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Umbilical Cord Milking at Birth

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Introduction

The World Health Organization recommends delaying cord clamping (DCC) for at least 30-60 seconds after the birth of a full-term newborn. However, the recommendation on the time of cord clamping is not as clear with preterm infants or infants who need immediate resuscitation.

Purpose

The purpose of this study was to examine the best, most recent evidence regarding the timing of cord clamping.

Methodology

The methodology was a literature review. Recent research has focused on umbilical cord milking prior to cord clamping. Umbilical cord milking (UCM) is described as “the unclamped umbilical cord is grasped and blood is pushed toward the infant several times before it is clamped to auto-infuse blood into the preterm neonate,” (Katheria et al, 2015, p. 62). This technique has been shown to have numerous benefits in preterm infants, including decreased rates of intraventricular hemorrhage, higher levels of hemoglobin/hematocrit, decreased risk of deoxygenation at 36 weeks, and higher rates of systemic blood flow. Umbilical cord milking is a way to ensure more blood volume reaches the neonate at a time where delayed cord clamping is not an option.

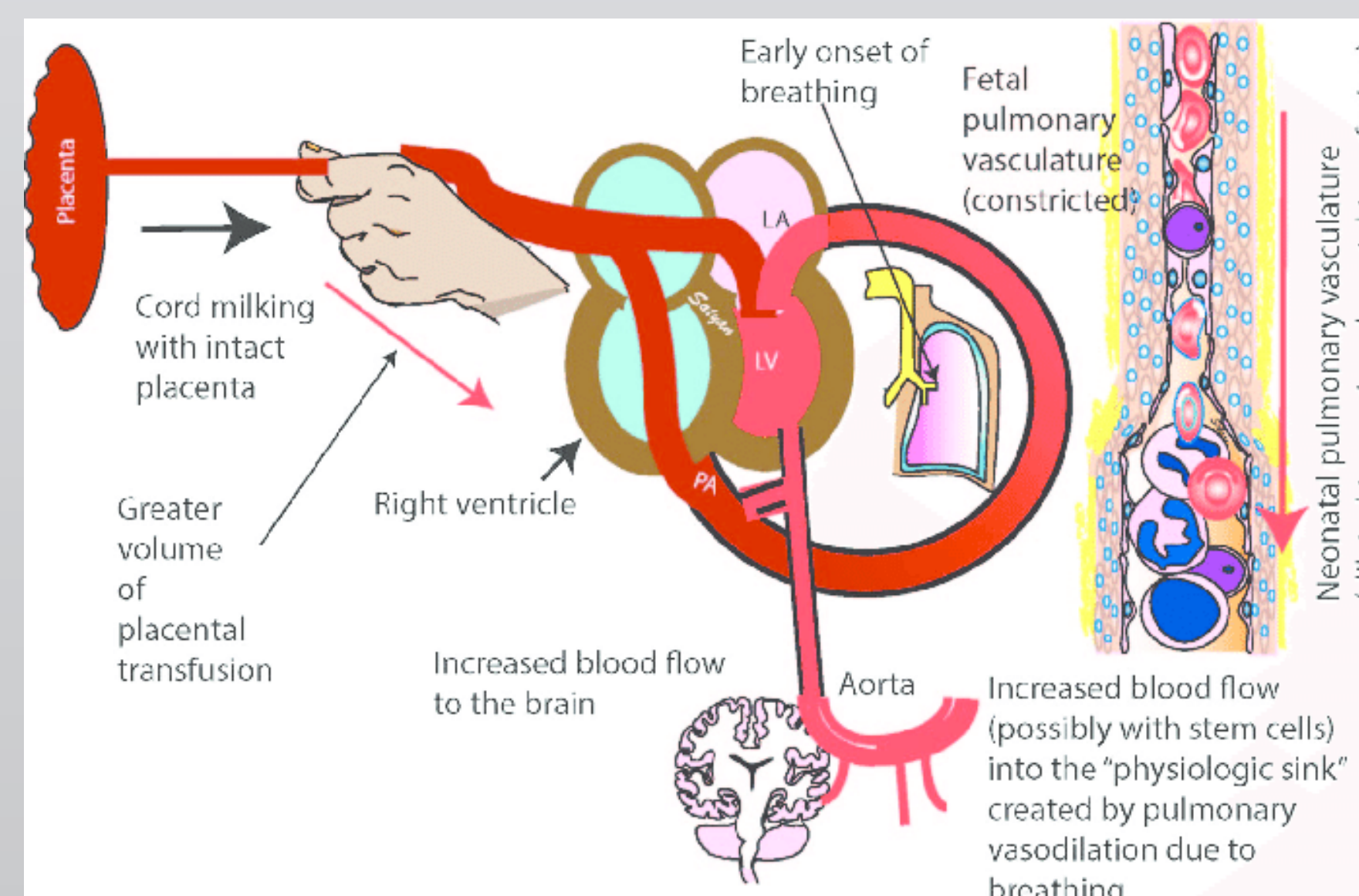
Background Information

- According to the NCBI, “UCM can be performed expeditiously within current resuscitation timeline recommendations before clamping the umbilical cord, and thus may be more beneficial than DCC.”
- Not many studies have been implemented using umbilical cord milking which has hindered gathering of information, as well as its reliability and validity.
- The main difference between delayed cord clamping and umbilical cord milking is that in DCC, the blood transfer is much slower and is mainly pulsed out due to the uterine contractions of the mother. In Umbilical cord milking, the obstetrician is actively pushing the blood to the infant and it takes a less amount of time,.



Summary of Findings

- Significant findings in favor of umbilical cord milking involved:
 - Decreased rates of intraventricular hemorrhage compared to both Delayed Cord Clamping and Immediate Cord Clamping (ICC).
 - Decreased risk of oxygen requirement at 36 weeks for preterm infants less than 33 weeks.
 - Decreased amount of infants with sepsis.
 - Increased systemic blood flow as evidenced by increased superior vena cava flow and increased right ventricular output.
 - Higher initial levels of hemoglobin and hematocrit.
 - Higher levels of cognitive and language development scores at 2-3.5 years old.
 - Increased placental transfusion when compared to DCC during a Cesarean section.



- Other studies found no differences between umbilical cord milking and delayed cord clamping or immediate cord clamping:
 - While there are many positives, there were also areas that had no difference in findings when compared to delayed cord clamping such as:
 - need for a blood transfusion
 - pulse oxygen saturation, cerebral saturation, HR over 24 hours
 - APGAR scores, mortality risk, duration of hospital stay
 - While there may have been no difference found in these areas, no adverse effects were shown from implementing UCM.



Conclusions

- There were numerous different styles of milking the cord presented in these studies. However, the average time presented in these studies was around 15 seconds.
- The average speed presented was 20 cm/second (an average umbilical cord length is 55 cm), with a wait time of 1-2 seconds between each milking.
- The amount of times the cord was milked varied, but the average was 4 times.
- It is recommended to implement umbilical cord milking in: preterm infants, infants who need resuscitation, cesarean section deliveries .
- It was not recommended to have umbilical cord milking in infants with major congenital anomalies .

Recommendations for Future Study

- As mentioned in almost every study, there is not a lot of evidence on umbilical cord milking.
- Many studies did not have a high amount of subjects involved because of location, exclusion criteria, as well as time constraints.
- There needs to be more randomized studies completed in numerous different settings to determine the quality of the evidence provided.
- New studies should also have a large enough population to assess the different possible outcomes, as well as be able to commit to long-term follow up.

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