Supporting Exclusive Breastfeeding in the Early Postpartum Period

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I have no conflicts of interests and no disclosures to make

All Babies are Born to Breastfeed!

The Sacred Hour
Necessary
But not sufficient

US Breastfeeding Rates

2010 US Breastfeeding Rates
• Any Breastfeeding
  • Initiation 76.9%
  • 6 months 47.2%
  • 12 months 25.5%
• Exclusive Breastfeeding
  • 3 months 37.7%
  • 6 months 16.4%

2020 Healthy People Goals
• Any Breastfeeding
  • Initiation 81.9%
  • 6 months 60.0%
  • 12 months 34.4%
• Exclusive Breastfeeding
  • 3 months 46.2%
  • 6 months 25.5%

Outline
A. Benefits of exclusive breastfeeding during the first six months after birth
   • Immune protection
   • Optimal growth and development
   • Cost to families and society
B. Common challenges & evidence-based practices that support exclusive breastfeeding in the postpartum period
   • Hypoglycemia
   • Hyperbilirubinemia
   • Early weight loss
   • Maternal concerns
   • Breastfeeding myths
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Immune Protection

*Human milk is a complex fluid that simultaneously provides nutrients and bioactive components to facilitate the adaptive, functional changes required for the optimal transition from intrauterine to extrauterine life.*

Host Defenses in Human Milk

- Cellular elements
  - Lymphocytes, PMN & Macrophages
- Immunoglobulins & other direct anti-infective agents
  - IgA, Secretory IgA
  - Lactoferrin
  - Lysozyme
  - Casein
- Mucin
- Anti-inflammatory agents
  - Vitamin A, C, E
  - Catalase
  - Glutathione peroxidase
  - PAF acetylhydrolase
  - Prostaglandins
- Immunomodulators
  - Prolactin
  - Cytokines
  - Interleukins
  - Interferons
  - TNF & TGF
- Other bioactive factors
  - Oligosaccharides
  - FFA
  - Nucleotides
  - EGF

Enteromammary Immune System

Health Begins in the Gut

- Gut - largest immune organ in the body
- Functionally immature at birth - significant intestinal permeability
- Tight junctions of GI mucosa take several weeks to mature and close
- Allows absorption of pathogens and whole proteins
- Closure of tight junctions occurs faster in breastfed infants than in formula-fed babies
- Protects against absorption of pathogens and whole proteins
- sIgA from breastmilk coats the gut, providing passive immunity during a time of reduced neonatal gut immune functions

Oligosaccharides

- Prebiotics – support beneficial bacteria in gut
- Act as decoys for pathogens

Centrifuged & magnified x 100
Human Milk Creates a Protective Environment in the Gut

- Promotes normal gut microflora
  - Lactobacillus bifidus (probiotics)
  - Predominant gram-negative enteric organisms
  - Almost completely absent
- Creates and maintains a low intestinal pH
  - pH 5.1 - 5.4 - Human milk fed
  - pH 5.7 - 6.0 - Supplemented with formula
  - pH 5.9 - 7.3 - Formula fed

Bullen, Tearle, & Stewart, 1977.

Risks of Supplementation

- Supplementation with formula changes the bacterial profile of breastfed infants to resemble that of formula-fed infants
  - Less bifidobacteria - no longer dominant
  - More gram negative & anaerobic bacteria
  - Takes 2-4 weeks of breastfeeding to return to normal flora
  - pH is higher – less protective
  - Tight junctions widen – allowing pathogens to be introduced
  - Inflammatory response - can occur from colonization with pathogenic bacteria from one supplementation with formula.

