PEDIGEST

THE QUATERLY NEWSLETTER DEPARTMENT OF PAEDIATRICS RRMCH

We are united against this pandemic and let there be no obstacle to our goal of imparting relevant information and creating awareness amongst the public.

In this current scenario, where we are coping with the changing tides of digital teaching and lectures, and also the new norms of social distancing and personal protection, we also choose to leave footprints in the public's mind via our edition/ latest edition of PEDIGEST- which in turn drops a birds eye view into theraputic hypothermia

We hope our contribution catches your eyes and helps you all in umpteen ways.

Happy reading.

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IN THIS TOPIC
THERAPEUTIC HYPORTHERMIA

SUPPORT BREASTFEEDING · FOR A HEALTHIER PLANET ·
WABA | WORLD BREASTFEEDING WEEK 2020

THERAPEUTIC HYPOTHERMIA

(Q)what is therapeutic hypothermia?

- Therapeutic hypothermia is defined as the intentional lowering of core body temperature (<35 degrees) to reduce metabolic, muscular and cerebral function in acute brain injury.

- Results in 6 to 10% decrease in cerebral metabolism for every 1 degree celsius reduction in core body temperature.

- Decreased cerebral metabolism and blood flow: Decrease in energy requirement and cerebral edema

- Decreased brain lactic acid, glutamate, and nitric oxide concentrations: Less excitotoxic and oxidative injury

- Inhibits protease activation, mitochondrial failure, free radical damage, lipid peroxidation: Less apoptosis and necrosis.

(Q)phases of therapeutic hypothermia

- Induction phase
- Maintenance phase
- Rewarming phase

INCLUSION CRITERIA

a. Postmenstrual age (PMA) ≥36 weeks, BW ≥2,000 g

b. Evidence of fetal distress or neonatal distress as evidenced by one of the following:

i. History of acute perinatal event (e.g., placental abruption, cord prolapse, severe FHR abnormality)

ii. pH ≤7.0 or base deficit ≥16 mmol/L or postnatal blood gas obtained within first hour of life •

iii. 10-minute Apgar score of ≤5

iv. Assisted ventilation initiated at birth and continued for at least 10 minutes.

Evidence of moderate to severe neonatal encephalopathy by exam and/or aEEG

EXCLUSION CRITERIA

• a.Presence of lethal chromosomal abnormality (e.g., trisomy 13 or 18)

• b. Presence of severe congenital anomalies (e.g., complex cyanotic congenital heart disease, major CNS anomaly)

• c. Symptomatic systemic congenital bacterial infection (e.g., meningitis, DIC)

• d. Significant bleeding diathesis

• Cooling should be started before 6 hours of age; therefore, early recognition is essential. • The target core temperature goal during cooling is 33.5°C (33° to 34°C) with acceptable range: 32.5° to 34.5°C.

• Therapeutic hypothermia • Using Phase changing material based device

• Target temperature: 33.5 ± 0.5 °C

TYPES OF COOLING DEVICES

1.Whole body cooling devices

High technology devices:

Tecotherm, MTRE criticool

Low technology devices:

