

Registry for Therapeutic Hypothermia using MiraCradle™ - Neonate Cooler

Pluss Polymers Pvt. Ltd.

Source: Department of Neonatology, Christian Medical College, Vellore

S.No. Hospital

Name Sex M / F

Gestational Age Wks Days Birth Weight (g)

Date of Birth Time of Birth AM / PM

Place of Birth

Complete Postal Address (including pin code)

Inborn Outborn

Father's Name

Mother's Name

Mobile No.

Landline Number -

Antenatal and Intrapartum Details

Obstetrical History G P L A END

ANC Yes No

Hospital / Place of antenatal Care

Maternal Complications in the antenatal period

GDM PIH HT Thyroid disease APH

IUGR Twin Others

Onset of labour: Induced Spontaneous

Duration of labour: Duration of ROM

Intrapartum complications: Uterine rupture Mec. stained liquor

Hemorrhage Cord Prolapse Shoulder dystocia

Abnormal CTG Ante partum Mg exposure

Specify:

Risk of sepsis

Maternal fever ($\geq 37.6^{\circ}\text{C}$, > 99.7) Chorioamnionitis PPROM
Multiple PVs >3 PROM > 18 hours

Mode of Delivery Normal Forceps Vacuum
Breech Pre-labour LSCS LSCS after labour

Indication

Age of starting Cooling

Mode of Cooling: MiraCradle™ - Neonate Cooler Others _____

Age when target temperature achieved

Clinical Details of Baby at Birth

AGA SGA LGA

Head Circumference _____ cm

Resuscitated >5 minutes Yes No

Cried at _____ min (Outborn)

Apgar score 1 min 5min 10 min 20min

Blood gas results (worst set of results within 60 minutes including cord blood)

pH pO₂ PCO₂ Base deficit HCO₃

Clinical Seizures Yes No

Encephalopathy Yes No

Criteria for defining moderate/severe encephalopathy – 3/6 areas should be present

Category	Moderate Encephalopathy	Severe Encephalopathy
Level of consciousness	Lethargic <input type="checkbox"/>	Stupor or Coma <input type="checkbox"/>
Spontaneous activity	Decreased activity <input type="checkbox"/>	No activity <input type="checkbox"/>
Posture	Distal Flexion Complete extension <input type="checkbox"/>	Decerebrate <input type="checkbox"/>
Tone	Hypotonia (focal or generalized) <input type="checkbox"/>	Flaccid <input type="checkbox"/>
Primitive reflexes		
Suck	Weak <input type="checkbox"/>	Absent <input type="checkbox"/>
Moro	Incomplete <input type="checkbox"/>	Absent <input type="checkbox"/>
Autonomic system		
Pupils	Constricted <input type="checkbox"/>	Deviated, dilated or non-reactive to light <input type="checkbox"/>
Heart rate	Bradycardia <input type="checkbox"/>	Variable <input type="checkbox"/>
Respiration	Periodic Breathing <input type="checkbox"/>	Apnea <input type="checkbox"/>

Thompson Score prior to cooling

Baby's Age

Sign	0	1	2	3	Score
Tone	Normal	Hyper	Hypo	Flaccid	
LOC	Normal	Hyper alert, stare	Lethargic	Comatose	
Fits	None	Infrequent <3/day	Frequent >2/day		
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate	
Moro	Normal	Partial	Absent		
Grasp	Normal	Poor	Absent		
Suck	Normal	Poor	Absent / bites		
Resp.	Normal	Hypervent	Brief apnoea	Apnoeic	
Fontanelle	Normal	Full, Not tense	Tense		
Total Score					

aEEG at start of Cooling _____

Day 1: Cooling hours 0-23
Hour 0 = time when cooling is started

Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C
0			6			12			18		
1			7			13			19		
2			8			14			20		
3			9			15			21		
4			10			16			22		
5			11			17			23		

Hypoxic Ischemic Encephalopathy Score Day 1 *(Please circle clearly as appropriate)*

Baby's Age

Sign	0	1	2	3	Score
Tone	Normal	Hyper	Hypo	Flaccid	
LOC	Normal	Hyper alert, stare	Lethargic	Comatose	
Fits	None	Infrequent <3/day	Frequent >2/day		
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate	
Moro	Normal	Partial	Absent		
Grasp	Normal	Poor	Absent		
Suck	Normal	Poor	Absent / bites		
Resp.	Normal	Hypervent	Brief apnoea	Apnoeic	
Fontanelle	Normal	Full, Not tense	Tense		
Total Score					

Day 2: Cooling hours 24-47

Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C
0			6			12			18		
1			7			13			19		
2			8			14			20		
3			9			15			21		
4			10			16			22		
5			11			17			23		

Hypoxic Ischemic Encephalopathy Score Day 2 *(Please circle clearly as appropriate)*