Mackie, Sghir, & Gaskins, 1999


Human Milk Provides Protection from Sepsis in NICU

<table>
<thead>
<tr>
<th>Sepsis Rate</th>
<th>Breastmilk</th>
<th>Formula</th>
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<tbody>
<tr>
<td>Day 0-10</td>
<td>5% (2/38)</td>
<td>10% (2/20)</td>
</tr>
<tr>
<td>Day 11-24</td>
<td>9% (4/43)</td>
<td>20% (4/20)</td>
</tr>
<tr>
<td>Day 25-38</td>
<td>0% (0/49)</td>
<td>15% (1/72)</td>
</tr>
</tbody>
</table>


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MILK IS A NATURAL?
Milk is Species Specific

- Cow Milk
- Horse Milk
- Goat Milk
- Human Milk
- Blue Whale Milk

<table>
<thead>
<tr>
<th>Component</th>
<th>Cow Milk</th>
<th>Horse Milk</th>
<th>Goat Milk</th>
<th>Human Milk</th>
<th>Blue Whale Milk</th>
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</thead>
<tbody>
<tr>
<td>Fat</td>
<td>5%</td>
<td>4%</td>
<td>8%</td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td>Protein</td>
<td>25%</td>
<td>27%</td>
<td>25%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>Water</td>
<td>20%</td>
<td>19%</td>
<td>17%</td>
<td>28%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Milk Protein is Very Different

- **Human Milk**
  - Casein:whey - 40:60
  - Beta-casein
  - Small volume micelles
  - Soft, flocculent curd

- **Bovine Milk**
  - Casein:whey - 80:20
  - Alpha-casein
  - Double the volume
  - Hard curd

Carbohydrates in Human Milk

- **Lactose**
  - Comes with digestive enzyme - lactase
  - Newborns are never lactose intolerant
  - Except in very rare genetic disorders

- **Oligosaccharides**
  - Multiple functions


Fats in Human Milk

- Provides 50% of calories
- Cholesterol
  - High level in human milk
  - Enhanced intestinal membrane stability
  - Essential for myelin formation in the brain development
- Long chain fatty acids
  - Important for brain and visual development
  - Arachidonic acid (ARA) - Omega 6 fatty acid
  - Docosahexanoic acid (DHA) - Omega 3 fatty acid


Breastmilk and Subsequent Intellectual Performance in Premature Infants at 8 yr

**Human Milk = Higher IQ**

Anderson et al. Am J Clin Nutr, 1999
**Human Milk = Higher IQ**


**IQ at 8 Years Old Correlates with Duration of Breastfeeding in Premature Infants**


1985 cohort, New Zealand, 99% follow-up, recall and record.

* = p < 0.05, ** = p < 0.01, *** = p < 0.001

(Richard Schander, MD)

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**Superior Fat Absorption**

- Fat-digesting enzyme - Lipase
- Triglycerides – specific for humans
- 98% of fats are in the form of triglycerides
  - Saturated and unsaturated fatty acids
  - Attached to glycerol backbone in specific positions
    - sn1, sn2, sn3
  - 75% of saturated fatty acids are Palmitic acid
    - Human milk: sn-2 position
    - Bovine milk: sn1 and sn3 positions


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   - Maternal concerns

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**Cost to Families**

- Intake in first year for average baby
  - 9,125 ounces of milk
- Cost of formula for first year
  - Powdered = $1260
  - Ready to feed = $1889
Cost to Society

- If 90% of US families could comply with medical recommendations to breastfeed exclusively for 6 months, the United States would
  - Save $13 billion per year
  - Prevent > 911 deaths per year
    - Nearly all of which would be in infants

- If 80% compliance, the United States would
  - Save $10.5 billion per year
  - Prevent 741 deaths per year


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Babies at Risk for Hypoglycemia

- Large for Gestational Age (LGA)
- Small for Gestational Age (SGA)
- Low birth weight (<2500 g)
- Preterm (< 37 wk)
- Late Preterm Infants (34 0/7-36 6/7 wk)
- Inborn Error of Metabolism (IEM)
- Beckwith Wiedemann Syndrome
- Microphalus or midline defect (possible pituitary defect)
- Maternal drug treatment (terbutaline, propranolol, oral hypoglycemics)
- Maternal diabetes mellitus
- Perinatal stress (severe acidosis, hypoxia-ischemia)
- Cold stress
- Respiratory distress
- Suspected infection

