Permanent neurological problems related to encephalopathy can sometimes be lessened, and occasionally eliminated, by cooling the heads of affected newborns for 72 hours, says a recent study in The Lancet.

E ncephalopathy — abnormal brain function — occurs in one to two babies of every thousand births. Twisted cords, weak placentas or contractions that are too strong can all cause such damage. Some babies get into trouble weeks before birth. Until this study, there was no treatment for brain injuries that usually cause death, cerebral palsy or intellectual disability by 18 months of age. Even infants who aren’t handicapped can experience learning problems as they grow up.

With a new protocol that uses hypothermia to treat affected babies, Alistair Jan Gunn, senior author on the study and a Canadian researcher at the University of Auckland in New Zealand, who played a central role in designing the trial, says, “For every six babies who are treated on current criteria, one extra baby will live without severe handicap. Hypothermia works! It is not a magic bullet, it has very tight requirements and its potential is constrained in several real and now reasonably understood ways, but there is no doubt that it makes a real difference, and it is the first treatment ever to do so.”

Doctors from the authorized hospitals provided researchers with data from 234 babies who suffered from encephalopathy when they were born. The babies all had signs of distress, such as low Apgar scores or the need for prolonged resuscitation, and abnormal aEEG readings. Many experienced seizures, while others fell into stupors or comas.

Almost half of the babies received standard care and became the control group. The other 116 babies were treated with a specialized cooling cap within the first six hours of their lives. The babies were cooled to body temperatures between 34 and 35 degrees for 72 hours and were then slowly warmed to normal.

About a third of the babies died. The remaining babies have been given complete examinations, including a full assessment of motor skills and movement, every six months. In Edmonton, the clinic, run by Dr. Charlene M. Robertson, follows 20 babies from the study and another 10 who have been treated under the protocol.

Researchers like Robertson found that cooling did little for the most severely damaged infants. With others, however, the levels of handicap were significantly lower in cooled babies than in control babies. Some healed completely.

“The outcome of the babies that were cooled is better than the outcome of the other babies,” said Edmonton doctor Abraham Peliowski, Director of NICUs in the Gray Nuns and Misericordia hospitals and Senior Neonatologist at the Royal Alexandra Hospital, one of 25 hospitals in Canada, New Zealand, the United Kingdom and the United States authorized to use the cooling cap. “Hypothermia is the only form of treatment for these babies that has proven to do anything, even if it’s not perfectly effective.”

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