

# 22<sup>nd</sup> Edition of International Conference on **Neonatology and Perinatology** & 3<sup>rd</sup> International Conference on **Pediatrics and Pediatric Surgery**

May 07-08, 2018 Frankfurt, Germany

## Therapeutic hypothermia for perinatal asphyxia at a tertiary care neonatal unit in South India: our center experience

Sowjanya S V N S, Lakshmi Venugopalan and Karthik Thiagarajan  
Mehta Multispecialty Hospitals India Pvt. Ltd., India

**Background:** Perinatal asphyxia accounts for 23% of the neonatal deaths especially in developing countries. Therapeutic hypothermia (TH) has recently emerged from bench to bedside. Systematic reviews and meta-analyses have shown that TH is effective in reducing mortality and disability following hypoxic ischemic insult. There are a number of concerns about the safety and efficacy of cooling in low-and middle-income countries like sub optimal intensive care facilities, time window to administer cooling and high incidence of sepsis. Hence we decided to study immediate and long term outcomes after starting TH in our unit.

**Objectives:** Primary outcome is mortality in NICU. Secondary outcomes were adverse events, death after discharge, neurological examination at discharge, number of antiepileptic drugs at discharge and neurodevelopmental outcome at follow up.

**Study Setting:** The study was conducted in the Level 3 neonatal intensive care unit, Mehta Multispecialty Hospitals, Chennai, India.

**Study Period:** The study period was during October 2013 to April 2017.

**Methods:** Babies who met TOBY criteria were cooled to 33.5 using second-generation Tecotherm within 6 hours of birth for 72 hours, followed by rewarming at 0.5 /h. All the babies who were cooled at our unit were enrolled into the study after parental consent. We recorded the baseline maternal and neonatal characteristics. Primary and secondary outcomes studied as mentioned. Encephalopathy staging was done using Sarnat and Thompson score. Neurological examination at discharge was done using Hammersmith examination. Subsequent neurodevelopmental follow-up was performed on the babies using Developmental Assessment Scales for Indian Infants-II (DASII).

**Results:** A total of 19 babies received TH during the study period. Mean gestational age and birth weight were 38.69 (1.53) wks. and 2.96 (0.4) kg respectively. Median Apgar at 5 minutes was 4 (3.5), mean pH and base excess prior to cooling were 7.25 (0.1) and -14.5 (3.96) respectively. 94.74% were outborn and 57.89% were male babies. 73.68% had moderate encephalopathy. Seizures were noted in 94.73% with multiple episodes in 22.22% babies. 11.11% required more than two anti-epileptic drugs (AED's) for seizure control. Mean Thompson score at enrolment was 11.37 (3.43). Mean age at cooling was 3.73 (1.44) hrs. and the target temperature 33.5 was achieved within mean duration of 47.1 (20.02) minutes. Most common adverse event was shock (52.63%) followed by coagulopathy (47.37%). Most common metabolic disturbance was hypocalcemia (63.16%) followed by hypomagnesemia (47.37%). 84.2% babies required mechanical ventilation and no babies died while in NICU. CNS examination was normal at discharge in 63.16%. 47.37% required AED's at discharge with 33.33% requiring 2 AED's. 61.11% of the babies were breast feeding at discharge and 77.78% of the babies had abnormal MRI while 44.44% had abnormal EEG. Two babies (10.53%) died after discharge. Neurodevelopmental follow up was done for 15/19 (78.95%) babies. Mean age of neurodevelopmental follow up was 15.92 (4.97) months. 40% (6/15) babies had motor and mental quotients less than 85.

**Conclusion:** Therapeutic hypothermia is feasible and safe. Therapeutic hypothermia resulted in better survival and neurodevelopmental outcomes at follow up in our study. TH did not cause any reduction in abnormal MRI and EEG. Hence, it may be noted that additional neuroprotection may be needed along with hypothermia.

### Biography

Sowjanya S V N S has completed her MD Pediatrics from Siddhartha Medical College, Vijayawada, India. She has worked as Senior Resident in Pediatrics for three years involved in undergraduate and postgraduate training. She will be finishing her DNB Neonatology by May 2018. She has published three papers in reputed journals till date. She has five paper and four poster presentations till date in many conferences. She has done a live webinar for ILCA conference 2017, Canada. She has presented her poster at PSANZ 2017 Canberra, Australia. Her areas of interest are critically sick neonates, perinatology and neurodevelopmental follow-up.

drsowjanya.svns@gmail.com