Nutrition Guidelines for Premature Infants
Birth Weight Less Than or Equal to 1250 grams

Goals

▪ Provide adequate nutritional support for the premature infant while decreasing feeding-related morbidities
▪ Standardize nutrition management including TPN initiation and advancement, minimal enteral feeding, fortification and feeding advancement
▪ Transition from intravenous to enteral nutrition within the first 1-2 weeks through early trophic feeding and calculated, standardized enteral feeding advancement
▪ Standardize the definition and management of feeding intolerance
▪ Provide adequate vitamin and iron supplementation
▪ Minimize caloric and protein deficits imposed upon patients by preterm birth
▪ Reduce TPN and central line days by optimizing nutritional status

Background

▪ Adequate nutritional support of premature infants decreases extrauterine growth restriction, promotes necessary nutrient accretion and improves neurodevelopmental and growth outcomes.
▪ Early achievement of adequate enteral nutrition decreases the duration of parenteral nutrition thereby reducing the risk of central line infection and may decrease length of hospital stay without increasing the incidence of necrotizing enterocolitis (NEC).
▪ This guideline summarizes key steps in advancement of total fluid and enteral feedings, as well as the corresponding protein and lipid composition of nutrient-optimized TPN.
▪ This guideline assists in optimizing nutritional status in babies until full enteral feedings can be established.

Human Milk

▪ The preferred feeding choice for all infants is human milk.
▪ The preferred initial feeding is the infant’s mother’s own milk (MOM). If MOM is not available, then pasteurized donor human milk (PDHM) can be used.
  o Consent must be obtained for use of PDHM.
  o See “Guideline for the Use and Storage of Pasteurized Donor Human Milk in the NICU” for details (link below)
▪ Colostrum should be used for oral care (via swab or syringe) as soon as it becomes available, even in “NPO” infants.
Feedings

- Minimal enteral feedings (MEF) or trophic feedings should be initiated within 12 hours of birth.
  - Exceptions to early MEF or trophic feedings include critically ill, hemodynamically unstable or surgical patients.
  - The presence of an umbilical arterial catheter (UAC), treatment with Indocin, and high FiO2 requirement are not considered absolute contraindications to trophic feeding.
- Begin MEF with an initial volume of 15 – 20 ml/kg/day, administer via NG/OG, and schedule feedings Q3hrs. Target duration of MEF is 3 days.
- If no significant feeding intolerance is noted, begin advancement of feeding volume on Day 4. Goal is to advance the volume by 20ml/kg/day to a feeding volume of 150 – 170 ml/kg/day.
- In rare cases when there is no human milk available for the baby (no MOM or consent for PDHM), initiate feedings with Similac Special Care (SSC) 24 kcal/oz High Protein formula.
- Adjustments in the management and advancement of feedings may be needed for babies who:
  - Cannot be fed due to surgical reasons, critical illness, hemodynamic instability or determination by attending Neonatologist as not a candidate for enteral feeding
  - Demonstrate objective signs of feeding intolerance (refer to “Feeding Intolerance Decision Pathway”)
  - Have significant abnormalities in pH, glucose, renal function, sodium and/or triglyceride level

Fortification

- **Infants ≤ 1000 grams or ≤26 6/7 weeks GA at birth**
  - When providing human milk feedings (and with consent obtained for the use of donated human milk products), Prolacta human milk-based fortifier can be initiated at +6 kcal/oz once the baby is tolerating a feeding volume of 60ml/kg/day
  - Additional fortification with Prolacta human milk cream (more than 26kcal/oz) can be implemented on a case-by-case basis to optimize growth.
  - If there is no consent to use donated human milk products, fortify MOM with Similac HMF to 24 kcal/oz once the baby is tolerating a feeding volume of 60ml/kg/day.
  - Weaning off Prolacta human milk-based fortifier should begin at 33 0/7 weeks. Introduce 2 breast milk feedings fortified with Similac HMF to 24kcal/oz per day, over 3 days. All feedings will be fortified with Similac HMF by 33 4/7 weeks.
    - For infants born severely SGA who are still < 1250g when at 33 0/7 weeks, delay weaning of Prolacta until either > 1250g or 14 days chronological age, whichever occurs later.
- **Infants ≥1001 grams or ≥27 weeks GA at birth**
  - Similac Human Milk Fortifier (HMF) Hydrolyzed Protein Concentrated Liquid to 24 kcal/oz can be initiated once the baby is tolerating a feeding volume of 60ml/kg/day.
  - Additional fortification (more than 24kcal/oz) with Similac HMF can be implemented on a case-by-case basis to optimize growth.
Feeding Intolerance

- Some feeding intolerance is expected in premature infants due to gut immaturity, intestinal dilation related to noninvasive ventilation, or both. Feeding should not be withheld unless pathologic signs of feeding intolerance are present.
- Gastric residuals will not be routinely checked prior to feeding on stable infants.
- See “Feeding Intolerance Decision Pathway” for details (link below)

Vitamins and Iron

References