Hypoglycemia

- Definition is controversial

- No significant correlation among plasma glucose levels, clinical symptoms and long-term sequelae

- Difference in type of sample studied
  - Plasma glucose levels 10-15% > whole blood glucose

- Bedside glucose testing strips good for screening
  - Vary significantly from true glucose levels

Physiologic Nadir

- Normal drop in glucose over first 2 hours
  - Self limiting
  - Spontaneous rise in 2-3 h whether fed or not

- Compensated by ketogenic response to protect brain
  - Even with prolonged intervals between feeds (> 8 h)

- No evidence that asymptomatic hypoglycemic infants benefit from treatment
  - Normal neurologic outcomes
Evidence-based Practices
American Academy of Pediatrics
Academy of Breastfeeding Medicine

AAP 2011 Guidelines
- Breastfed term infants have
  - Lower concentrations of plasma glucose
  - Higher concentrations of ketone bodies than do formula-fed infants
- It is postulated that breastfed infants tolerate lower plasma glucose concentrations without any clinical manifestations or sequelae of neonatal hypoglycemia because of the increased ketone concentrations.
- No single concentration or range of plasma glucose concentrations that is associated with clinical signs.
- The generally adopted glucose concentration that defines hypoglycemia for all infants (i.e. <47 mg/dL) is without rigorous scientific justification.
- Symptomatic infants with glucose < 40 mg/dL
  - Treat with IV glucose
- At-risk asymptomatic infants
  - Management differs for the period from birth to 4 hours vs. 4 to 24 hours

Treatment of At-Risk Asymptomatic Infants
- From birth to 4 hours after birth:
  - Initial feeding should begin within 1 hour
  - Glucose testing 30 min AFTER the first feeding.
  - If the first glucose level is < 25 mg/dL
    - Re-feed and recheck glucose level in 1 hour.
  - If the second glucose level is 25 - 40 mg/dL
    - Re-feed or IV glucose
  - If the second glucose level remains < 25 mg/dL
    - IV glucose

 screening and management of pediatric glucose homeostasis in late preterm and term SGA, IDMS/AGA infants

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Treatment of At-Risk Asymptomatic Infants
- From 4 to 24 hours after birth:
  - Continue feedings every 2 to 3 hours and check glucose level before each feeding.
  - If the glucose level is less than 35 mg/dL
    - Refeed and recheck glucose level in 1 hour
  - If glucose level remains lower than 35 mg/dL
    - Treat with IV glucose.
  - Target glucose level ≥ 45 mg/dL
    - Goal glucose level = 40-50 mg/dL

Symptoms of hypoglycemia include: irritability, tremors, lethargy, hypoglycemic fits, irritability, tachycardia, apnea, poor feeding.

Target glucose screen ≥ 45 mg/dL, prior to routine feeds

*Glucose dose = 200 mg/kg/dose 10% dextrose in 25 mL with 15 mL/hr IV flush at 4.5 mg/kg/hour continuous IV infusion. Achieve plasma glucose level at 40-45 mg/dL.
ABM Clinical Protocol #1

Guidelines for Blood Glucose Monitoring and Treatment of Hypoglycemia in Term and Late-Preterm Neonates

Revision June, 2014

www.bfmed.org

ABM Clinical Protocol #1

1. Recommended low thresholds: plasma glucose level
   - 1-2 h after birth: 28 mg/dL (1.6 mmol/L)
   - 3-47 h after birth: 40 mg/dL (2.2 mmol/L)
   - 48-72 h after birth: 48 mg/dL (2.7 mmol/L)

