Breastfeeding Issues Associated with Hyperbilirubinemia

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Synthesis

Load
Amount of Bilirubin presenting to liver

Liver
Uptake ⇒ Conjugation ⇒ Excretion

Bile Duct

Enterohepatic Circulation

Intestine

Excretion

Dixit and Gartner, Contemporary Pediatrics, April 1999.
Increased enterohepatic circulation

- Breastfeeding difficulties: ↑ reuptake of unconjugated bili via enterohepatic circulation
- Not enough milk in intestine to move bilirubin through gut quickly
- ↓ milk transfer → ↑ risk for hyperbilirubinemia
- Mother vs. Baby
  - Mother: not enough milk, not offering enough
  - Baby: ineffective emptying of breast
Mother: Not enough milk

- **Preglandular**
  - Lack of pituitary prolactin
  - Retained placenta (no fall in progesterone)
  - Thyroid dysfunction

- **Glandular**
  - Insufficient glandular tissue (tubular, no change in breast size with pregnancy, family history)
  - Reduction mamoplasty (interfere with nerves)

- **Postglandular *** (most common)
  - Ineffective or infrequent milk removal

Physiology and Endocrine Changes Underlying Human Lactogenesis II: Margaret C Neville*,3 and Jane Morton 2001 J. Nutr. 131:3005S-3008S.
Ineffective or infrequent milk removal

Milk left in breast
\[ \downarrow \]
Negative feedback
(make less milk)
\[ \downarrow \]
Decrease milk supply

- Anticipatory guidance: 10-12 feedings/24 hours
- Increasing numbers of wet and soiled diapers
- Breast firm before feeding/softer after
- Sleepy baby – awaken to feed
Delayed Lactogenesis 2

- Increased production of milk volume days 2-5
- Risk factors for delays
  - First time mothers (milk in later)
  - Diabetes (insulin required for milk production)
  - Stress
    - C-section
    - Pre-eclampsia
    - Prolonged labor
    - Ill infant in NICU
  - Misinformation
    - Not offering breast often, especially in first days
    - Giving formula at night
Infant

- Ineffective milk removal
  - Preterm infant
    - Weak suck
    - Tire quickly
    - Sleepy
  - Weak or uncoordinated suck
    - Low tone infants
    - Substance exposed infants
  - Ineffective latch
    - Tongue tie
Consequences of Inadequate Latch

Inadequate latch
(often painful over time)
↓
Inadequate milk transfer
↓
Dehydration/Hyperbil/Poor weight gain
↓
Low milk supply
(by 1 week)
Breast milk jaundice

- Unknown etiology: ? factors in milk that inhibits bilirubin processing by liver and increase bilirubin re-absorption from small bowel
- Natural extension of physiologic jaundice
- Late onset (day 4 to 10)
  - 2/3 of BF - unconjugated bili > 1.5 in 3rd week of life (none among formula fed)
  - 1/3 have unconjugated bili > 5 mg/dl
- Usually anicteric by 6 weeks
- Not indication to stop breastfeeding or to supplement
Summary

- Most common breastfeeding problems leading that contribute to hyperbilirubinemia
- Identifiable maternal and infant risk factors
  - Proactive approach –
    - Better guidance
    - Closer follow-up
  - Lower threshold for intervention
  - Earlier lactation consult