MANAGEMENT OF NEONATAL HYPOGLYCEMIA

By Sandra Wai MD (draft 2-8-18)

PURPOSE: To identify infants at risk, recommend treatment and further evaluation, and evaluate for discharge readiness.

LEVEL: Interdependent (*requires a physician order)

SUPPORTIVE DATA: Normal newborns can have low blood glucoses (25-45 mg/dL) in the first 24-48 hours of life as they transition from fetal life. By 48-72 hours, glucose set point normalizes to adult values (70-100 mg/dL) in most infants. Those who are unable to maintain normal values, especially if they have signs or symptoms of hypoglycemia, are at risk for neurologic injury.

INFANTS AT RISK FOR NEONATAL HYPOGLYCEMIA:

- Small for gestational age or intrauterine growth restricted
- Large for gestational age or infants of diabetic mothers
- Late preterm
- Exposed to perinatal stress, e.g. hypoxic ischemic encephalopathy

SYMPTOMS OF HYPOGLYCEMIA:

- Cyanosis, apnea, tachypnea
- Jitteriness, seizures, eye rolling
- Floppiness or lethargy
- Weak or high-pitched cry
- Poor feeding

SCREENING AND MANAGEMENT (0-48 hours):

- Follow AAP guidelines (see algorithm below)
- Consider higher glucose targets (50-60 mg/dL) for suspected hyperinsulinism
- If unable to reach preprandial blood glucose >60 mg/dL by 48 hours, consider further monitoring and/or workup

MANAGEMENT (>48 hours, i.e. persistent hypoglycemia):

- Goal preprandial blood glucose >60 mg/dL
    - Continue frequent feedings and monitoring
    - Wean IV dextrose more slowly, especially if initial glucose infusion rate >8 mg/kg/min
- Consider continuous feeds to avoid additional insulin secretion
- *Consider safety fast prior to discharge for infants with persistent hypoglycemia (see algorithm below)*
- Consider Endocrinology consult if suspect congenital hypoglycemia disorder

EVALUATION FOR SIGNIFICANT HYPOGLYCEMIA:

Infants to consider evaluating with critical labs:

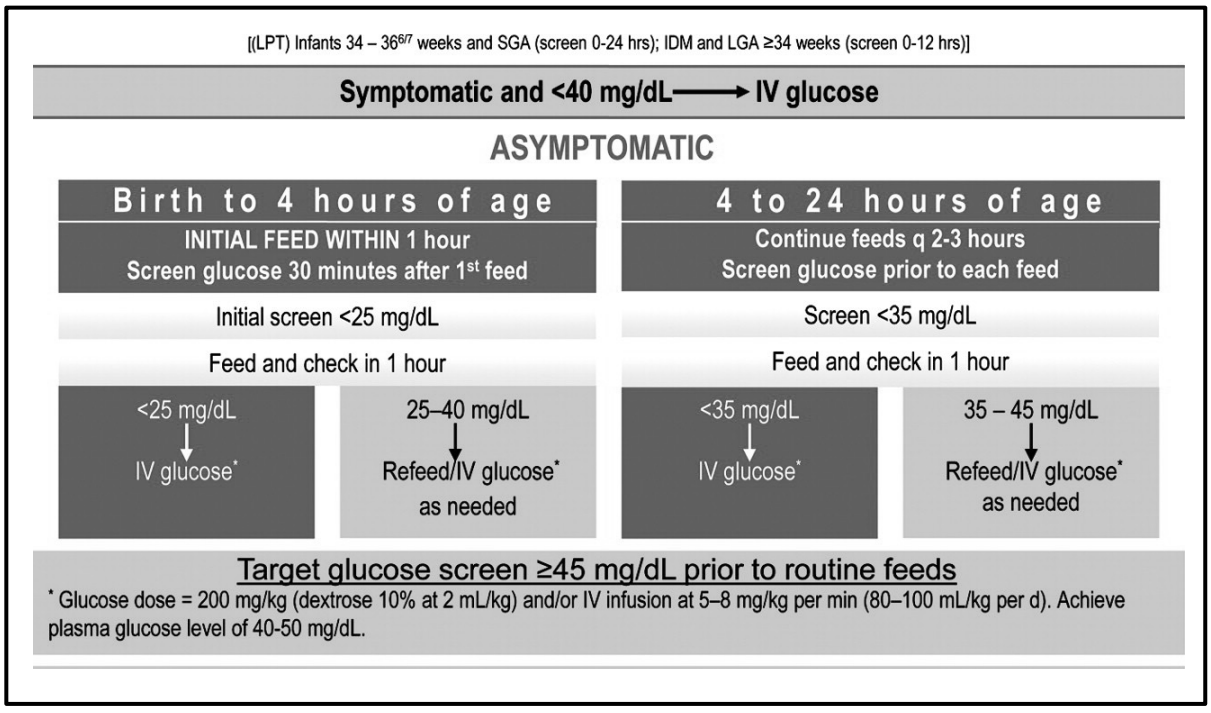
- Episode of symptomatic hypoglycemia
- Unable to maintain pre-prandial glucose >60 or requires prolonged or high glucose infusion rate
- Family history of genetic form of hypoglycemia
- Congenital syndromes (Beckwith-Wiedemann), abnormal physical features (midline facial malformation, microphallus)

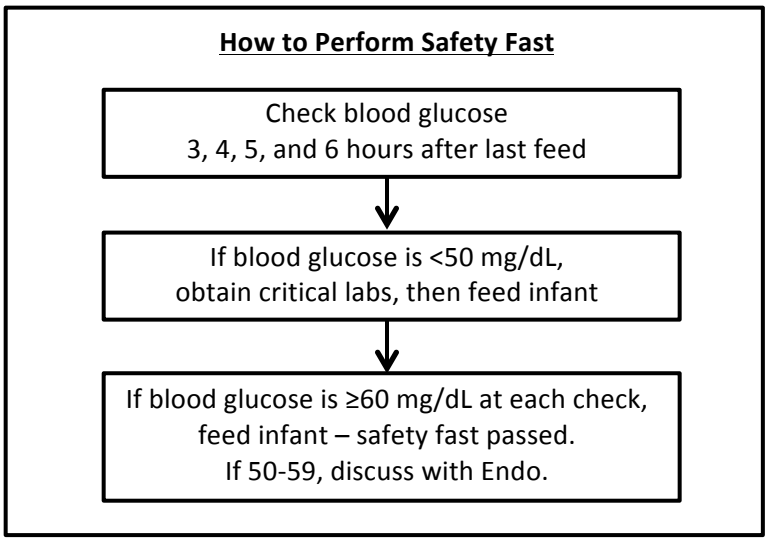
When to evaluate:

- After 3-4 days old as labs are difficult to interpret in the first few days of life
- While blood glucose is <50 mg/dL
- Before treating hypoglycemia

Critical labs (listed in order of importance):

1. Stat BMP for plasma glucose, bicarbonate
2. Insulin
3. Cortisol
4. Growth hormone
5. Free fatty acids
6. Beta-hydroxybutyrate or urine ketones





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