2. Early and exclusive breastfeeding meets the nutritional and metabolic needs of healthy, term newborn infants

General Recommendations

- Routine supplementation is unnecessary & interferes
  - With establishing normal breastfeeding
  - With normal metabolic compensatory mechanisms
- Initiate breastfeeding within 30-60 min after birth
  - Continue on-demand feeding (crying is very late sign)
- Feedings should be frequent
  - Minimum of 10-12 per day during first few days after birth
- Facilitate skin-to-skin contact of mother and infant

Management of Asymptomatic Hypoglycemic Infants

- Breastfeed every 1-2 hours or
- Feed 3-5 mL/kg if not breastfeeding
  - Expressed colostrum, donor breastmilk, elemental formula, partially hydrolyzed formula, term formula (in order of preference)
- Recheck blood glucose before feedings until value is normal and stable
- If glucose remains low, begin IV glucose therapy
  - Breastfeeding may continue during IV glucose therapy

Supporting Mothers

- Concerns or risk for hypoglycemia causes stress to mother and family
  - Assure mother there is nothing wrong with her milk
  - Assure her that any needed supplement is usually temporary
- Have mother hand-express or pump milk for infant
  - Can overcome feelings of inadequacy
  - Helps establish full milk supply
  - Important to continue until infant is feeding well
- Facilitate skin-to-skin contact during IV therapy
  - May lessen trauma of intervention
  - Provides physiologic thermoregulation
  - Stimulates milk production

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Risk Factors

- Infant Risk Factors
  - Prematurity, late preterm
  - Bruising, cephalohematoma
  - Hemolysis
  - Blood type incompatibilities
  - DAT positive
  - Polycythemia
  - G6PD deficiency
  - Family history
  - East Asian or Mediterranean
  - Infection
  - Delayed stooling of meconium
  - Poor feeding

- Maternal Risk Factors
  - Diabetes
  - Obesity
  - Pre-eclampsia
  - Cesarean delivery

Common Confusion

Physiologic Jaundice vs. Starvation Jaundice (often inaccurately called “Breastfeeding” Jaundice) vs. Breastmilk Jaundice

Physiologic Jaundice

- Normal unconjugated hyperbilirubinemia of all newborns during the first week after birth
- Functional role of bilirubin as potent antioxidant
- About 40% of newborns have bilirubin level of
  - 5 mg/dL at 24 h of age
  - 7 mg/dL at 36 h of age

Breastmilk Jaundice

- Unconjugated hyperbilirubinemia that extends into the second and third weeks after birth and often up to 8-12 weeks
- Occurs in about 2/3 of breastfed infants
- Vigorous, feeding well, gaining weight
- Enhanced intestinal absorption of bilirubin
- May be genetic predisposition
- Intervention is usually not necessary
  - Unless levels exceed 20 mg/dL.
  - Phototherapy or formula x 12 h will bring levels down

Evidence-based Practices

Academy of Breastfeeding Medicine
American Academy of Pediatrics
ABM Clinical Protocol # 22

Guidelines for Management of Jaundice in the Breastfeeding Infant Equal to or Greater Than 35 Weeks’ Gestation

Breastfeeding Medicine. 2010;5(2):87-93

General Recommendations

- Early initiation of breastfeeding
  - Preferably in the first hour after birth
  - (vaginal AND cesarean deliveries)
- Exclusive breastfeeding encouraged
- Feeding anything prior to the onset of breastfeeding
  - Delays establishment of good breastfeeding by infant
  - and establishment of adequate milk production
  - Increases risk of starvation & weight loss
  - and risk of exaggerated hyperbilirubinemia

General Recommendations

- Optimize breastfeeding management from the beginning
- Assure position and latch
- Provide education on early feeding cues
  - Teach mother to put infant to breast before crying

Breastfeeding Medicine. 2010;5(2):87-93

FIGURE 2

The more frequent the breastfeeding, the lower the likelihood of hyperbilirubinemia

To gauge the effect of breastfeeding frequency during the first day of life in the Japanese cohort, 140 feeding, term, breastfed, Japanese newborns, gestational age >37 weeks, were studied. All infants received in addition to milk, which included the frequency of breastfeeding. T/B measurements were obtained on Day 1 using the original study for Shindo jaundice meter, which provides a total bilirubin level in milligrams per 100 ml of serum. In this population, a total bilirubin levels of 0.0 is equivalent to a T/B of 11 in ng/dL. The number of infants with T/B levels <0.5 on Day 1 is shown in relationship to the number of times the mother breastfed her infant in the first 24 hours of life.

