CLIPPINGS

Hypothermia for moderate or severe neonatal encephalopathy in low-income and middle-income countries (HELIX): Lancet Glob Health. 2021 Sep; 9(9): e1273-e1285.

This multicounty open-label, randomized controlled trial was conducted to examine whether therapeutic hypothermia alongside optimal supportive intensive care reduces death or moderate or severe disability after neonatal encephalopathy in south Asia. Seven tertiary neonatal intensive care units in India, Sri Lanka, and Bangladesh, took part in this trial.The Infantswere enrolled at or after 36 weeks of gestation who had moderate or severe neonatal encephalopathy and neededcontinued resuscitation at 5 min of age or an Apgar score of less than 6 at 5 min of age (for babies born in a hospital), or both, or an absence of crying by 5 min of age (for babies born at home. The primary outcome was a combined endpoint of death or moderate or severe disability at 18–22 months, assessed by the Bayley Scales of Infant and Toddler Development (third edition) and a detailed neurological examination.After screening 2296 infants, 408 eligible infants who areassigned to eitherthe hypothermia group (202) or to the control group (206). The study revealed50% infants in the hypothermia group and 47% infants in the control group died or had a moderate or severe disability (risk ratio 1·06; 95% CI 0·87–1·30; p=0·55), and 42% infants in the hypothermia group and 31% infant in control group (31%; p=0·022) died, of whom 72 (36%) and 49 (24%; p=0·0087) died during neonatal hospitalization. The authors concluded that therapeutic hypothermia did not reduce the combined outcome of death or disability at 18 months after neonatal encephalopathy in low-income and middle-income countries, on the other hand increased death alone. Therapeutic hypothermia should not be offered as treatment for neonatal encephalopathy in low-income and middle-income countries, even when tertiary neonatal intensive care facilities are available.The study highlighted a therapy that is unsafe and ineffective in a well-resourced setting is unlikely to be beneficial in sub-Saharan Africa and advised for a future research which should focus on understanding the origins and timing of brain injury in these settings and in preventing neonatal encephalopathy.

Safety and efficacy of Immediate Kangaroo Mother Care (i-KMC) after birth (N Engl J Med 2021; 384: 2028-38.

This randomized, controlled trial was conducted with an objective to find out the safety and efficacy of kangaroo mother care initiated soon after birth among infants with low birth weight. The study was conducted in five hospitals in Ghana, India, Malawi, Nigeria, and Tanzania involving infants with a birth weight between 1.0 and 1.799 kg who were assigned to receive immediate kangaroo mother care (intervention) or conventional care in an incubator or a radiant warmer until their condition stabilized and kangaroo mother care thereafter (control). The primary outcomes were death in the neonatal period (the first 28 days of life) and in the first 72 hours of life.A total of 3211 infants and their mothers were randomly assigned to the intervention group (1609 infants with their mothers) or the control group (1602 infants with their mothers). Neonatal death occurred in 12% infants in intervention group vs.15.7% in the control group in first 28 days of life (relative risk of death, 0.75; 95% confidence interval [CI], 0.64 to 0.89; P=0.001); neonatal death in the first 72 hours of life occurred in 4.6% in the intervention group (4.6%)vs.5.8% in control group (relative risk of death, 0.77; 95% CI, 0.58 to 1.04; P=0.09).The study found that in infants with a birth weight between 1.0 and 1.799 kg, who received immediate kangaroo mother care had lower mortality at 28 days than those who received only conventional care with kangaroo mother care initiated after stabilization. The study highlightedthe importance of immediate KMC after birth. which is safe and efficacious.

A randomized trial of preterm formula fortification of breast milk in preterm infants (JAMA Pediatr. 2021;175:790-796)

Preterm infants often require fortification of expressed breast milk with human milk fortifiers (HMF) for achieving optimal growth which is often costly and barely affordable by many in Indian scenarios. Also the long term benefits of HMF in terms of growth and neurodevelopment are uncertain. Hence in this double blind control trial Chinnappan etal randomized 123 preterm neonates of less than equal to 34 wks. gestation and receiving at least 100 ml/kg of oral feed or 75% of total feeds as EBM to receive EBM fortified either with HMF or preterm formula (PTF). Outcomes compared were weight gain at discharge or 40 weeks (primary outcome with a noninferiority margin of 2 gm/kg/day)), common morbidities like incidence of NEC, feed intolerance and presence of extra uterine growth retardation at discharge (secondary outcomes). Baseline characteristics of enrolled infants were similar. The primary outcome was noninferior in the PTF as compared to HMF group (mean weight gain15.7 ±3.9 vs 16.3 ± 4.0 g/kg/d; mean difference, -0.5 g/kg/d; 95% CI, -1.9 to 0.7). There was fewer incidence of feed intolerance (1.4 vs 6.8 per 1000 patient-days; incidence rate ratio 0.19; 95% CI, 0.04 to 0.95), as well as the need to stop fortification for more than 24 hrs. in HMF group as compared to PTF group. The rest of the secondary outcomes were similar. In this trial emphasized that use of preterm formula might be a better option for fortification, especially in resource-restricted settings.

Antenatal Dexamethasone for Early Preterm Birth in Low-Resource Countries (N Engl J Med 2020; 383: 2514-25)

This multicountry, randomized trial was conducted with an objective to find out the safety and efficacy of antenatal glucocorticoids in women in low-resource countries who are at risk for preterm birth. A total of 2852 women from 29 secondary- and tertiary level hospitals across Bangladesh, India, Kenya, Nigeria, and Pakistan underwent randomization.The participants were assigned to intramuscular dexamethasone or identical placebo. The primary outcomes were neonatal death alone, stillbirth or neonatal death, and possible maternal bacterial

infection; neonatal death alone and stillbirth or neonatal death were evaluated with superiority analyses. The possible maternal bacterial infection was evaluated with a noninferiority analysis with the use of a prespecified margin of 1.25 on the relative scale.

The study revealed that the use of dexamethasone resulted in significantly lower risks of neonatal death alone (relative risk, 0.84; 95% confidence interval [CI], 0.72 to 0.97; P=0.03) and stillbirth or neonatal death (relative risk, 0.88; 95% CI, 0.78 to 0.99; P=0.04) than the use of placebo. There was no increase in the incidence of possible maternal bacterial infection alsowas no significant difference in adverse events inbetween groups. The study highlighted that antenatal dexamethasone is safe and efficacious for early preterm birth in low resource countries. Authors advised to conduct further study to determine the most appropriate dosing regimen and safety and efficacy in late preterm pregnancy.

PANKAJ KUMAR MOHANTY
drpankajpaeds@gmail.com