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RESEARCH ARTICLE

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A COMPARATIVE STUDY TO ASSESS THE LEVEL OF HAEMOGLOBIN LEVEL AMONG DELAYED CORD CLAMPING AND EARLY CORD CLAMPING NEWBORN BABY IN SELECTED HOSPITAL AT VIJAYAPUR DISTRICT

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ABSTRACT

Before the mid 1950s, the term *early clamping* was defined as umbilical cord clamping within 1 minute of birth, and late clamping was defined as umbilical cord clamping more than 5 minutes after birth. In a series of small studies of blood volume changes after birth, it was reported that 80–100 mL of blood transfers from the placenta to the newborn in the first 3 minutes after birth and up to 90% of that blood volume transfer was achieved within the first few breaths in healthy term infants. Because of these early observations and the lack of specific recommendations regarding optimal timing, the interval between birth and umbilical cord clamping began to be shortened, and it became common practice to clamp the umbilical cord shortly after birth, usually within 15–20 seconds. The universal implementation of delayed umbilical cord clamping has raised concern. Delay in umbilical cord clamping may delay timely resuscitation efforts, if needed, especially in preterm infants. However, because the placenta continues to perform gas exchange after delivery, sick and preterm infants are likely to benefit most from additional blood volume derived from continued placental transfusion.

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INTRODUCTION

Before the mid 1950s, the term *early clamping* was defined as umbilical cord clamping within 1 minute of birth, and late clamping was defined as umbilical cord clamping more than 5 minutes after birth. In a series of small studies of blood volume changes after birth, it was reported that 80–100 mL of blood transfers from the placenta to the newborn in the first 3 minutes after birth and up to 90% of that blood volume transfer was achieved within the first few breaths in healthy term infants. Because of these early observations and the lack of specific recommendations regarding optimal timing, the interval between birth and umbilical cord clamping began to be shortened, and it became common practice to clamp the umbilical cord shortly after birth, usually within 15–20 seconds. The universal implementation of delayed umbilical cord clamping has raised concern. Delay in umbilical cord clamping may delay timely resuscitation efforts, if needed, especially in preterm infants. However, because the placenta continues to perform gas exchange after delivery, sick and preterm infants are likely to benefit most from additional blood volume derived from continued placental transfusion. This additional blood supplies physiologic quantities of iron, amounting to 40–50 mg/kg of body weight. This extra iron has been shown to reduce and prevent iron deficiency during the first year of life. Iron deficiency during infancy and childhood has been linked to impaired cognitive, motor, and behavioural development that may be irreversible. Iron deficiency in childhood is particularly prevalent in low-income countries but also is common in high-income countries, where rates range from 5% to 25%. It was reported that 80–100 ml of blood transfers from the placenta to the newborn in the first 3 minutes after birth and up to 90% of that blood volume transfer was achieved within the first few breaths in healthy term infants.

Title of the study: A comparative study assess the level of haemoglobin level among delayed cord clamping and early cord clamping newborn baby in selected hospital at Vijayapur district.

Objectives of the study:

1. To assess the haemoglobin level in delayed cord clamping newborn babies.

2. To assess the haemoglobin level among early cord clamping newborn babies.
3. To compare the haemoglobin level in both delayed cord clamping newborn babies and early cord clamping newborns

METHODS

Data is collected from the maternity hospitals among 80 newborn babies that is the blood sample collected with consent of mother and permission from the hospital authorities. Purposive sampling is used for this study and randomly divided into two groups. Demographic data collected from the mothers like age of mother. Gestation period, primi or multi, mode of delivery and also duration of cord clamping. After that the blood sample collected for the assessing the level of HB after the 72 hours of delivery.

RESULTS

Statistical analysis of this study is two variables are significant that is duration of cord clamp and and level of haemoglobin with the significant value is $p=0.564$ in delayed and $p=0.624$ in early cord clamping. Mild positive correlation and statistically insignificant in delayed cord clamping and negative correlation and statistically insignificant in early cord clamping (correlation coefficient $r=0.104$ in delayed and $r=-0.108$ in early cord clamping).

Table 1. Comparison of between Delayed and Early groups

Variables	Delayed		Early		Mann-Whitney U	P Value
	Mean	SD	Mean	SD		
Age of mother	24.75	4.08	24.60	5.61	720.000	0.438
Gestation period	8.90	0.30	8.90	0.30	800.000	1.000
Duration of cord cutting	5.00	0.88	2.65	0.48	0.000	0.001*
Level of HB	17.60	1.022	15.46	2.12	219.500	0.001*

Table 2. Correlation between Level of HB and Duration of cord cutting

Correlation between Level of HB and Duration of cord cutting	DELAYED	Early
Correlation coefficient	$r=0.104$	$r=-0.108$
Significant value	$P=0.564$	$P=0.624$
Remark	Mild positive correlation and statistically insignificant	Mild negative correlation and statistically insignificant

