USING THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF) FRAMEWORK TO DESCRIBE MOTOR DEVELOPMENT IN INFANTS WITH HIE WITH AND WITHOUT HYPOTHERMIA TREATMENT

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Background and Aims

Hypoxic ischemic encephalopathy (HIE) is an anoxia event in an otherwise healthy infant typically occurring before, during, or right after birth. The subsequent damage often results in characteristics brain injury and is the most common cause of neurodevelopmental disability. Treatment with hypothermia, typically for 72 hours after birth, is common in many parts of the world. **The purpose of this study is to examine motor characteristics of infants identified with HIE using The International Classification of Functioning, Disability, and Health (ICF) model in the first year of life in infants with HIE who did or did not receive hypothermia treatment.** Treatment with hypothermia, typically for 72 hours right after birth, is common clinical practice in many parts of the world (REF). Indications for hypothermia treatment include 1) a gestational age > 35 weeks, 2) MRI, 3) EEG. Outcomes in human trials suggest that hypothermia may reduce neurodevelopmental disabilities and death compared to non-cooling (Thoresen, 2000 Shankaran). Hypothermia induces cardiovascular changes with indications that it is safe and causes no harm in the newborn period. However, given the medical fragility of these infants, close monitoring is required (Thoresen, 2000). Motor and cognitive outcomes are most commonly described at 2-7 years of age. In the first year of life, motor performance is sometimes described as transient meaning that the same infant demonstrates periods of asymptatology. Understanding the nature of motor performance in the first year of life in infants with HIE may allow for targeted rehabilitation and improved outcomes.

Method

This is a retrospective chart review on N=44 patients with HIE. Participants were drawn from a single regional academic hospital for all infants admitted with HIE over a 1 year period. Participants were included in the study if they received follow up evaluations in the first year of life. Some infants were also evaluated at 18 months of age to confirm a diagnosis of CP. Medical records were coded for impairments in body structures and functions, activity, and participation levels in accordance with the ICF model.

Scoring

ICF (0-4)

- 1 point was assigned for category of impairment across the ICF: body structures & function, activity, and participation. 1 point was assigned for a diagnosis of CP. Patients can have scores of 0,1,2,3,4.
- Example: not walking at 2 years is in the activity level of the ICF; hypertonia is in the body structures & function level; lack of participation in swimming lessons is in the participation level of the ICF

Conclusion

- Activity and participation level assessments for infants with HIE are lacking.
- Clinical considerations are: goal setting with caregivers, use of goal attainment scaling, and education for community and family participation to support motor skill development
- There are no HIE-specific rehabilitation treatments with established efficacy for infants and children with HIE