ORIGINAL ARTICLE

Effects of Early Vs Delayed Umbilical Cord Clamping During Antepartum Lower Segment Caesarean Section on Post Operative Blood Loss

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ABSTRACT

Background: Umbilical c0rd clamping is part of active management of the labour, however timing of umbilical cord clamping remained debatable.
Aim: To compare the mean postoperative blood loss after early vs delayed umbilical cord clamping during ante partum lower segment caesarean section.
Study Design: Randomised Control Trial
Settings: Department of Obstetrics and Gynaecology, Sheikh Zayed Hospital, Rahim Yar Khan.
Duration of study: July 2016 to July 2017
Results: A total of 120 patients (60 cases in each group) were included in this study during the study period. In group A early umbilical cord clamping was carried out while in group B delayed cord clamping was done. Postoperative mean haematocrit was 30.70±2.18 in group-A and 32.25±283 in group-B (p=0.001)
Conclusion: It is concluded that delayed cord clamping is beneficial in terms of postoperative blood loss. Delayed umbilical cord clamping is considered to be safe and very effective and so sh0uld be implemented in all caesarean sections.
Keywords: Delayed umbilical cord clamping, Early umbilical cord, clamping, Blood loss,

INTRODUCTION

After birth of the child umbilical cord cutting is done since ages but timing of the clamping of umbilical cord and advantages of early versus delayed umbilical c0rd clamping are still debateable[1,2]. Early clamping of the umbilical cord is usually carried 0ut within a few seconds post birth, while delayed clamping of the cord involves clamping of the umbilical c0rd from one minute up to three minutes after the birth or until the cord pulsations have ceased[3]. There are no standardised practical guidelines on clamping of umbilical cord , but majority of obstetricians practicing in developed countries usually clamp and then cut the c0rd immediately after the birth, however practice in various developing countries differ widely[4]. Different studies have been carried out which have demonstrated beneficial effects of delayed clamping of umbilical cord on newborns such as lower incidence of intraventricular hemorrhage and late-onset sepsis[5]. Delay in umbilical cord clamping also has beneficial effect on iron status of the neonate[6]. As a result of various demonstrable benefits of delayed cord clamping, various international organizations and institutions are recommending this practice[7,8] in recent years. Though various randomised controlled trials of term and pre term infants have been carried out to evaluate the benefits of early cord clamping versus delayed umbilical cord clamping ,the ideal time for umbilical cord clamping still remains controversial[9,10]. At present there are currently no standard clinical guidelines regarding the timing of umbilical cord clamping[11]. Hence , the timing between birth and clamping of the cord is mainly decided by the individual practitioner which is largely based upon the personal preferences.

Rationale of my study is to find the impact of Early and Delayed umbilical cord clamping on post operative blood loss . Hence this study will help in determining whether early or delayed umbilical cord is more effective in reducing postoperative blood loss and hence decreasing requirement of post operative blood transfusion and complications related to blood transfusion can be prevented. Moreover simple procedure of umbilical cord clamping will help in reducing incidence of anaemia in women of childbearing age. For developing countries, who have very limited resources and a high risk of infection transmission as a result of blood transfusion, the

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potential importance of a reduced need for blood transfusion would be of specific interest.

MATERIALS AND METHODS

This randomized controlled trial was conducted in the Department of Obstetrics and Gynaec0logy, Sheikh Zayed Hospital, Rahim Yar Khan. Study was carried out over a period of one year from July 2016 to July 2017. Sample size of 120 females; 60 females in each group is calculated with 95% confidence interval, 80% power of test and taking magnitude of bleeding (203.52 ±122.74 ml versus 200.74±104.07 ml in early and delayed cord clamping respectively). Consecutive (non-probability) sampling technique was used.

Sample selection: Patients of age 21–40 years undergoing LSCS with singleton, term pregnancy (gestational age 37 – 41 weeks) irrespective of parity confirmed by ultrasonography ere included in the study while patients with multiple gestation confirmed by sonography, preterm pregnancy(<37 weeks of gestation),Rhesus negative blood group, patients with biochemically confirmed diabetes mellitus, diagnosed cases of pre-eclampsia and eclampsia and patients with episodes of ante-partum haemorrhage were excluded from the study.