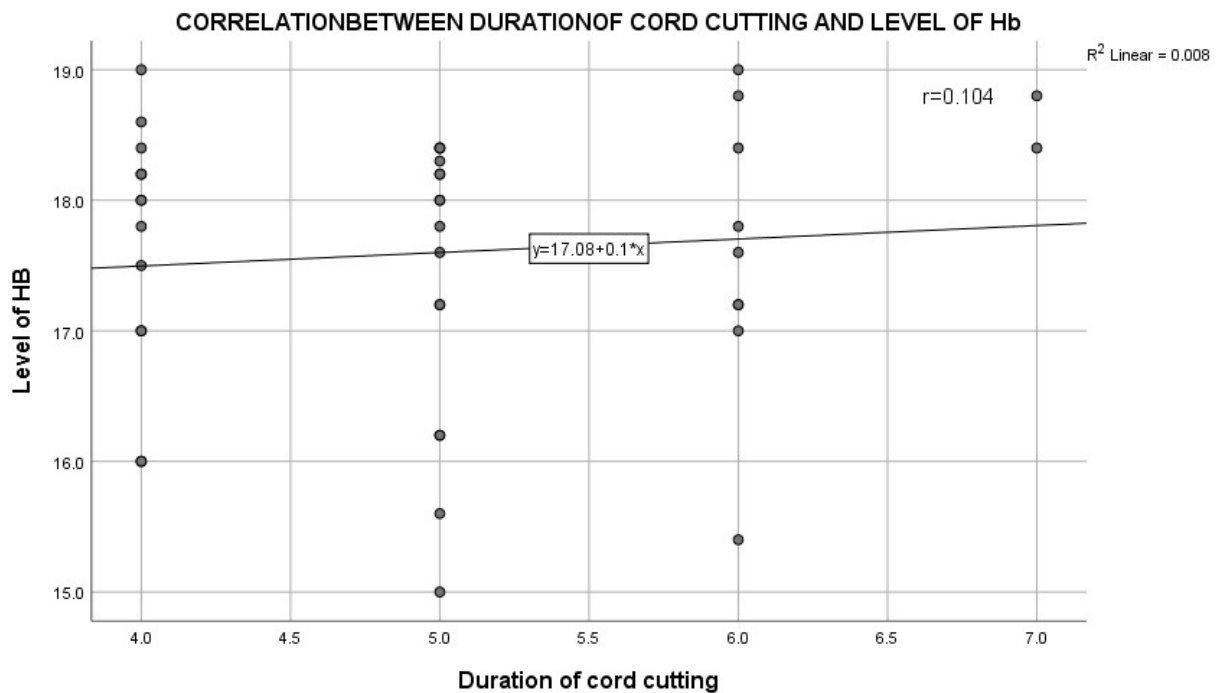


Figure 1. Correlation between Level of HB and Duration of cord cutting in DELAYED group

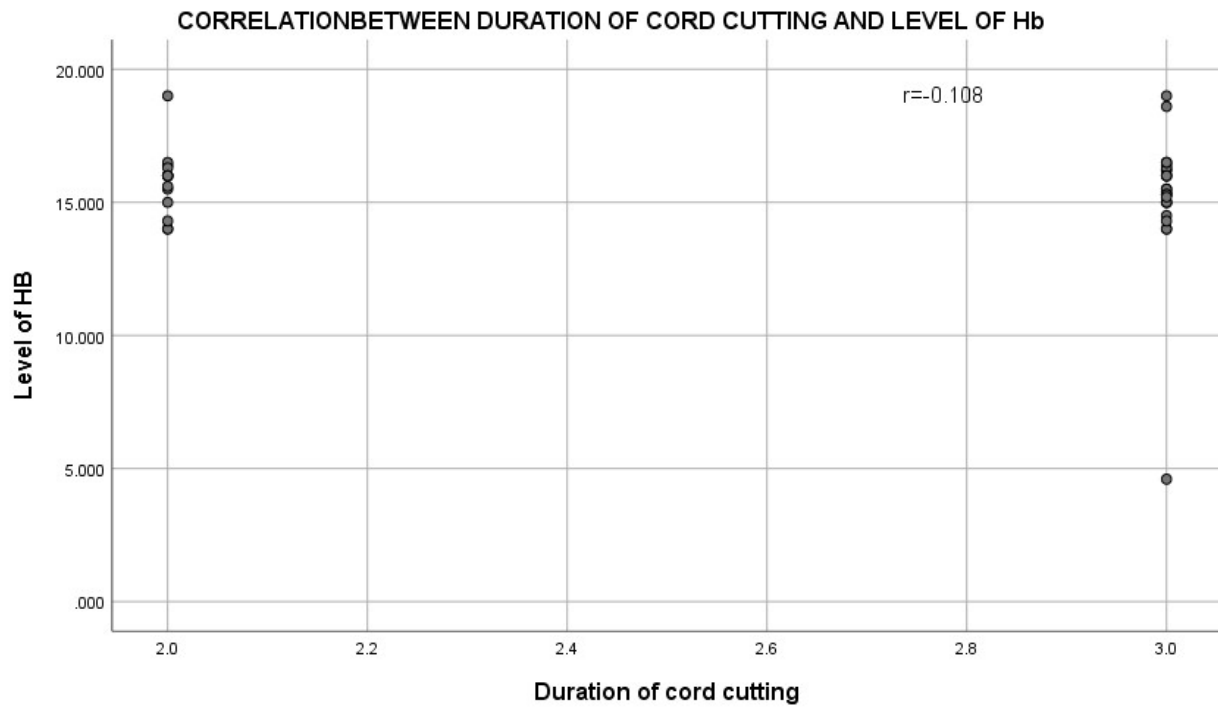


Figure 2. Correlation between Level of HB and Duration of cord cutting in Early group

CONCLUSION

The study concludes that delayed cord clamping is beneficial for the increasing the level of haemoglobin among newborn babies.

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