Breastfeeding Medicine. 2010;5(2):87-93

FIGURE 1

Establishing “risk zone” of hyperbilirubinemia in newborns

This nomogram is based on hour-specific serum bilirubin values obtained from 1,467 well newborns ≥40 weeks’ gestational age with a birth weight ≥2,000 g or ≥36 weeks’ gestational age with a birth weight ≥1,500 g. The serum bilirubin level was obtained in the first 24 hours of life. The nomogram was derived from the cumulative percentage of serum bilirubin levels in the first day of life, which was tabulated into an established “risk zone” for hyperbilirubinemia. The “risk zone” was defined as levels exceeding 10 mg/dL in the first 24 hours of life.

Breastfeeding Medicine. 2010;5(2):87-93
Phototherapy

- Provide phototherapy in mother’s room if possible
- Continue exclusive breastfeeding
  - Intermittences of phototherapy for up to 30 minutes do not reduce effectiveness of treatment
- Home phototherapy if possible
  - Discouraged for infants with risk factors
- Breastfeeding infants readmitted from home
  - Should be admitted to a unit where mother can reside and breastfeeding can continue without disruption

Supplementation?

- Usually not necessary
  - if mother is available to breastfeed frequently
  - Even if baby is getting phototherapy
- If supplementation is needed
  - Expressed breastmilk, donor breastmilk, formula
  - Mother should continue to breastfeed

Supplementation with Artificial Milk

- Use of hydrolyzed protein formula preferred
  - May be more effective in reducing bilirubin levels
  - Less likely to induce milk allergies or intolerance
  - May not be viewed by parents as “switching to formula”
- Avoid excessive amounts of formula
  - To maintain frequent breastfeeding
  - Preserve maternal milk production at high level
  - Small gastric volume in first few days
- Adequate caloric intake and volume should be assured
- Avoid use of nipples/teats and bottles if possible
  - Cup or supplemental nursing device suggested
Neonatal Feeding Amounts for the First Five Days Following Birth (Full Term Infants)

<table>
<thead>
<tr>
<th>DAY</th>
<th>PER FEEDING</th>
<th>TOTAL in 24 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Few drops to 5 mL (1 tsp)</td>
<td>Few drops to 1 oz (2 Tbsp)</td>
</tr>
<tr>
<td>2</td>
<td>15 mL (=0.5 oz or &lt;1 Tbsp)</td>
<td>1-4 oz (0.25-0.5 cup)</td>
</tr>
<tr>
<td>3</td>
<td>15-30 mL (0.5-1 oz or 1-2 Tbsp)</td>
<td>4-8 oz (0.5-1 cup)</td>
</tr>
<tr>
<td>4</td>
<td>45 mL (1-1.5 oz or 2-3 Tbsp)</td>
<td>8-12 oz (1-1.5 cup)</td>
</tr>
<tr>
<td>5</td>
<td>45-60 mL (1.5-2 oz or 3-4 Tbsp)</td>
<td>12-18 oz (1.5-2 cups)</td>
</tr>
</tbody>
</table>


Normal Newborn Stomach Capacity

- The capacity of the newborn stomach after birth is very small in the first 2 days
- In a 3-kg baby the average physiological capacity of the stomach is:
  - 6 mL on the first day (6 mL x 8 feeds = 56 mL)
  - 12 mL on the second day (12 mL x 10 feeds = 120 mL)
- The average volume of mother's colostrum is:
  - 25-56 mL total on the first day
  - 113-185 mL total on the second day


