A few more minutes of maternal attachment may reduce anemia in children

9 May 2007

In the past, the newborns' umbilical cord was not clamped right after birth, thus allowing the blood flow to stop naturally. This practice, known as "late clamping", was replaced by "early clamping", that is, cutting the cord immediately after the infant is expelled. However, this new practice lacks studies corroborating its benefits. In fact, recent studies on the importance of when clamping should be done have shown contradictory results.

A doctoral thesis carried out at the Department of Obstetrics and Gynecology at the University of Granada by Catalina de Paco Matallana shows that the clamping of the umbilical cord of newborns from full-term pregnancies (that is, infants born after a nine-month pregnancy) two minutes after the infant is expelled from the womb makes no difference to hematocrit or hemoglobin levels of the umbilical cord vein compared to clamping the cord within 20 seconds. Thus, the study shows that early clamping (which is widely performed) is not justified.

The doctoral thesis Repercusiones clínicas y fisicoquímicas del tiempo de ligadura del cordón umbilical en recién nacidos a término (Clinical and Physiochemical Repercussions of Clamping Time of the Umbilical Cord of Newborns from Full-Term Pregnancies) analyzed a total of 151 umbilical cords of newborns from full-term pregnancies. In 79 cases, the umbilical cord was cut within 20 seconds, and in 72 cases it was clamped two minutes after the infant was expelled.

The study found that the partial pressure of oxygen in the umbilical artery of the newborn babies who had late clamping had risen, while there was a lesser need of oxygenotherapy after birth. There were no differences in the removal time of the placenta and the mother's bleeding after birth - one of the reasons why early clamping of the umbilical cord started to be practiced.

De Paco Matallana also analyzed the melatonin concentration (one of the strongest and most currently studied antioxidants), finding differences between the melatonin concentration (aMT) in the umbilical vein and the umbilical artery, the latter being where the concentration is significantly higher. "This suggests that the fetus not only receives melatonin from the mother via the umbilical vein because it crosses the placental barrier, but also that it is produced in stressful situations such as during labor," says de Paco Matallana. Thus, high melatonin concentrations in the umbilical cord, together with the arterial and vein differences according to type of birth, suggest that the pineal gland is used by the fetus and that it can respond during birth.

As for the concentration of the triacylglycerols (TAG) analyzed in the umbilical vein of both groups, this study found statistically significant differences, as there is a higher concentration of TAG in the group of early clamping. The same is applied to the umbilical artery, where there are also statistically significant differences, with higher a concentration of TAG in the group of early clamping. However, there are no studies corroborating these findings, so more research is needed, although many other studies recommend late clamping "especially because of the beneficial effect on the prevention of anemia in children," says de Paco Matallana.

The author points out that the results of her thesis "show that there are no differences in the hemogram or the general biochemical profile in the umbilical vein in the cases of early and late clamping". Moreover, there were no differences in the viscosity or the melatonin in the umbilical artery and vein, which have traditionally been variables related to early clamping. From a clinical point of view, there were no differences in either group with umbilical clamping at birth.

"This study has not found any scientific evidence to suggest that the practice of early clamping is

advisable or to justify the abandonment of late clamping in newborns from full-term pregnancies," says de Paco Matallana. "There are convincing findings for and against the two different types of clamping analyzed in this study, which shows not only the complexity of the problem, but also that research in this field may not be controlled enough or designed correctly."

Source: Universidad de Granada