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ORIGINAL ARTICLE

Early versus delayed cord clamping of term births in Shatby Maternity University Hospital

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KEYWORDS
Early cord clamping;
Delayed cord clamping;
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Abstract
Background: The optimal timing for cord clamping; early versus delayed in the third stage of labour, is a controversial subject. There are no formed practice guidelines.
Objective: To compare the potential benefits and harms of early versus late clamping in term infants in Shatby Maternity Hospital.
Methods: A randomized study was conducted on 100 primigravide full term single pregnancy admitted and delivered spontaneously at Shatby Maternity University Hospital. They were divided into two groups (each 50) where in the first group the umbilical cord was clamped immediately ''early cord clamping'' (ECC) and where the 2nd group the umbilical cord was clamped after pulsation had been ceased'' delayed cord clamping'' (DCC) and then Apgar score, Hemoglobin level, random blood sugar, oxygen saturation and bilirubin after 72 h of labour of newborn were compared and analyzed.
Results: There was no statistical significant difference between both groups as regards Apgar score, haemoglobin, Random blood sugar and bilirubin while, there was a statistical significant difference as regard O_2 saturation.
Conclusion: Delayed cord clamping is likely to result in better neonatal outcome.

PALABRAS CLAVE
Pinzamiento precoz del cordón;
Pinzamiento tardío del cordón;
Cordón umbilical

Pinzamiento precoz frente a pinzamiento tardío del cordón umbilical en nacimientos a término del Hospital Materno-Infantil de Shatby

Resumen
Antecedentes: El momento óptimo para el pinzamiento del cordón umbilical, precoz frente al tardío durante el expulsivo del parto, es un tema polémico. No existen unas directrices prácticas formales.

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Objetivo: Comparar los beneficios y daños potenciales del pinzamiento precoz frente al tardío en recién nacidos a término en el Hospital Materno-Infantil de Shatby.
Métodos: Estudio aleatorizado de 100 embarazos únicos a término en primigrávidas que ingresaron y dieron a luz de manera espontánea en el Hospital Materno-Infantil de Shatby. Quedaron divididas en 2 grupos (de 50 integrantes cada uno) en los que se realizó un pinzamiento precoz del cordón umbilical en el primero y un pinzamiento tardío del cordón umbilical en el segundo. A las 72 h del parto se compararon y analizaron la puntuación de Apgar y los valores de hemoglobina, glucemia aleatoria, saturación de oxígeno y bilirrubina.
Resultados: No se apreció una diferencia estadística significativa entre ambos grupos con respecto a la puntuación en el test de Apgar, ni tampoco en los valores de hemoglobina, glucemia aleatoria y bilirrubina, si bien existió una diferencia estadísticamente significativa con respecto a la saturación de O_2.
Conclusión: Un pinzamiento tardío del cordón umbilical podría derivar en un mejor resultado neonatal.

Introduction

Clamping and cutting of the umbilical cord at birth is by far the oldest and most prevalent in humans.[1] In spite of that, the optimal timing of cord clamping has been a controversial for decades.[2]

Active versus physiological management of the third stage is generally accepted as an evidence-based plan for women to avoid excessive blood loss; clamping and cutting the umbilical cord following birth has continued to be routine part of this focus.[2]

There are no formal practices guidelines, but most practitioners in western countries clamp and cut the cord immediately after birth, while the practice worldwide is variable. The active management of the third stage of labour includes: oxytocin administration, early cord clamping and controlled cord traction.[2]

Early cord clamping as a part of the active management is usually performed within the first 30 s at birth, regardless of whether cord pulsations have ceased or not. Some researchers define ''immediate'' cord clamping as cutting the cord within 5 second, but this definition is not widely used.[2]

Advantages of early clamping are prevention of potential postpartum hemorrhage possibility for prompt treatment of the new born, and harvesting of stem cells, while the potential disadvantage of this approach is the increased likelihood of feto-maternal transfusion because early clamping may force blood back to the placenta and increase the likelihood of a D-antigen (rhesus) negative mother to be sensitized by her D-positive infant.[2]

Delayed clamping allows time for transfusion of placental blood to the newborn infant, which can provide the neonate with an additional 30% blood volume, thereby protecting him from anemia without increasing the risk of jaundice and complications related to hyper viscosity and polycythemia.[3]

This — relatively — low cost intervention that can decrease the prevalence of iron deficiency anemia in childhood which is a serious worldwide problem affecting infants in developing countries.[4]

In addition, circulation from the placenta persists for a few minutes after birth and the infant continues to get oxygen through umbilical cord. When oxygen-rich blood is allowed to course through the intact cord, the newly born infant is offered a protected time of adjustment to his new world and his new way of breathing.[5]

On other hand delayed cord clamping has been identified as a cause of polycythemia which leads to hyperviscosity[5]; transient tachypnea of the newborn may occur as a result of delayed absorption of lung fluid caused by an increase in blood volume related to delayed cord clamping.[6]

So the aim of this work was to compare the potential benefits and harms of early versus late umbilical cord clamping in Shatby Maternity Hospital, Alexandria University.

Methods

A randomized study was carried on 100 pregnant women admitted to the obstetrics and gynecology department in Shatby Maternity University hospital from the June 2014, where the parents were informed about the trial and obtained informed consent before were obtained birth. The randomization was performed with a system of randomly prepared cards in sealed non-transparent envelopes containing early or delayed cord clamping when the birth was imminent. The inclusion criteria of this trial include primigravida, full term, non-complicated pregnancy, single, spontaneous delivery with average first and 2nd stage labor, optimums time of rupture of membrane and average fetal weight. While pregnancy with Rh−ve group mother, twins, history of postpartum hemorrhage, preterm, congenital anomalies, instrumental delivery, prolonged labor, patient under general anesthesia, cord around the neck necessitating early cutting and in need of early resuscitation were excluded from the trial. Fifty early cord clamped newborn infants within 30 s (group I) were compared to fifty delayed cord clamping after cord stopped pulsation (group II), then Apgar score, Hb%, random blood sugar, O_2 saturation by the oxymetry (Masimo SET® pulse oximetry) immediately after delivery and also bilirubin level after the 3rd day of delivery were assessed by the paediatrician. The data was collected and entered into personal computer. Statistical analysis was done using statistical package for social sciences (SPSS/version 20) software. Arithmetic mean standard deviation and the *t*-test were used for comparison between the two groups. The level of significant was 0.05.