cord. It was inferred that drainage of placental blood contributes significantly in diminishing blood loss and its length and during 3rd stage labor.[1] This study has been undertaken with a rationale to compare the mean duration of labor with or without cord blood drainage in females undergoing normal vaginal delivery at term. Through literature, it has been noticed that cord blood drainage can be helpful in the early completion of 3rd stage labour. It is in casual practice that often placenta does not eject from its position and manual removal is required especially in prmigravidas.

Cord blood drainage may help in early placental removal which may also reduce the blood loss and prevent females from complications. But unluckily, local evidence is missing which could have helped implement this practice. So this study reveals its significance in discovering whether this method is as effective as reported in many international studies.

Methodology

This Randomized Controlled trial was held at Obstetrics & Gynecology Department of lady willingdon hospital, Lahore from July 2018 January 2019. Females age 18-40 years, of parity <5 presenting with at term (gestational age above 37 weeks, in active labour for normal vaginal delivery, were included in the study. Females with hypertensive disorders, gestational diabetes or previous cesarean section, anemia, Induced labor or instrumental delivery cases, multiple gestations, malpresentation, macrosomia, or fetal anomaly on scan, hydramnios on USG were excluded. After the approval of the ethical committee of the hospital, Obstetrics &Gynecology Department of Lady Willingdon Hospital Lahore, informed consent was obtained. After taking demographic information patients were divided into two groups (A & B) by lottery technique and 150 cases were placed in each group. In group A, cord blood drainage was done while in group B, no cord blood drainage was done and females underwent a normal course of labour. After the delivery of fetus, the duration of the third stage was noted till the delivery of the placenta. All this data was collected by a pre-planned proforma. Data analysis was done by 20th version of SPSS. Quantitative variables were calculated as mean & standard deviations. Qualitative variables including parity were computed as frequencies. Comparison among both groups was made by independent sample t-test for mean length of 3rd stage labor. P-value of 0.05 or less was considered significant.

Results

Total 300 cases were studied, with a mean age of 29.73±6.56 years for group-A and 29.46±6.88 years for group-B. The mean gestational age of group-A was 39.56±1.13 weeks and group-B patients appeared at 39.45±1.12 weeks. Mean parity of group A was 3.12±1.32, and mean parity of group B was 2.12±1.34. (Table I)

Table I: Mean age and gestational age of patients (n=300)

Variables		Study Groups	
		Group A	Group B
Age (years)	No of patients	150	150
	Mean±SD	29.73±6.56	29.46±6.88
Gestational age (weeks)	Mean±SD	39.56±1.13	39.45±1.12
Parity	Mean±SD	3.12±1.32	2.12±1.34

Group A= with cord blood drainage
Group B= without cord blood drainage

Out of 300 cases the mean value of duration of 3rd stage labor was 4.48±1.17 minutes in group-A, which was markedly lower as compared to group B as 6.53±1.19 minutes. Findings were statistically significant (p-0.000). (Table II)

Significant variance was noted for length of third stage among both groups with respect to age and gestational age. The mean duration of labour among both groups was significant when observed according to age and gestational age, p-values were quite significant. (Table III)

Table II: Comparison of duration of 3rd stage labor with study groups (n=300)

		Study Groups		p-value
		Group A	Group B	
Duration of 3rd stage labor	N. of patients	150	150	0.001
	Mean	4.48	6.53	
	SD	1.17	1.19	

Table III: Duration of 3rd stage labor according to age and gestational age (n=300)

Duration of 3rd stage labor	Group A	Group B	p-value
Age (years)			
Up to 30	4.47±1.19	6.69±1.165	0.001
Above 30	4.49±1.17	6.34±1.20	0.001
Gestational Age(weeks)			
38-39	4.52±1.205	6.37±1.196	0.001
40-41	4.44±1.152	6.69±1.171	0.001

Discussion

The third stage of labour begins after birth and ends of the placental expulsion and fetal membranes. Placental cord drainage implicates the clamping and cutting of the umbilical cord after birth and immediately after unclamping the maternal side of cord and allowing free blood to drain. In this study, the cord drainage management groups significantly showed less duration as compared to without cord drainage group. Giacalone et al studied that 239 females with cord drainage of the placenta and 238 females with spontaneous placental delivery reported, that the mean duration of the 3rd stage was lesser in cord drainage as compared to the controls.[8] Soltani H et al exhibited that Cord drainage showed a small decline in blood loss and length of 3rd stage labour. Another study by the same author presented that cord drainage can impact the 3rd stage labour as the findings exhibit a statistically significant decline in the length of 3rd stage labour.[9,10] Savage J and Silva P reported that the length of the third stage was shorter in the cord drainage group similarly was the blood loss contrasted to the control group.[11] One more study by Al –Jeborry et al described in his study that the mean length of 3rd stage was smaller in cord drainage group as contrasted in the control group. In 1999, Razmkhah was the 1st to report a significantly short length of 3rd stage of labour by using the method of placental cord drainage.[7,12] In a randomized trial, conducted by Jongkolsiri et al., it was concluded that drainage of placental cord shortens the length of 3rd stage labour. This technique ensures safety without allowing the complications to increase. In another trial, conducted by Al-Jeborry et al., it was revealed that the mean length of 3rd stage labour occurred significantly shorter following the drainage of the placental cord.[6,7] In a study done by Hang Lin Wu, Umbilical cord drainage reduced the length of 3rd stage labour, however blood loss was not reduced. The study done by Mohamed and colleagues, placental cord drainage was seen to diminish the risk of post-partum hemorrhage and the duration of 3rd stage labour.[13,14] In a study done in India duration and blood loss in third stage, a drop in hemoglobin, and the need for transfusion in the intra and post-partum period was less in the placental cord drainage group. Two recent studies have shown reduced blood loss and reduced duration of third stage of labour in the placental cord drainage group.[1516,17] However two studies failed to find any additional benefit from the drainage of the placental cord. Regarding postpartum complication, most studies failed to find any significant rise in complications.[18,19]

Conclusion

Blood drainage with cord is an effective and simple technique that minimize the loss of blood and length of third stage of labour as compared to without cord blood drainage group patients in females undergoing normal vaginal delivery at term. It can be used in rural setup as well as in tertiary care centers.

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