



# A SYSTEMATIC REVIEW AND META ANALYSIS ON THE OUTCOMES OF NEONATES WHO UNDERWENT THERAPEUTIC HYPOTHERMIA BY USE OF ICED GEL PACKS

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## BACKGROUND

Hypoxic Ischemic Encephalopathy remains to be associated with various adverse outcomes such as cerebral palsy, global developmental delay, cognitive impairment, epilepsy and even death hence the need for early intervention is necessary in improving health outcomes.

## OBJECTIVE

To establish the benefit of conducting therapeutic hypothermia by use of iced gel packs among neonates diagnosed with hypoxic ischemic encephalopathy

## METHODS

A thorough literature search using electronic databases such as Medline, PubMed, Cochrane, and Google Scholar were used. The systematic review was carried out using the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) guidelines. Target population were newborns aged 35 weeks or more and diagnosed with hypoxic ischemic encephalopathy. Intervention of interest was therapeutic hypothermia using gel packs.

## RESULTS

A total of four studies were included in this meta-analysis which looked into the risk for mortality between neonates who underwent therapeutic hypothermia using gel packs versus control group. The pooled risk ratio demonstrated significantly lower risk for mortality among those who underwent therapeutic hypothermia using gel packs (RR=0.59, 95%CI=0.42 to 0.84, p=0.003). No significant effect was found on neurodevelopmental delay (RR=0.64, 95%CI=0.40 to 0.84, p=0.07).

## CONCLUSION

The use of gel packs for therapeutic hypothermia was seen to reduce neonatal mortality and is comparable with standard treatment in terms of preventing neurodevelopment delays. Iced gel packs may be considered as a safe and effective alternative to improve outcomes among neonates diagnosed with hypoxic ischemic encephalopathy especially in low resource settings

## Keywords

*Therapeutic Hypothermia*

*Ice Gel Packs*

*Hypoxic Ischemic Encephalopathy*