Colostrum Ingested on Day One

Abstract

- **Objective:** To determine the mass of colostrum ingested by exclusively breastfed newborn infants during the first 24 hours of extrauterine life.
- **STUDY DESIGN:** Milk ingested during the first 24 hours of life by 90 healthy newborn infants was evaluated by use of a scale with high sensitivity. The masses were measured during 8-hour periods. Associations of the mass measured with prenatal and postnatal variables were tested.
- **RESULTS:** The mass of colostrum ingested was evaluated in 307 feedings, with 3.4±1 feedings recorded per 8-hour period of observation. Mean gain per feeding was 15±11 g. The daily mass of milk ingested by newborn infants was estimated at 15±11 g. This volume did not show a tendency to increase during the first 24 postnatal hours, nor was it related to perinatal or postnatal factors or to breastfeeding time.
- **CONCLUSIONS:** During the first 24 hours after birth newborns ingested 15±11 g of milk.


Normal Newborn Stomach Capacity

Day 1 - 0.25 oz (7.5 mL) ~ 10 mL
Day 2 - 0.46 oz (13.8 mL) ~ 15 mL
Day 3 - 0.96 oz (28.8 mL) ~ 30 mL


Visual Aids for Newborn Stomach

AAP Guidelines

Key elements for clinicians

#1. Promote and support successful breastfeeding
In numerous policy statements, the AAP recommends breastfeeding for all healthy term and near-term newborns.

This guideline strongly supports this general recommendation.

**RECOMMENDATION 1.0:**
- Clinicians should advise mothers to nurse their infants at least 8 to 12 times per day for the first several days

Poor caloric intake and/or dehydration associated with inadequate breastfeeding may contribute to the development of hyperbilirubinemia.

Increasing the frequency of nursing decreases the likelihood of subsequent significant hyperbilirubinemia in breastfed infants.

Providing appropriate support and advice to breastfeeding mothers increases the likelihood that breastfeeding will be successful.

**RECOMMENDATION 1.1:**
- The AAP recommends against routine supplementation of nondehydrated breastfed infants with water or dextrose water
- Supplementation with water or dextrose water (PO or IV) will not prevent hyperbilirubinemia or decrease TSB levels.

Assure mother that hyperbilirubinemia is not her fault
- Nothing wrong with her milk
- Breastfeeding is the optimal method of infant feeding

Explain temporary nature of any interventions
- Jaundice not likely to recur after treatment

Assure adequate lactation support
- Position, latch
- Pumping, hand expression

Assure adequate family support
- Rest, food, fluids

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- Early weight loss
- Maternal concerns
- Breastfeeding myths

7%-10% loss is considered normal for breastfed baby

Most babies should be back at birth weight by 10-14 days after birth

10% of birth weight loss is NOT equivalent to “10% dehydration”
- Does warrant attention and evaluation
- Late preterm infant measures should be taken earlier
Expert Opinion

- A loss of 7% is average in the first week for the breastfed infant. (Lawrence and Lawrence)
- If the baby loses 7% in the first 72 hours ->
  - Breastfeeding should be observed by a trained professional for proper technique and milk transfer.
- If the baby is nursing well, appears otherwise healthy, and has appropriate stooling patterns ->
  - Another weight check should be scheduled in two days.

newborns.stanford.edu

Excessive Maternal IV Fluids

- The use of IV fluids in labor causes a large shift of fluid from the mother to the fetus especially when DSW or Lactated Ringer’s is used. (Keppler)
- In cases of women who have received large amounts of IV fluids in labor, it is important to be aware that the baby’s birth weight may be inflated by excessive fluid stores in the infant.
- The infant’s initial weight loss may be greater than 10% maximum due to surplus fluid loss.

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Excess Weight Loss in First-Born Breastfed Newborns

- Only 2 variables predicted excess weight loss
  - Delayed lactogenesis
    - aRR 3.35
  - Intrapartum fluid balance
    - Compared to < 100 mL/h:
      - 100-200 mL/h – aRR 2.8
      - > 200 mL/h – aRR 3.18
- Conclusions
  - Intrapartum fluid administration can cause fetal volume expansion and greater fluid loss after birth.


