AMERICAN COLLEGE of NURSE-MIDWIVES
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POSITION STATEMENT

Delayed Umbilical Cord Clamping

It is the position of the American College of Nurse-Midwives that

- Delayed cord clamping should be the standard of care in all birth settings for term and preterm newborns. In situations requiring resuscitation, umbilical cord milking may be of benefit when delayed cord clamping is not feasible, particularly for the preterm newborn.

- Delayed cord clamping results in a placental transfusion of blood into the newborn that facilitates transition to extrauterine life by increasing birth weight, blood volume, and hemoglobin concentration, thereby increasing infant iron stores at 6 months of age.[1,2]

- For term newborns, delaying the clamping of the cord for 5 minutes if the newborn is placed skin-to-skin or 2 minutes with the newborn at or below the level of the introitus ensures the greatest benefit.[3]

- Delayed cord clamping does not increase the risk of developing tachypnea, clinical jaundice, or symptomatic polycythemia.[1-3]

- For preterm newborns, the benefits of delaying cord clamping for 30 to 60 seconds include a significant reduction in intraventricular hemorrhage and a reduced need for blood transfusion.[4-7]

- When a tight nuchal cord is present, delayed cord clamping can be accomplished with the use of the somersault maneuver rather than clamping and cutting the cord prior to birth of the newborn's body.[8]

- In the event that early or immediate clamping is necessary for resuscitation or cesarean delivery, milking the cord may benefit preterm and term newborns.[3,9,10]

- Delayed cord clamping has not been associated with an increase in maternal hemorrhage and should not delay the administration of oxytocic drugs to the mother as needed.[2,11,12]

- The practice of delayed cord clamping should not affect a provider's ability to manage the delivery of the placenta.[11,13]

Background

Clamping and cutting of the umbilical cord after birth is one of the oldest interventions in the birth process. Although optimal timing has been debated for more than 50 years, current practice in most Western countries, including the United States, is to clamp the cord immediately after birth while the newborn is at or below the level of the placenta.[1,2]

The practice of early cord clamping was widely introduced in the 1960s as part of active management of the third stage of labor.[14] Early cord clamping was also advocated in response to concerns that a placental transfusion of blood to the newborn, which occurs when the cord is not immediately clamped, would result in neonatal respiratory distress, polycythemia, and jaundice from circulatory overload.[5] More recently, however, researchers in large, well-designed, randomized, controlled trials found that these complications do not occur in term[1] or preterm newborns [5-6] when clamping and cutting the umbilical cord are delayed.

Currently, there is no set definition of what constitutes early clamping versus late or delayed clamping.[2,4,16-18] However, several organizations have advocated delayed cord clamping. The World Health Organization recommended "late cord clamping (performed after 1 to 3 minutes after birth) for all births while initiating simultaneous essential newborn care."[11] Similarly, the Royal College of Midwives recommended the practice of delayed cord clamping and estimated that this time "normally would be around 3 minutes."[13]

Researchers demonstrated that 25% -30% (54-160 mL) of the total fetoplacental circulating blood volume at term is found in the placenta.[18] This blood is abundant in iron-rich red blood cells and hematopoietic stem cells.[1] When the cord is left intact, circulation continues for several minutes after birth, and the amount of placental transfusion the newborn receives is influenced by duration of time the cord is left unclamped, gravity, and uterine contractions.[3] When the newborn is at the level of the introitus or placenta, the placental transfusion is complete by 3 minutes and delivers a mean of 81 mL (range 50-163 mL).[3] This additional blood volume increases birth weight, hemoglobin concentration, and measured iron stores at 3 to 6 months of age when cord clamping is delayed for at least 2 minutes at or below the level of the placenta.[1,2] A longer delay to cord clamping is recommended when the infant is placed skin-to-skin, which is slightly higher than the level of the placenta.[3] When the cord must be cut to facilitate resuscitation, cord milking is a safe alternative to delayed cord clamping.[3]

For term infants, the benefits of delayed cord clamping reported at ages 2 to 6 months include increased ferritin concentration and iron stores and a decreased risk of iron deficiency anemia (RR 0.53; 95% CI, 0.40-0.70).[1,2,20] Delayed cord clamping was associated with an increased

incidence of asymptomatic polycythemia (RR 3.91; 95% CI, 1.00-15.36) that did not require treatment.[1] Although the authors of one meta-analysis reported that delayed cord clamping was associated with an increased risk of jaundice requiring phototherapy,[2] the authors of another meta-analysis found no difference in mean bilirubin levels.[1] There is no evidence to date that either asymptomatic polycythemia or newborn jaundice secondary to delayed cord clamping are associated with any long-term harm.[3]

For preterm infants, delayed cord clamping (between 30 and 180 seconds) has substantial benefits.[4] Delayed cord clamping reduces the need for blood transfusion for low blood pressure and/or anemia and decreases the incidence of all grades of intraventricular hemorrhage.[5] Although more research is needed, preliminary results indicate that umbilical cord milking may benefit in the preterm infant when delayed cord clamping is not feasible.[7]

Researchers have not found evidence that delaying the clamping of the umbilical cord increases the incidence of maternal postpartum hemorrhage,[2,12] and delayed cord clamping is compatible with current recommendations for active management of the third stage of labor.[11]

Cesarean Birth

The usual practice at cesarean delivery is immediate cord clamping; however, infants born by cesarean can benefit from placental transfusion resulting from delayed cord clamping or umbilical cord milking. Researchers initially reported that placental transfusion did not occur at the time of cesarean delivery, but this was most likely associated with uterine atony and the use of general anesthesia.[21] In a small observational study, Farrar and colleagues recently demonstrated that a full placental transfusion does occur at cesarean delivery, but the optimal timing of delayed cord clamping remains unclear.[22] Ogata et al. reported that a 40-second delay in clamping provided the infant with a partial placental transfusion.[23] Concerns were raised that blood would flow back to the placenta if the cord was clamped after 40 seconds, but this reverse flow has not been demonstrated.[23]

Another approach at the time of cesarean delivery is to milk the umbilical cord. This approach is ideal for cesarean birth when time and speed are important factors. In a small, randomized controlled trial, Erickson-Owens et al. compared immediate cord clamping with umbilical cord milking. They found less placental residual blood volume and higher newborn hematocrit levels at 48 hours of age in infants who received umbilical cord milking.[9] Delayed cord clamping and umbilical cord milking are approaches the clinician may consider at the time of cesarean delivery to facilitate placental blood transfer to the newborn.

Conclusion

ACNM recommends that delayed cord clamping be adopted as the standard of care in all birth settings for term and preterm newborns. For situations requiring resuscitation, umbilical cord milking may be of benefit when delayed cord clamping is not feasible, particularly for the preterm newborn.

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