Baby's Age

Sign	0	1	2	3	Score
Tone	Normal	Hyper	Hypo	Flaccid	
LOC	Normal	Hyper alert, stare	Lethargic	Comatose	
Fits	None	Infrequent <3/day	Frequent >2/day		
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate	
Moro	Normal	Partial	Absent		
Grasp	Normal	Poor	Absent		
Suck	Normal	Poor	Absent / bites		
Resp.	Normal	Hypervent	Brief apnoea	Apnoeic	
Fontanelle	Normal	Full, Not tense	Tense		
Total Score					

Day 3: Cooling hours 48-71

Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C
0			6			12			18		
1			7			13			19		
2			8			14			20		
3			9			15			21		
4			10			16			22		
5			11			17			23		

Hypoxic Ischemic Encephalopathy Score Day 3 (Please circle clearly as appropriate)

Baby's Age

Sign	0	1	2	3	Score
Tone	Normal	Hyper	Hypo	Flaccid	
LOC	Normal	Hyper alert, stare	Lethargic	Comatose	
Fits	None	Infrequent <3/day	Frequent >2/day		
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate	
Moro	Normal	Partial	Absent		
Grasp	Normal	Poor	Absent		
Suck	Normal	Poor	Absent / bites		
Resp.	Normal	Hypervent	Brief apnoea	Apnoeic	
Fontanelle	Normal	Full, Not tense	Tense		
Total Score					

Day 4: Cooling hours 72-95

Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C	Hour	Rectal temp °C	Skin Temp °C
0			6			12			18		
1			7			13			19		
2			8			14			20		
3			9			15			21		
4			10			16			22		
5			11			17			23		

Hypoxic Ischemic Encephalopathy Score Day 4 *(Please circle clearly as appropriate)*

Baby's Age

Sign	0	1	2	3	Score
Tone	Normal	Hyper	Hypo	Flaccid	
LOC	Normal	Hyper alert, stare	Lethargic	Comatose	
Fits	None	Infrequent <3/day	Frequent >2/day		
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate	
Moro	Normal	Partial	Absent		
Grasp	Normal	Poor	Absent		
Suck	Normal	Poor	Absent / bites		
Resp.	Normal	Hypervent	Brief apnoea	Apnoeic	
Fontanelle	Normal	Full, Not tense	Tense		
Total Score					

Complications

Subcutaneous Fast Necrosis Seizures

Arrhythmia Coagulopathy

Hypotension Electrolyte Disturbance Yes / No Specify _____
Persistent mean blood pressure of <40mmHg

Sepsis Organism _____

Probable sepsis CRP _____ Leukopenia (< 5000) ITR>0.2

Hypoglycaemia <47mg% Hyperglycemia > 150mg% Meningitis

Thrombocytopenia <1, 00,000 Lowest Platelets _____

PPHN

Treatment

Ventilation CPAP IMV HFOV Oxygen

Inotropes Dopamine Dobutamine Adrenaline Others _____

Anticonvulsants: Phenobarbitone Phenytoin Benzodiazepine

Analgesics & Sedation: Morphine Fentanyl Midazolam Others _____

Neuro imaging

done on day

results

Ultrasound

MRI

CT

Other diagnosis

Discharge at ____ day of life

Outcome A&W AMA Died

Discharge status: Feeding at discharge: Oral Tube feeds

Anticonvulsants: Phenobarbitone Phenytoin Others

Neurological status at discharge/Day 7

Sign	0	1	2	3	Score
Tone	Normal	Hyper	Hypo	Flaccid	
LOC	Normal	Hyper alert, stare	Lethargic	Comatose	
Fits	None	Infrequent <3/day	Frequent >2/day		
Posture	Normal	Fisting, cycling	Strong distal flexion	Decerebrate	
Moro	Normal	Partial	Absent		
Grasp	Normal	Poor	Absent		
Suck	Normal	Poor	Absent / bites		
Resp.	Normal	Hypervent	Brief apnoea	Apnoeic	
Fontanelle	Normal	Full, Not tense	Tense		
Total Score					

If cooling stopped before 72 hours – Why?

Autopsy done Yes No Report _____

Appendix

Definitions Of Terms In Data Collection Form

Arrhythmia

Sinus bradycardia below 80 bpm and other arrhythmias identified on ECG

Coagulopathy

Bleeding associated with altered coagulation profile requiring treatment

Hypoglycaemia

Blood glucose below 47 mg%^H

Hypotension

Persistent mean blood pressure of < 40 mmHg

Early onset sepsis (<72 hours after birth) confirmed by blood or CSF culture

Any evidence of infection requiring antibiotic therapy which is confirmed on culture

Late onset sepsis (>72 hours after birth) confirmed by blood or CSF culture

Any evidence of infection requiring antibiotic therapy which is confirmed on culture

Probable Sepsis

Any 2 or more parameters of the sepsis screen positive but blood culture negative

Pulmonary hypertension (PPHN)

Severe hypoxaemia disproportionate to the severity of lung disease and evidence of a right to left shunt

Seizures

Clinical or identified on CFM / EEG