Management of Neonatal Hypoglycemia (Gestational Age ≥ 35 + 0/7 weeks) in first 48 hours of age

True hypoglycemia is defined as blood glucose (BG) < 45 mg/dL in the first 48 hours of age. Between 48-72 hours, there is no clear guidance on specific BG threshold, but it should rise. After 72 hours of age, hypoglycemia is defined as BG < 60 mg/dL. Glucose is checked point of care (POC) first. If POC blood glucose is < 40 mg/dL, a confirmation will automatically be sent by the lab. A low POC glucose should be treated while awaiting confirmation result.

For All Infants:
- Encourage breastfeeding or breastmilk expression during the first hour after birth
- For mothers not planning to or unable to breastfeed, provide formula or donor milk (2-10 mL per feed in first 24hrs, 5-15 mL per feed in second 24hrs)

SIGNS of hypoglycemia: check at any time
- Seizures, coma, hypotonia, or lethargy
- Jitteriness, irritability
- Apnea, cyanosis, tachypnea
- Persistent oxygen need beyond transition period
- Hypothermia or fever
- Poor suck or refusal to feed
- Persistent tachycardia or bradycardia

RISK FACTORS for hypoglycemia: screen for first 24 hours
- Prematurity (< 37 weeks)
- SGA (weight < 10th percentile)
- Infant of a diabetic mother (IDM)
- LGA (weight > 90th percentile)
- 10 minute APGAR < 7
- Polycythemia (Hct > 65%)
- Maternal terbutaline, beta blockers, or antenatal steroids within 48 hours prior to delivery
- Microphallus (< 2 cm) or midline defects

Notify newborn provider and check blood glucose immediately: If BG is normal or if signs of hypoglycemia persist despite treatment, investigate other etiologies.

Check blood glucose at 2-3 hours of age AND before 2nd feed (after physiologic nadir)

Glucose < 25 mg/dL
- Notify newborn provider
- Place PIV
- Start 2 mL/kg D10W bolus followed by D10W at 80 mL/kg/day
- Recheck within 30 minutes
- Intensify breastfeeding or supplemental feeding as tolerated
- If on IV dextrose, wean when glucose is ≥ 50 mg/dL

Glucose 25-44 mg/dL
- Notify newborn provider
- Apply 40% dextrose gel (Massage 0.5 mL/kg into dried buccal mucosa over 30 seconds)
- Intensify breastfeeding or supplemental feeding
- Recheck glucose in 1-2 hours
- May repeat dextrose gel pathway twice

Glucose ≥ 45 mg/dL
- Continue breastfeeding or supplemental feeding
- Recheck ac glucose until ≥ 45 mg/dL x 2 consecutive feeds then q6 hours
- Stop risk factor based screening at 24 hours of age

If hypoglycemia persists beyond 72 hours of life (BG < 60 mg/dL), further investigation is required. Critical labs should be obtained when BG < 50 mg/dL: BMP, beta-hydroxybutyrate, insulin level, free fatty acids, lactate, cortisol, and growth hormone level (PRIORITY = BMP > BOHB > insulin > FFA > cortisol > GH). Consult endocrinology for further support when labs result.

References:
Adamski DH, Committee on Fetus and Newborn; Postnatal Glucose Homeostasis in Late-Preterm and Term Infants. Pediatrics 2011 March; 127(3): e20103851.

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