

Background

Therapeutic hypothermia (TH) has improved mortality and decreased neurologic disability in neonates with HIE. While TH has become routine in NICU's globally, there is no consensus the optimal nutrition support method during cooling.

- NPO orders common in US with use of PN as nutrition support.
- Rational: hypoxia decreases intestinal perfusion, raising risk for necrotizing enterocolitis.

Summary of Current Evidence

- No evidence exists supporting this association.
- Emerging evidence suggests enteral feeding during TH reduces time on PN, time to full oral feeds, and length of stay.
- Studies have also found neonates given enteral feeds are more likely to be exclusively breastfeeding at discharge than those made NPO.
- No increase risk in GI morbidity, systematic infection, or mortality reported.
- Current studies are retrospective with small sample sizes.

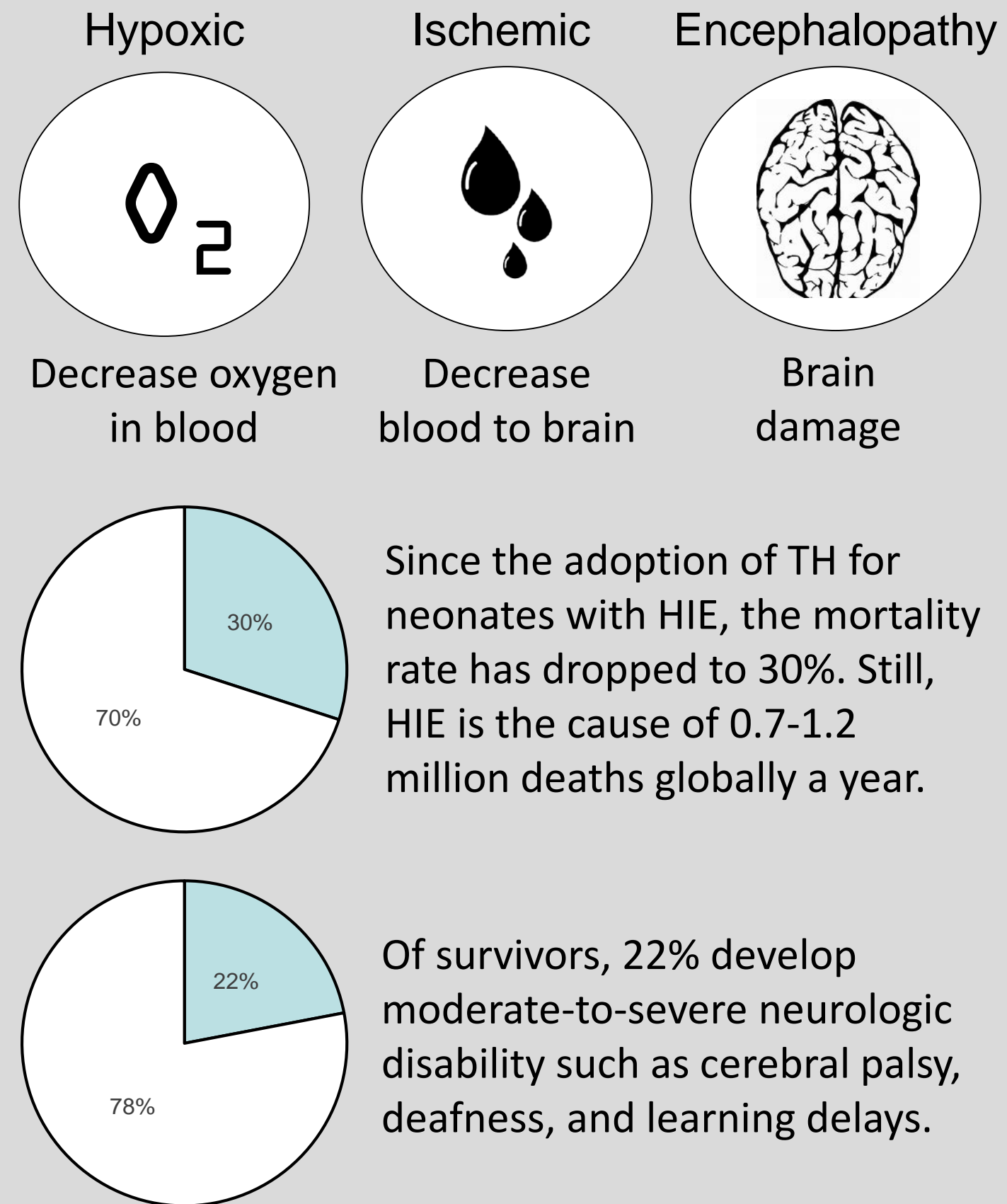


Table 1: Lab Values Throughout Hospital Stay

Lab	Day 2	Day 3
Sodium	125 (L)	128 (L)
Potassium	9.4* (H)	5.6*
Chloride	93 (L)	96
Blood Glucose	93	77
BUN	16	13
Creatinine	0.8	0.6
Phosphorous	4.9* (L)	6.2*
Magnesium	1.7* (L)	1.7*

* = hemolysis present, level may be artificially elevated.

Case Study

- Term male, Baby Z, born without audible heartbeat. Resuscitated and found to have a cord gas of 6.8.
- Transferred to SCH where an EEG was consistent with mild-to-moderate HIE.
- Cooled to 33-34°C via a cooling blanket at 6 hours of life.
- NPO and fluid restricted due to hyponatremia.
- PPN initiated on day three of life, only 35% of goal calories and 65% goal protein delivered
- Rewarmed on day four and allowed breastfeeding ad lib.
- PPN discontinued the following day.



Discussion

- Enteral feeding during TH may pose multiple benefits.
- Reduced PN use lowers risks of central line infections.
- Earlier introduction of breastmilk decreases mortality.
- While current evidence is weak, European NICU's are already implementing feeds during TH.
- Baby Z represents a neonatal candidate for minimal enteral nutrition due to mild HIE symptoms and absence of GI counterindications.

Conclusions

Current evidence is not strong enough to recommend enteral feeds for all HIE neonates. Trophic enteral feeds should be considered a case-by-case basis with a feed volume ≤ 20 mL/kg/hr.