Studying brain-cooling for birth asphyxia

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In high income countries brain cooling is standard treatment for neonatal encephalopathy - unexpected, devastating brain injury due to low oxygen and blood in the baby's brain at birth. This therapy reduces mortality and disability.

Encephalopathy occurs more often in poor countries – about 400 UK babies die every year from this condition, as opposed to 1 million per year in low and middle-income countries.

However, a statistical analysis of all cooling studies in low and middle-income countries (covering 567 infants) shows no mortality reduction with cooling. The study is published in the public-access journal *PLOS ONE*.

Lead researcher Dr Sudhin Thayyil, of the UCL Elizabeth Garrett Anderson Institute for Women's Health, says: "Many of the studies we examined had few babies or were poorly designed. It remains unclear whether brain cooling is beneficial in low and middle-income countries."

Professor Seetha Shankaran (Director of Neonatal Medicine at the Children's Hospital of Michigan) led the first study of the effects of whole body brain cooling in high-income countries (*NEJM*, 2005). She says: "…we need more infants evaluated in a randomised controlled trial setting in low income countries to see if cooling is beneficial."

Dr Angie Wade, senior lecturer in medical statistics at the UCL Institute of Child Health, says: "Although mortality reduction was similar to that

in high-income countries, brain cooling benefit was unproven for low and middle-income countries and more data is needed to determine whether routine clinical use is justified."

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