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Department of Health Research
Ministry of Health and Family Welfare, Government of India

Standard Treatment Workflow (STW)

NEONATAL HYPOGLYCEMIA

ICD-10-P70.4

WHOM TO SCREEN FOR HYPOGLYCEMIA?

- Preterm infants (< 37 weeks gestational age)
- Low birth weight Infants (< 2500 g)
- Small for gestation age (SGA): birth weight < 10th percentile
- Large for gestation age (LGA): birth weight > 90th percentile
- Infant of diabetic mother (IDM)
- Sick infants (eg: sepsis, asphyxia, respiratory distress, shock,polycythemia, seizure)
- Post exchange blood transfusion
- Infants on intravenous fluids and parenteral nutrition

Do not monitor blood glucose routinely in term healthy AGA infants

SCHEDULE OF BLOOD GLUCOSE (BG) MONITORING (PREFEED)

CATEGORY	TIME SCHEDULE
At-risk infants	At 2, 6, 12, 24, 48, 72 hours of life
Infants on IV fluids/ parenteral nutrition	Every 6-8 hours

HOW TO MONITOR BLOOD GLUCOSE (BG)?

- Use Glucose reagent strips along with a glucometer
- Low value (< 45 mg/dL) – Send a blood sample to the lab for confirmation
- Do not delay treatment

BLOOD GLUCOSE <45 mg/dL

LOOK FOR FOLLOWING SYMPTOMS AND SIGNS

- Stupor, lethargy, limpness
- Jitteriness, tremors, convulsions
- Episodes of cyanosis, apnea or tachypnea
- Weak and high-pitched cry
- Difficulty in feeding

ASYMPTOMATIC

- Immediate supervised feeding
- Breastfeeding or a measured volume of expressed breast milk (formula milk if EBM not available) by paladai or gavage

RE-CHECK BG AFTER 1 HOUR

If BG ≥ 45 mg/dL
- Continue feeds
- Continue BG monitoring every 6 hourly for 24 hours

Start IV glucose infusion if:
BG < 45 despite one attempt of feeding
OR
Baby becomes symptomatic

SYMPTOMATIC OR BG < 20mg/dL

- IV bolus: 2 mL/kg 10% dextrose
- Start IV infusion of dextrose at a glucose infusion rate (GIR) of 6 mg/kg/min

Re-check BG every 30 mins till 2 values ≥ 45 mg/dL & then every 6 hrs

BG < 45 mg/dL

Increase GIR @ 2 mg/kg/min till max GIR 12 mg/kg/min

Refractory hypoglycemia: High (>12 mg/kg/min for 24 hours) or persistent (> 7 days) GIR requirement

CONSIDER DRUGS* AND REFER TO HIGHER CENTRE

BG ≥ 45 mg/dL

Euglycemic for 24 hours on IV fluids

- Wean @ 2 mg/kg/min every 6 hourly
- Increase oral feeds
- Monitor BG every 6 hourly

Stop IV fluids when euglycemic on GIR 4 mg/kg/min

PREVENTION OF HYPOGLYCEMIA

- Support mother for early initiation and regular breastfeeding
- Maintain normothermia
- Do not feed 5%, 10% or 25% dextrose as a substitute for breast milk

PRACTICAL POINTS

- Avoid > 12.5-15% dextrose infusion through a peripheral vein
- Use a syringe/ infusion pump to deliver glucose
- Avoid frequent dextrose boluses
- Send blood in fluoride or oxalate vial for laboratory glucose estimation
- Always search for an underlying cause - polycythemia, sepsis, meningitis, hypothermia, IUGR
- Do not give antibiotics unless sepsis is suspected (refer to STW on sepsis)

*DRUGS FOR REFRACTORY HYPOGLYCEMIA

- Hydrocortisone: 5 mg/kg/day IV in two divided doses
- Diazoxide: 10-25 mg/kg/day PO in three divided doses
- Glucagon: 300 µg/kg SC or IM
- Octreotide: 2-10 µg/kg/day SC

ABBREVIATIONS

AGA : Appropriate for Gestational Age
EBM : Expressed breast milk
IV : Intravenous
IM: Intramuscular
PO : Per oral
SC : Subcutaneous
IUGR: Intra uterine growth retardation

☛ SYMPTOMATIC AS WELL AS ASYMPTOMATIC HYPOGLYCEMIA CAN LEAD TO PERMANENT BRAIN DAMAGE