



Timing of umbilical cord clamping after birth for optimizing placental transfusion

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Purpose of review

A brief delay in clamping the umbilical cord after birth offers health benefits to the newborn, with no adverse effects to the mother or her infant. Yet, in most obstetric practice, the cord is clamped soon after birth. A summary of the current evidence on delayed cord clamping and some reasons for the disconnect between the evidence and practice are discussed here, along with the recommendations from professional organizations and societies about this practice.

Recent findings

In term infants, umbilical cord clamping between 30 and 180 s after birth results in higher concentrations of hemoglobin and hematocrit during the neonatal period, and increased serum ferritin levels and a lower incidence of iron-deficiency anemia at 4–6 months of age. These are important benefits for children in low and middle income countries where iron-deficiency anemia is highly prevalent. In preterm infants, delayed cord clamping for at least 30 s increases the concentrations of hemoglobin and hematocrit, improves mean systemic blood pressure, urine output, and cardiac function, and decreases the need for vasopressors and blood transfusions during the neonatal period. It also decreases the prevalence of necrotizing enterocolitis, sepsis, and intraventricular hemorrhage (all grades). Milking of the unclamped umbilical cord toward the infant soon after birth also has similar beneficial effects. In some studies, more infants in the delayed cord clamping groups required phototherapy for jaundice.

Summary

Many professional organizations, societies, and experts recommend at least a 30-s delay before clamping the umbilical cord, especially after preterm births. The value of this practice for term births in resource-rich settings has not been evaluated.

Keywords

anemia, intracranial hemorrhage, iron-deficiency anemia, necrotizing enterocolitis, neonatal jaundice, preterm, sepsis, serum ferritin, umbilical cord clamping

INTRODUCTION

The recommendations concerning the optimal time to clamp the umbilical cord after birth have varied since antiquity (Table 1) [1–6,7^{***}], and the topic still remains controversial [8–10]. Although systematic reviews of controlled clinical trials have concluded that cord clamping between 30 and 180 s after birth has significant health benefits, this practice is not widely utilized [8,10], in part because of the concerns that such a delay might prevent timely resuscitation. In this article, I have reviewed the literature on this topic briefly, with an emphasis on the physiological rationale for delayed clamping. I also present an overview of the recommendations from professional organizations on optimal time for cord clamping.

CHANGING PRACTICE OF UMBILICAL CORD CLAMPING AFTER BIRTH

Until the early decades of the 20th century, most pregnant women delivered in their homes, where midwives tended to cut the umbilical cord several minutes after birth or wait until after the cord ceased pulsating. Coinciding with the improvements in obstetric and neonatal care, more women began

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