An Observational Study of Associations among Maternal Fluids during Parturition, Neonatal Output, and Breastfed Newborn Weight Loss

- The relationship between the intravenous fluids women receive during parturition (the act of giving birth, including time in labour or prior to a caesarean section) and their newborn’s weight loss during the first 72 hours postpartum was the primary interest.


Methods

- In this observational cohort study, data was collected about maternal oral and IV fluids during labour or before a caesarean section
- Participants (n = 109)
  - Weighed their newborns every 12 hours for the first three days - then daily to Day 14
  - Weighed neonatal output (voids and stools) for three days.


Results

- At 60 hours (nadir), mean newborn weight loss was 6.57% (SD 2.51; n = 96, range 1.83-13.06%).
- When groups, based on maternal IV fluids, were compared
  - ≤1200 mL [n = 21]: newborns lost 5.51%
  - >1200 mL [n = 53]: newborns lost 6.93% (p = 0.03)
- First 24 hours, bivariate analyses showed positive relationships between
  - Grams of weight lost and all maternal fluids (r(75) = 0.309, p = 0.007)

Conclusions

- Timing and amounts of maternal IV fluids appear correlated to neonatal output and newborn weight loss.
- Neonates appear to experience diuresis and correct their fluid status in the first 24 hours.
- We recommend a measurement at 24 hours, instead of birth weight, for baseline when assessing weight change.


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Promoting Exclusive Breastfeeding

- Lactation support - three critical determinants
  1. Establishment of a robust milk supply
  2. Effective latch-on and transfer of milk
  3. Supporting maternal confidence

- These are the three most common issues, accounting for the largest drop off in breastfeeding, which occurs within the first several postpartum weeks.

(tr, 2001; Taveras, 2003; Kual, 1999; Dewey, 2003)

Common Maternal Concerns

- I don’t (won’t) have enough milk.
- My baby doesn’t know how to breastfeed.
- My baby doesn’t want to breastfeed.
- I’m too tired to breastfeed.
- I’m going back to work so I want my baby to get used to the bottle.
- I want dad to feed the baby so they will bond.
- I’m afraid my baby will just use me for a pacifier.
- I don’t want to spoil my baby.
- My baby is crying so he must be hungry.

“I don’t (or won’t) have enough milk.”

- Suggested Conversation:
  Key: You have the perfect volume of milk for your baby’s stomach today.
  - Your baby’s stomach volume is very small.
  - It perfectly matches the amount of milk you have right now.
  - Baby needs small volumes to suck/swallow/breathe without choking.
  - And can also practice while your breasts are soft.
  - When your milk volume increases in a few days your baby will be really good at feeding and ready for larger volumes.
  - Avoid using the phrase “when your milk comes in.”
  - You can increase your milk volume faster by
    - Holding your baby skin to skin
    - Feeding your baby frequently (every 1-3 hours)
    - Hand expression of breastmilk

Hand Expression of Breastmilk

- Gently massage both breasts by hand.
- Place thumb and index fingers about an inch above and below the areola.
- On the first breast, pull the hand inward, towards the chest, (not outward toward the nipple) while you compress finger pads together.
- Repeat this action in a rhythmical pattern, and each time, bring the finger pads slightly closer together (a tighter compression, as tolerated without pain)
- After 10 - 20 compressions, switch to the other breast . . . then back to the first . . . then back to the second again, etc. Do this despite the presence or absence of colostrum.
- Collect the drops on a clean plastic teaspoon.
- Feed to the baby.

newborns.stanford.edu/breastfeeding
“My baby doesn’t know how to breastfeed.”

