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Hypoxic Ischemic Encephalopathy in Neonate

encéphalopathie hypoxique-ischémique du nouveau-né : évaluation de l'acupuncture

1. Systematic reviews and Meta-Analysis

1.1. Sibrecht 2024

Sibrecht G, Wong MY, Shrestha R, Bruschettini M. Acupuncture for hypoxic ischemic encephalopathy in neonates. Cochrane Database Syst Rev. 2024 Dec 18;12:CD007968. https://doi.org/10.1002/14651858.CD007968.pub3 .

Background	Peripartum asphyxia affects three to five per 1000 live births, with moderate or severe hypoxic ischemic encephalopathy (HIE) occurring in 0.5 to 1 per 1000 live births, and is associated with high mortality and morbidity. Therapeutic hypothermia is an effective treatment, but alternative therapies such as acupuncture are also used.
Objectives	To determine the benefits and harms of acupuncture (e.g. needle acupuncture with or without electrical stimulation; laser acupuncture; non-penetrating types of manual or embedded acupressure) on mortality and morbidity in neonates with HIE, compared with 1) no treatment, 2) placebo or sham treatment, 3) any pharmacologic treatment, or 4) different types of acupuncture.
Methods	CENTRAL, PubMed, Embase, ClinicalTrials.gov, and WHO ICTRP were searched in March 2023, along with grey literature from CORDIS EU, NICE, and NHSGGC Paediatrics for Health Professionals. Reference lists of relevant articles were also screened. Randomized controlled trials (RCTs), quasi-RCTs, and cluster-randomized trials were eligible. Participants were term (≥37 weeks) or late preterm (34–36 + 6 weeks) infants ≤10 days old with peripartum asphyxia. Interventions included needle, electro-, laser, or non-penetrating acupuncture, compared with no treatment, sham, pharmacologic therapy, or other acupuncture types. Standard Cochrane methods were applied. Primary outcomes: all-cause mortality, major neurodevelopmental disability (18–24 months and 3–5 years), adverse events, and length of hospital stay.
Results	**Four studies (n = 464 infants)** compared acupuncture with no treatment. Sample sizes ranged from 60 to 200 participants. Three trials were conducted in China and one in Russia. None of the four studies reported on any of the prespecified primary outcomes. No ongoing studies were identified.
Conclusions	There is limited availability of studies addressing this specific population. The included studies did not assess mortality, long-term neurodevelopmental outcomes, or adverse effects of acupuncture. No conclusions can be drawn about the benefits and harms of acupuncture for HIE in neonates. Given the current limitations, clinicians should approach acupuncture use in neonates with HIE cautiously, as there is no evidence supporting its routine application. The available trials assessed surrogate outcomes of limited clinical impact and failed to report key outcomes such as mortality and long-term neurodevelopmental results. Future well-designed randomized trials are essential to evaluate the efficacy and safety of acupuncture for neonatal HIE.

1.2. Wong 2013

Wong V, Cheuk Dk, Chu V. Acupuncture for hypoxic ischemic encephalopathy in neonates. Cochrane Database Syst Rev. 2013. [160660].

Background	Hypoxic ischemic encephalopathy (HIE) in the neonate is associated with high mortality and morbidity. Effective treatment options are limited and therefore alternative therapies such as acupuncture are increasingly used.
Objectives	We sought to determine the efficacy and safety of acupuncture on mortality and morbidity in neonates with HIE.
Methods	Search methods: We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library), Cochrane Neonatal Specialized Register, MEDLINE, AMED, EMBASE, PubMed, CINAHL, PsycINFO, WHO International Clinical Trials Registry Platform, and various Chinese medical databases in November 2012. Selection criteria: We planned to include randomized or quasi-randomized controlled trials comparing needle acupuncture to a control group that used no treatment, placebo or sham treatment in neonates (less than 28 days old) with HIE. Co-interventions were allowed as long as both the intervention and the control group received the same co-interventions. We excluded trials that evaluated therapy that did not involve penetration of the skin with a needle or trials that compared different forms of acupuncture only. Data collection and analysis: Two review authors independently reviewed trials for inclusion. If trials were identified, the review authors planned to assess trial quality and extract data independently. We planned to use the risk ratio (RR), risk difference (RD), and number needed to benefit (NNTB) or harm (NNTH) with 95% confidence intervals (CI) for dichotomous outcomes, and mean difference (MD) with 95% CI for continuous outcomes.
Main results	No trial satisfied our predefined inclusion criteria. Existing trials only evaluated acupuncture in older infants who survived HIE. There are currently no randomized controlled trials evaluating the efficacy of acupuncture for treatment of HIE in neonates. The safety of acupuncture for HIE in neonates is unknown.
Authors' conclusions	The rationale for acupuncture in neonates with HIE is unclear and the evidence from randomized controlled trial is lacking. Therefore, we do not recommend acupuncture for the treatment of HIE in neonates. High quality randomized controlled trials on acupuncture for HIE in neonates are needed.