

293 **THE MYOCARDIAL PERFORMANCE DURING AND AFTER 72-HOURS OF THERAPEUTIC HYPOTHERMIA FOR PERINATAL ASPHYXIA IN TERM NEONATES**

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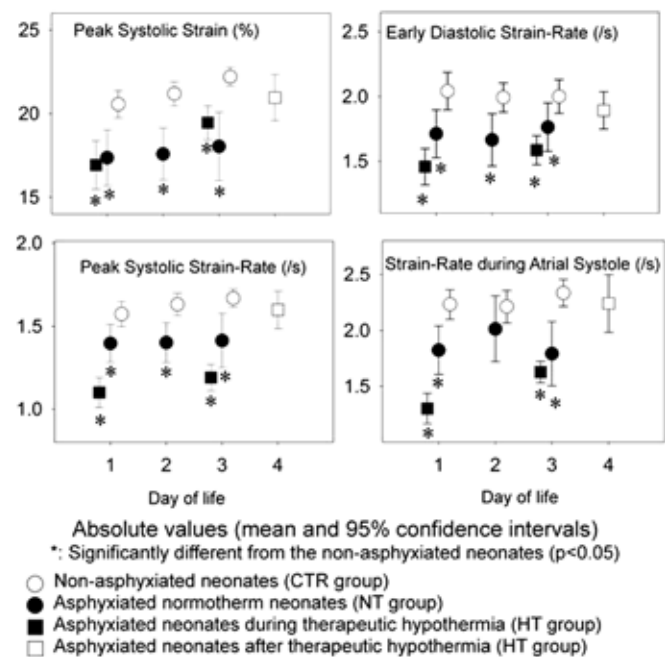
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**Background and Aims** Therapeutic hypothermia after perinatal asphyxia reduces brain damage. The impact on the heart is poorly investigated. This study compare myocardial performance (MP) by ultrasound (Strain and Strain-Rate by tissue Doppler) in cooled asphyxiated term neonates (HT), asphyxiated term neonates treated with normothermia (NT) and non-asphyxiated term neonates (CTR).

**Methods** MP were compared in 44 HT during and after cooling, 20 NT and 48 CTR.

**Results** The HT-group was more severely asphyxiated than the NT-group (pH 7.07 (7.02, 7.12) (mean (95%CI)) vs. 7.21 (7.14, 7.30), Base-Excess -16.11mmol/L (-17.8, -14.3) vs. -9.3 (-13.0, -5.6) (p<0.05)).

**Myocardial performance (MP) indices on day 1-4 of life**



Abstract 293 Figure 1

On day 1–3, the MP was similar in the NT-group and HT-group during cooling, lower than in the CTR-group (p<0.05). The MP within each group was similar, except the CTR-group and HT-group Peak Systolic Strain and HT-group Strain-Rate during the Atrial Systole (p<0.05).

After rewarming, the MP improved in the HT-group (day 4), approaching the MP in the CTR-group on day 3.

**Conclusions** Although the HT-group was more severely asphyxiated than the NT-group, the myocardial performance was similarly depressed on day 1–3. The myocardial performance in the HT-group improved after rewarming (day 4), approaching the level in the CTR-group on day 3. Therapeutic hypothermia did not decrease the myocardial performance during treatment and might have had a positive impact after treatment.

294 **SUCCESSFUL IMPLEMENTATION OF HYPOTHERMIA TREATMENT IN SWEDEN - OUTCOME AT 24 MONTHS OF AGE IN HYPOTHERMIA-TREATED INFANTS WITH HIE**

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**Background** Hypoxic-ischemic encephalopathy (HIE) is associated with a high risk for subsequent neurological sequelae. This study evaluates the implementation of HT in Sweden. Are national guidelines adhered to? Are outcome results comparable to those from previous controlled trials?

**Methods** Between 2007–2009, HT was available at 8 Swedish hospitals. Outcome data regarding all 187 infants who received HT during this period was collected and scored (normal/"motor delay"/cerebral palsy (CP)/dead). Local guidelines for clinical follow-up differing from the national guidelines were also reviewed.

**Results**

Abstract 294 Table 1

Outcome	N=163/187 (24 children lost but alive)
Normal	109 (58%)
"Motor delay"	10 (5%)
Cerebral palsy	20 (11%)
Dead	24 (13%)

Outcome data was available in 87% of treated infants. 13% had died, 74% had been assessed between 15–36 months of age with a neurological exam and using scales for grading of severity of CP, such as the Gross Motor Classification System. 35% had been assessed according to national guidelines using Bayley III.

**Conclusions** HT has been successfully implemented; however structured, comprehensive assessments according to national guidelines are not always carried out. In particular, only about 1/3 of infants undergo a psychometric developmental assessment. The incidence of severe adverse neuromotor outcome is comparable to what was to be expected from earlier RCTs, showing that HT has a significant positive effect also outside of controlled trials.

295 **ROLE OF ANAPYREXIA IN PERINATAL ASPHYXIA IN TERM NEWBORNS: AN OPEN LABELED RANDOMIZED CONTROLLED TRIAL**

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**Background and Aims** To compare anapyrexia (a physiological decrease in body temperature in neonates in response to hypoxia) with normothermia (conventional management) with respect to immediate outcome and neuro-developmental outcome at 3 and 6 months of age in full term asphyxiated newborns.

**Methods** Fifty full term intramural neonates with severe birth asphyxia were randomized to Study (Anapyrexia) group and Control (Normothermia) group. Neonates in Anapyrexia group were allowed to remain at their own intrinsic temperature for a period of 72 hours. Neonates randomized to the Normothermia group had their temperature maintained between 36.5°C to 37.5°C with assistance from the servocontrolled radiant warmer. All neonates were managed according to standard management protocol of the unit. The subjects were monitored closely for any adverse effects, seizures, and development of HIE. The neurological examination was done at 6 hourly interval for the first 24 hours and then at 12 hourly interval. The surviving neonates were followed up at 3 months and 6 months of age.