

Immediate Umbilical Cord Clamping as a Cause of Autism

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Send response to
journal:

[Re: Immediate
Umbilical Cord
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of Autism](#)

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Sir:

Recent rates for autism spectral disorders are estimated to be 3-4 times higher than 30 years ago (1). This increase is partly accounted for by changes in methodological factors, but the influence of new environmental exposures cannot be discounted.

A causal association with measles-mumps-rubella immunization is discounted (2) and that with mercury-containing vaccines is weak (3). However, is an association with the dramatic increase in immediate clamping of the umbilical cord (ICC) at birth possible?

ICC is routinely applied during premature, operative and "at risk" births, and increasingly during "normal" births following the recommendation (4) that a segment of the cord should be retrieved immediately after delivery for medico-legal purposes.

The immediate effect of ICC is to deprive the neonate of placental respiration and transfusion resulting in complete asphyxia until the lungs function, and 30%-50% loss of the neonate's natural blood volume; the combined hypoxia and hypovolemia / ischemia is then conducive of hypoxic ischemic brain injury. The neonate that receives a full placental transfusion has enough iron to prevent anemia during the first year of life(5), but blood loss in a neonate subjected to ICC becomes evident in infancy as anemia.(5)

In grade school children, anemia correlates with all types of autistic disorder (6) and the degree of anemia correlates with the degree of mental deficiency; (7) correcting the anemia does not correct the defect.

Kinmond et al. (8) showed that delayed cord clamping combined with gravity assisted placental transfusion prevented anemia (the need for blood transfusion) in preemies. Hack et al. (9) found a high incidence of poor achievement in low birth weight babies.

The correlation between autism and birth complications is supported by aother studies. Hultman (10) reports a great increase in the risk of autism in cesarean deliveries, deliveries with fetal distress and five minute Apgar scores below seven. These obstetrical situations correlate with ICC.

In extensive studies on brain damage from induced birth asphyxia (11) in primates, ICC combined with pulmonary obstruction was used routinely to produce asphyxia, brain damage and cerebral palsy. In milder cases of asphyxia, memory defects were noted without any permanent neurological defect; brain stem nuclear damage was noted at autopsy.(12)

Meyers (11) found. in monkeys, that when placental circulation was left intact by delayed cord clamping, resuscitation of the depressed fetus did not result in brain damage. In humans, Gunther (13) and Peltonen (14) demonstrated continued placental function (respiration and transfusion) after birth, and concluded that "there is good reason in cases of resuscitation to keep the placental circulation intact".

I therefore conclude that ICC, especially when imposed on existitng birth asphyxia, can cause mental impairment without obvious neurological impairment, and therefore may well be a significant contributory cause of the

current autism epidemic.

Erasmus Darwin predicted the autism epidemic 200 years ago, and left instructions for its prevention and its correction (15)

"Another thing very injurious to the child, is the tying and cutting of the navel string too soon; which should always be left till the child has not only repeatedly breathed but till all pulsation in the cord ceases. As otherwise, the child is much weaker than it ought to be, a portion of the blood being left in the placenta, which ought to have been in the child."

References:

1. Fombonne E The Prevalence of autism. JAMA 2003;289:87-89
2. Taylor B. et al. Measles, mumps and rubella vaccination ... in children with autism. BMJ 2002;324:393-396
3. Pichichero ME et al. Mercury concentration and metabolism in infants receiving vaccines containing thiomersal: Lancet 2002;360:1737- 1741
4. ACOG COmmittee Opinion on Obstetric Practice. Number 138. Int J. Gyn Obs 1994;45:303-304
5. Linderkamp O. Placental transfusion: determinants and effects. Clinics in Perinatology 1982;9:559-592
6. Lozoff et al. Iron deficiency anemia and Iron therap[y effects on infant development test performance. Pediatrics 1987;79:981-995
7. HurtadoEK et al. Early childhood anemia and mild to moderate mental retardation. Am J Clin Nut 1999; 69(1): 115-9
8. Kinmond et al. Umbilical Cord Clamping and Preterm Infants: a Randomized Trial. BMJ 1993; 306: 172-175
9. Hack M, et al. Outcomes in Young adulthood for very low birth weight infants. New Eng J Med Vol. 346, NO. 3 Jan, 2002:149-157
10. Department of Medical Epidemiology, Karolinska institutet, S- 17277 Stockholm, Sweden. Christina Hultman@mep.ki.se
11. Myers,RE (1972) Two patterns of perinatal brain danmage. American J Obst and Gynec. 112:246-276
12. Windle et al. Brain Damage by Asphyxia at Birth. Scientific American 1969 Oct;221(4):76-84
13. Gunther M The transfer of blood between the baby and the placenta in the minutes after birth. Lancet 1957; I:1277-1280
14. Peltonen T. Placental transfusion, Advantage - Disadvantage. Eur J Pediatr. 1981;137:141-146
- 15 Darwin E. Zoonomia 1801; Vol III, p301

Further references at www.cordclamping.com

Competing interests: None declared