

Registry for Therapeutic Hypothermia using MiraCradle[®] - Neonate Cooler

Pluss[®] Advanced Technologies Pvt. Ltd.

Source: Department of Neonatology, Christian Medical College, Vellore

General Information

Neonate ID 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. Alternate No.1

Landline No. Alternate No.2

Antenatal and Intrapartum Details

Obstetrical History G P L A END

ANC Yes No If yes, enter number of visits

Hospital / Place of antenatal Care

Maternal Complications in the antenatal period

GDM PIH HT Thyroid disease APH

IUGR Twin Others Specify here NIL

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 LSCS after labour Vacuum

Breech Pre-labour LSCS Forceps

Indication

Age of starting Cooling

Mode of Cooling: MiraCradle[®] - Neonate Cooler

Age when target temperature achieved

Note: This age calculation is required to estimate the effective time of cooling from the start

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

Initial Temperature of Baby (deg Celsius) _____

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

Day 1: Cooling hours 0-23
Hour:MM 00:00 = time when cooling is started

For first four hours, temperature to be monitored after every 15 minutes

HH:MM	Rectal Temp (°C)	Skin Temp (°C)	HH:MM	Rectal Temp (°C)	Skin Temp (°C)
00:15			07:00		
00:30			08:00		
00:45			09:00		
01:00			10:00		
01:15			11:00		
01:30			12:00		
01:45			13:00		
02:00			14:00		
02:15			15:00		
02:30			16:00		
02:45			17:00		
03:00			18:00		
03:15			19:00		
03:30			20:00		
03:45			21:00		
04:00			22:00		
05:00			23:00		
06:00					

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

Baby's Age 0 1 2 3

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 24:00 to 47:00

HH:MM	Rectal Temp (°C)	Skin Temp (°C)	HH:MM	Rectal Temp (°C)	Skin Temp (°C)
24:00			36:00		
25:00			37:00		
26:00			38:00		
27:00			39:00		
28:00			40:00		
29:00			41:00		
30:00			42:00		
31:00			43:00		
32:00			44:00		
33:00			45:00		
34:00			46:00		
35:00			47:00		

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 48:00-71:00

HH:MM	Rectal Temp (°C)	Skin Temp (°C)	HH:MM	Rectal Temp (°C)	Skin Temp (°C)
48:00			60:00		
49:00			61:00		
50:00			62:00		
51:00			63:00		
52:00			64:00		
53:00			65:00		
54:00			66:00		
55:00			67:00		
56:00			68:00		
57:00			69:00		
58:00			70:00		
59:00			71:00		

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 72:00 to 95:00

HH:MM	Rectal Temp (°C)	Skin Temp (°C)	HH:MM	Rectal Temp (°C)	Skin Temp (°C)
72:00			84:00		
73:00			85:00		
74:00			86:00		
75:00			87:00		
76:00			88:00		
77:00			89:00		
78:00			90:00		
79:00			91:00		
80:00			92:00		
81:00			93:00		
82:00			94:00		
83:00			95:00		

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

Baby's Age h h m m

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 Fat Necrosis	<input type="checkbox"/>	Seizures	<input type="checkbox"/>
Arrhythmia	<input type="checkbox"/>	Coagulopathy	<input type="checkbox"/>
Clinical Bleeding	<input type="checkbox"/>	Type	_____
Hypotension Persistent mean blood pressure of <40mmHg	<input type="checkbox"/>	Electrolyte Disturbance Yes / No	Specify_____
Sepsis	<input type="checkbox"/>	Organism	_____
Probable sepsis	<input type="checkbox"/>	CRP	_____
Leukopenia (< 5000)	<input type="checkbox"/>	ITR>0.2	<input type="checkbox"/>
Hypoglycaemia <47mg%	<input type="checkbox"/>	Hyperglycemia > 150mg%	<input type="checkbox"/>
Meningitis	<input type="checkbox"/>		
Thrombocytopenia <1, 00,000	<input type="checkbox"/>	Lowest Platelets	_____
PPHN	<input type="checkbox"/>		
Others	_____		
NIL	<input type="checkbox"/>		

Treatment

Ventilation:	CPAP	<input type="checkbox"/>	IMV	<input type="checkbox"/>	HFOV	<input type="checkbox"/>	Oxygen	<input type="checkbox"/>
Inotropes:	Dopamine	<input type="checkbox"/>	Dobutamine	<input type="checkbox"/>	Adrenaline	<input type="checkbox"/>	Others	_____
Anticonvulsants:	Phenobarbitone	<input type="checkbox"/>	Phenytoin	<input type="checkbox"/>	Benzodiazepine	<input type="checkbox"/>	Others	_____
Analgesics & Sedation:	Morphine	<input type="checkbox"/>	Fentanyl	<input type="checkbox"/>	Midazolam	<input type="checkbox"/>	Others	_____

Neuroimaging	Done on day	Results
Ultrasound		
MRI		
CT		

Other Diagnosis

Discharge at ____ day of life

Outcome: A&W AMA Died Specify Reason__

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