Miracradle

2. Selective head cooling device:

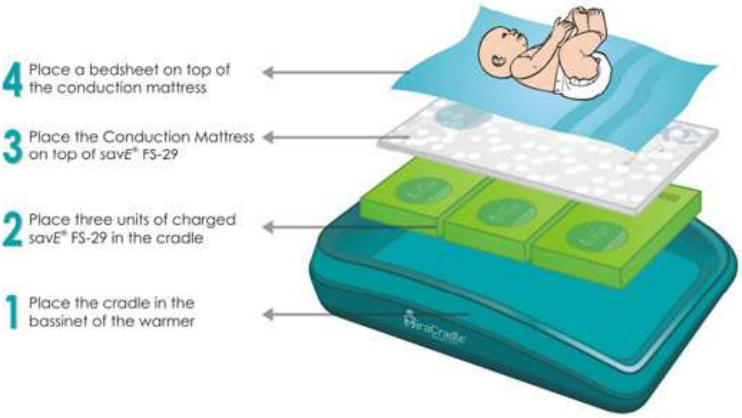
Olympic cool cap

OLYMPIC COOL CAP

TECOTHERM

CRITICOOL

MIRACRADLE

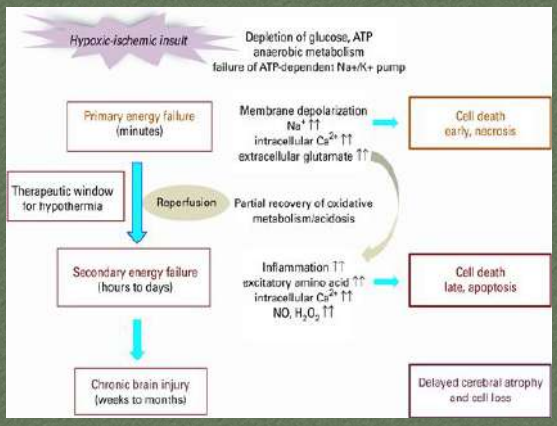


TOTAL NO OF BABIES TREATED BY THERAPEUTIC HYPOTHERMIA IN RRMCH -8

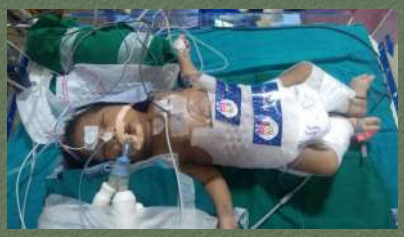
HYPOXIC ISCHEMIC ENCEPHALOPATHY

(Q)WHAT IS HIE...?

- Hypoxic ischemic encephalopathy (HIE) refers to the CNS dysfunction associated with perinatal asphyxia.
- It is often the prime concern while managing asphyxiated neonates because it is not only associated with high risk of mortality but also carries a significant risk of serious long term neuromotor sequelae
- HIE evolves gradually beginning from the time of insult to hours and days later.
- The initial hypoxic-ischemic event results in infarction of the brain tissue (primary energy failure).
- The subsequent injury – secondary injury – is mediated by reperfusion and free radicals in an area surrounding the necrotic area



- The penumbra undergoes programmed neuronal death (apoptosis) even after the hypoxic insult is over.
- The time gap between these two phases could be 6 to 24 hours and provides a window to institute specific therapeutic intervention .



• Bedside monitoring

The vital parameters including heart rate, blood pressure,respiratory rate and O2 saturation should be monitored simultaneously and continuously. • The infants should be catheterized or on urine collection bags to monitor hourly urine output. • Blood gases at least 12th hourly and more frequently if wanted.

• Monitoring parameters

Heart rate	Q1H
Respiratory rate	Q1H
Blood pressure	Q1H – more frequently if hypotensive
SPO2	Q1H
Rectal temperature	Q15 min for first 4hours then Q1H
Skin temperature	Q1H
Neurological examination	At recruitment prior to cooling and Q24H till normal discharge
Urine output	Q6H
Skin breakdown or redness	Q4H

• Lab monitoring

LAB	Baseline	24hours	48hours	72hours
S.electrolytes				
Blood urea				
S.creatinine				
Blood sugar				
PT/PTT				
Hb,TC,DC,PLAT				
SGOT/SGPT				
ECG	When clinically indicated (dropping heart rate <80/min)			

- Four major RCT's (NICHD, TOBY, neo.neuro.network and ICE)
- Used total body cooling which started within 6 hrs of life from delivery
- To a target rectal temperature of 33.5 degree celsius and maintained for 72 hrs

Take home message

- Therapeutic hypothermia is a standard neuroprotective strategy in neonates with perinatal asphyxia
- Studies have shown that it reduces mortality and neurological disability at 18 to 24 months of age.

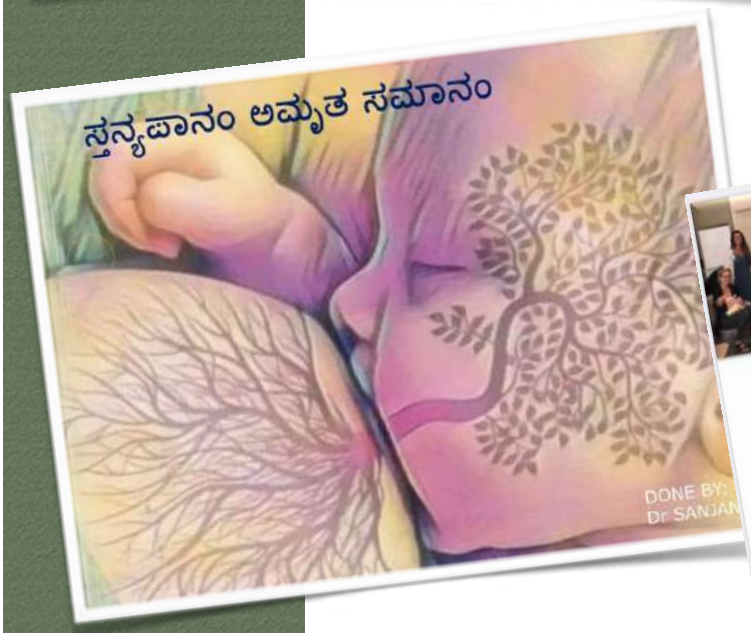
BREAST FEEDING WEEEK 2020 (AUGUST 1WEEK)