Data collection procedure: After approval from hospital committee 120 patients fulfilling the inclusion criteria were recruited from Gynaecology outpatient Department of Sheikh Zayed Hospital, Rahim Yar Khan. Written informed consent was obtained from the patients.

Patients were rand0mly divided int0 two equal groups (A & B) by lottery method. In group A early umbilical cord clamping was carried out while in group B delayed cord clamping was done. Caesarean section was performed by postgraduate trainee of 3rd or 4th year. Umbilical cord clamping was carried out either early or delayed as per grouping of the patient. Amount of blood loss was measured by measuring postoperative haematocrit levels.

Data analysis procedure: All the data collected through the perf0rma was entered into the SPSS version 13.0 and analyzed through its statistical package. Mean and standard deviation was calculated f0r variables like age, BMI and p0stoperative blood loss. Frequency and percentage was calculated for qualitative variables like parity. Independent sample t test was used to compare results between two groups. p value ≤o.o5 was considered significant. Confounding variables like age, gestational age, BMI and parity was controlled through stratification. Post-stratification independent sample pretest was applied. p value ≤0.05 was considered significant.

RESULTS

A total of 120 patients (60 cases in each group) were included in this study during the study peri0d of one year from july 2016 to july 2017. In group A early umbilical cord clamping was carried out while in group B delayed cord clamping was done.

Mean age of the patients was 27.82±4.70 and 28.30±5.26 year in group-A and B, Respectively (Table-1). Mean gestational in group-A was 38.85±1.30 and in group-B 38.63±1.35 weeks (Table-2). Mean BMI was seen 29.37±2.33 in group-A and 29.83±1.70 (kg/m^2) in group-B). Primigravida were 21(35%) in group-A and B. Similarly multigravida were 39(65.%) in both groups. Postoperative mean haematocrit was 30.70±2.18 in group-A and 32.25±283 in group-B (p=0.001) (Table-3)

Table 1: Distributi0n of patients by age

Age (Year)	Group-A		Group-B	
	No.	%	No.	%
21-30	41	68.3	38	63.3
31-40	19	31.7	22	36.7
Total	60	100.0	60	100.0
Mean±SD	27.82±4.70		28.30±5.26	

Table 2: Distribution of patients by gestational age

Gestational age (weeks)	Group-A		Group-B	
	No.	%	No.	%
37-39	40	66.7	44	73.3
40-41	20	33.3	16	26.7
Total	**60**	**100.0**	**60**	**100.0**
Mean±SD	**38.85±1.30**		**38.63±1.35**	

Table 3: Comparison of of haematocrit level

Haematocrit	Group-A		Group-B	
	Mean	SD	Mean	SD
Haematocrit (preoperative)	34.40	2.29	34.12	2.92
P value	P=0.556			
Haematocrit (postoperative)	30.70	2.18	32.25	2.83
P value	P=0.001			

DISCUSSION

In present study significant difference was found in terms of post operative blood loss measured by post operative haematocrit levels. Though various studies have shown no difference in post operative blood loss between early and delayed umbilical cord clamping[13] but majority of these studies assessed outcome after vaginal deliveries whereas in our study outcome was assessed after lower segment caesarean section. So more studies are required so

as to clearly demonstrate the effect of delayed clamping of umbilical cord on post operative blood loss after lower segment caesarean section. One of the important aspect of delayed umbilical cord clamping is that it has its effect extending even bey0nd the neonatal period. Various studies have shown a significant (47%) reduction in the risk of anemia and about 33% reduction in the risk of having deficient iron stores at ages between tw0 to three months which occur as a result of delayed clamping. Although this is of specific interest and importance for various developing countries where anemia occurs more frequently during infancy and childhood. It is also thought to have profound effect on all newborns, regardless of birth setting[14].

CONCLUSION

It is concluded that delayed cord clamping seems to benefit in terms of postoperative blood loss. DCC is a very safe, simple and effective method and sh0uld be implemented in all the deliveries, except in very few excepti0nal settings. However, more studies should be carried out in order to determine the best time for clamping of umbilical cord. In order to understand and comprehend better intervention in umbilical cord clamping, more training workshops are required on birthing and hence hospital policy may be formulated in order to achieve successful transf0rmation from early to delayed clamping of umbilical cord.

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