

EARLY CAFFEINE THERAPY FOR PREEMIES PROVES BENEFICIAL

Low birth weight babies with respiratory problems who receive caffeine therapy during their first 10 days of life are less likely to be diagnosed with cerebral palsy or other neural-development disabilities at 18 to 21 months of age.

“It’s the only neonatal drug that has been convincingly shown to reduce disability,” says Barbara Schmidt, the lead author of an international multicentre trial of caffeine therapy for babies. “Most people predicted that we’d show no difference after 18 months, yet we showed a clear and convincing drop in the incidence of cerebral palsy.”

Although doctors have been treating preemies with caffeine and other nervous system stimulants for more than 30 years now, no clear studies into the practice existed until Schmidt started hers in 1999. In fact, the researcher, who splits her time between McMaster University in Hamilton and the University of Pennsylvania, was horrified at the limited evidence for its use. *“We knew practically nothing,”* she says now. *“That got me thinking and I started talking to colleagues.”*

Several colleagues were interested in pursuing a study that would show what effect caffeine had on infant development and whether treatment of low birth weight babies caused harm later. Along with Schmidt’s Hamilton hospital, doctors in Australia, Canada, England, Germany, Ireland, Israel, Netherlands, Sweden, Switzerland and the U.S.A. also participated.

They identified 5,292 infants who could be considered for the trial. Of those, 2,006 babies received parental consent and could be randomized so that 1,006 were started on caffeine during their first 10 days of life while the other 1,000 received placebos. In the end, complete data sets were obtained for 937 children in the caffeine group and 932 children in the placebo group.



All the babies were born with a weight of between 500 and 1,250 grams and suffered from respiratory ailments that made the use of caffeine desirable. Some of the babies (62 in the caffeine group and 63 in the placebo group) died before they were 18 months old. Of those that survived, 315 in the caffeine group and 368 in the placebo group suffered from one or more of the following disabilities: cerebral palsy, cognitive delay, hearing loss, and blindness. What was interesting, however, was that 40 children in the caffeine group got cerebral palsy compared to 66 in the placebo group, while 293 babies in the caffeine group suffered cognitive delay compared to 329 in the placebo group.

“The significance of this is that there is a group of premature infants who have trouble breathing and if you give them a dose of caffeine, it appears that there is a drop in their prevalence of cerebral palsy (CP),” says Dr. Nigel

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Paneth, a paediatrician and professor with the College of Human Medicine at Michigan State University. *“It was a bit of a surprise. I expect that the use of caffeine will increase now. It’s been extremely hard in neonatal medicine to show that a pharmaceutical intervention could lower the rate of CP. That’s what makes this such an important study. It means that we’re moving away from saving lives to saving brains. This is good news.”* 🐾

BY TRACEY ARIAL

Note: This study won the inaugural Clinical Trial of the Year award announced by the Society for Clinical Trials (SCT) and Project ImpACT (Important Achievements of Clinical Trials) on May 20th, 2008.

Ref.: Schmidt B, Roberts RS, Davis P, Doyle LW, Barrington KJ, Ohlsson A, Solimano A, Tin W, Caffeine for apnea of prematurity trial group. Longterm effects of caffeine therapy for apnea of prematurity. *New England Journal of Medicine* 2007;357(19):1893-1902.