EVENTS OF BREAST FEEDING WEEK 2020
(AUGUST 1ST – AUGUST 7TH)

AUGUST 1st	EDUCATING THE MOTHERS IN COVID PNC WARDS
AUGUST 2nd	INTERACTIVE SESSION WITH COVID MOTHERS
AUGUST 3rd	WEBINAR ON BREAST FEEDING WEEK
AUGUST 4th	TALK ON BREAST FEEDING BY NURSING STAFF
AUGUST 5th	E-POSTER PRESENTATION
AUGUST 6th	E-SLOGAN PRESENTATION
AUGUST 7th	CLASS ON LACTATION MANAGEMENT BY Dr. ADARSH.E SKIT ON BREAST FEEDING AWARENESS PRIZE DISTRIBUTION

SUPPORT BREASTFEEDING FOR A HEALTHIER PLANET

WABA | WORLD BREASTFEEDING WEEK 2020

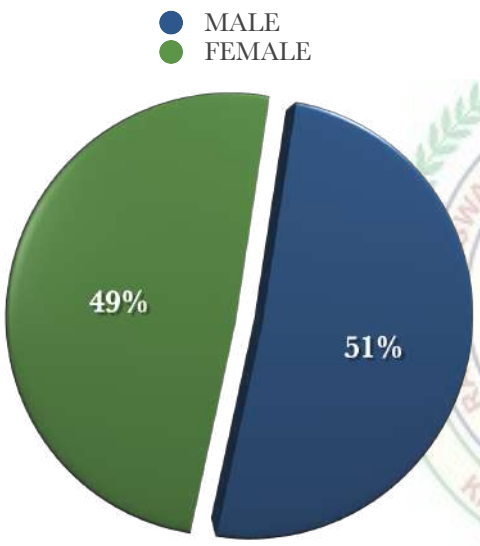


Independence day celebration in covid ward

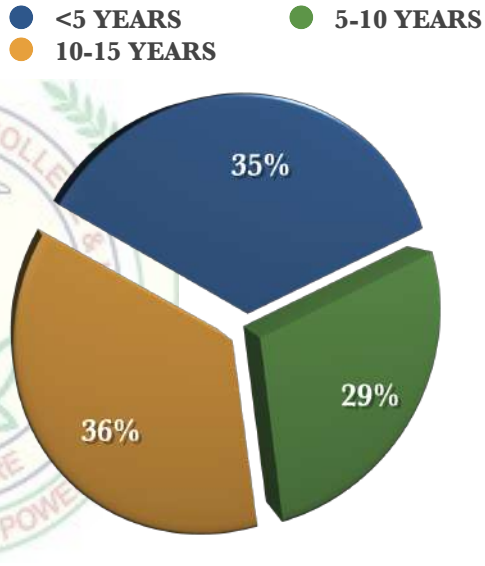
COVID IN RRMCH

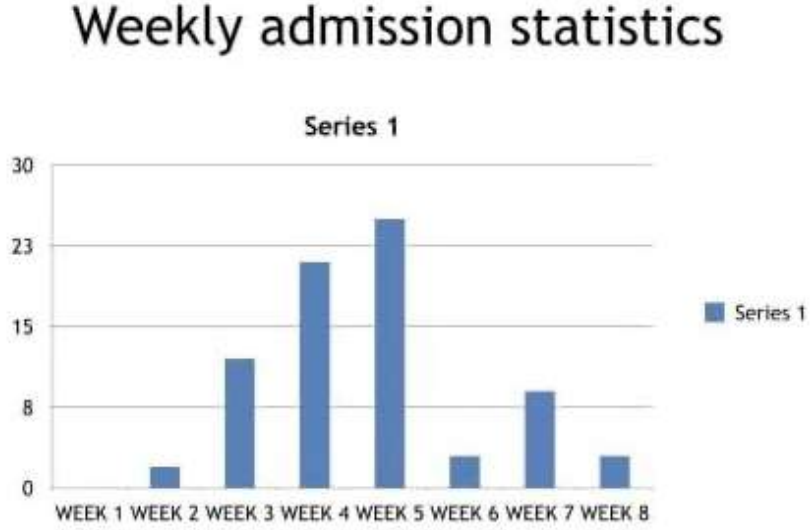
- **TOTAL NO OF ADMISSIONS - 98**
- NICU ADMISSIONS -21
- PICU ADMISSIONS-2
- COVID WARD ADMISSIONS -75
- NO OF DEATHS - 0

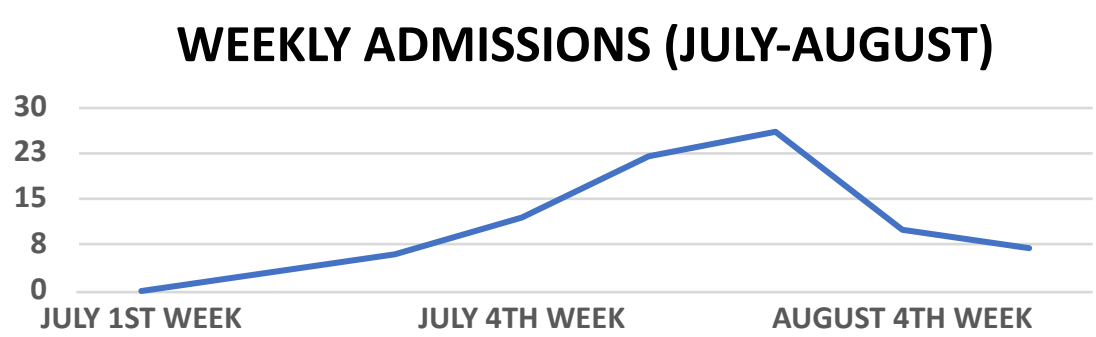
SEX WISE DISTRIBUTION

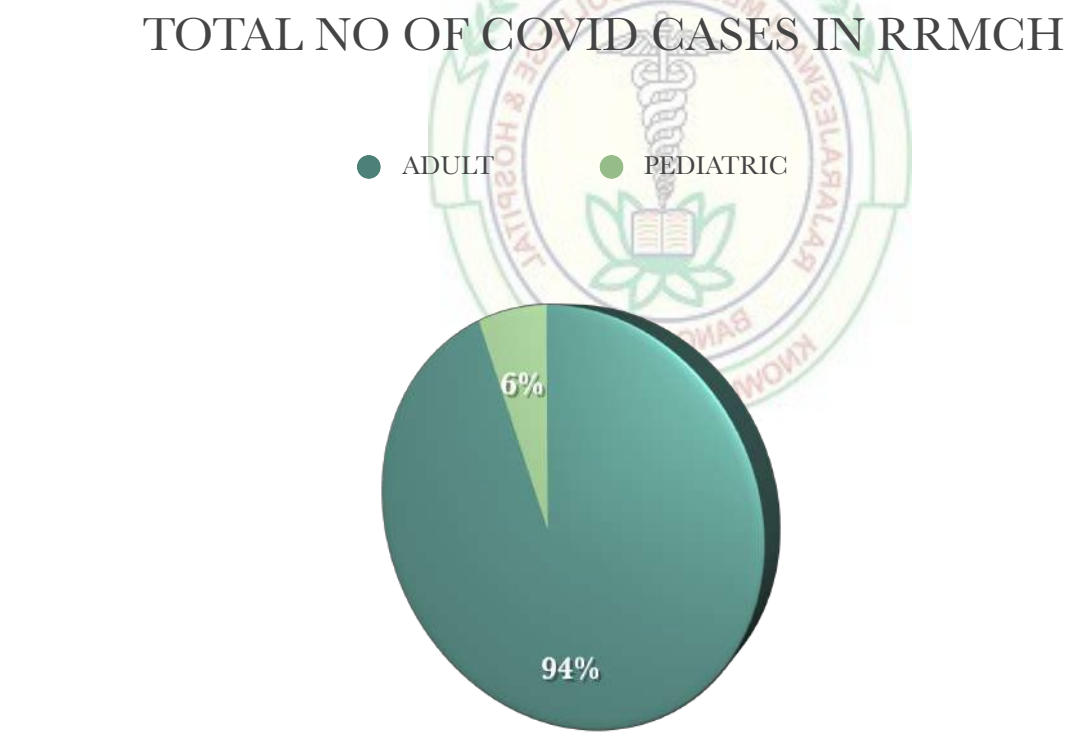


AGE WISE DISTRIBUTION









SO FAR IN THE FIGHT WITH COVID WAR THERE HAS BEEN

`ZERO' MORTALITY OF PAEDIATRIC AGE GROUP REPORTED

THANK YOU.....!