- **Suggested Conversation:**
  - All newborns are born knowing how to breastfeed.
  - Breastfeeding is one of their natural instincts.
  - But they need to be skin to skin with mother for their natural instincts to be activated.
  - Having clothes on and being wrapped in a blanket is confusing to many babies.
  - Within a few days they will be very good at breastfeeding with clothes on, but in the first day or so they need to have as much skin next to mother as possible to be able to breastfeed easily.

**Key**
- Too Little Skin to Skin
- Plenty of Skin to Skin

“My baby doesn’t want to breastfeed.”

- **Suggested Conversation:**
  - Most babies sleep a lot in the first day.
  - Your baby is recovering from the birth too.
  - Your baby is just trying to figure out the world.
  - The “baby steps” of learning will come more naturally if we keep your baby skin-to-skin with you and just practice breastfeeding.
  - In the mean time, we also need to 'phone in your order' for lots of milk, because s(he’ll) need it after 3 days.
  - You may need to pump or hand express your milk if baby is too sleepy.
  - We can feed it to baby in several different ways.
  - This is a learning time for both of you.
  - Put on your light if your baby starts moving around or wakes up. I’ll come in and help you.
  - You are doing a great job!

**Key**
- “I’m too tired to breastfeed.”

- **Suggested Conversation:**
  - I know it’s hard to get used to feeding a baby as often as he needs to eat, but it will get easier.
  - It may seem easier to bottle feed now but it’s really much easier to breastfeed once you get the hang of it.
  - Is there anyone who can help you with other things so you can sleep whenever your baby sleeps?
  - It’s a good idea to limit or eliminate all extra visitors for now so you can concentrate on feeding baby and sleeping.

**Key**
- “I’m going back to work so I want my baby to get used to the bottle.”

- **Suggested Conversation:**
  - Feeding from the breast and from the bottle require completely different mouth and sucking movements.
  - Your baby could be confused by trying to learn both at the same time.
  - Or your baby may learn to prefer the bottle because it’s easier to just swallow milk than suck it out.
  - Babies who learn to bottle feed first often don’t breastfeed well, but babies who learn to breastfeed first usually can go back and forth easily later on.
  - It’s will be worth it to focus just on breastfeeding during the first few weeks after birth. You can introduce a bottle later.
“I want dad to feed the baby so they will bond.”

- Suggested Conversation:
  - Dad and baby can bond during diaper changes.
  - Baths are good bonding times too.
  - Baby’s love being skin to skin with dads when they aren’t hungry.
  - It’s really important for dad’s and babies to form strong bonds.
  - There are many bonding opportunities other than feeding.

“I’m afraid my baby will just use me for a pacifier.”

- Food for Thought:
  - Why aren’t we concerned that babies will just use pacifiers as substitutes for mothers?

- Suggested Conversation:
  - Baby’s need almost constant closeness with their mothers and very frequent suckling.
  - It’s normal for your baby to want to breastfeed frequently to get small, frequent snack.
  - It’s also normal for your baby to want to be close to you most of the time.
  - If you meet your baby’s needs now, he will need you less as he gets older.

“I don’t want to spoil my baby.”

- Suggested Conversation:
  - It is not possible to spoil a new baby.
  - Baby’s learn trust in the 1st year of life only if their needs are promptly and consistently met.
  - Independence is learned during the 2nd year. Babies should not learn independence before trust.
  - Crying is one way a baby communicates a need.
  - Studies have shown that if a crying baby is picked up within 90 seconds, the crying usually stops.
  - Studies have also shown that babies cry less at 1 year of age if their crying has consistently been responded to promptly.
  - Don’t be afraid to meet your baby’s needs for touch and closeness.

“Don’t stand unmoving outside the door of a crying baby whose only desire is to touch you. Go to your baby. Go to your baby a million times.”

—Peggy O’Mara

“My baby is crying so he must be hungry.”

- Suggested Conversation:
  - Crying can mean so many things!
  - A crying infant may be trying to express hunger, discomfort, pain, overstimulation, boredom, wanting something, or loneliness.
  - Sometimes it takes a bit of detective work to try an figure out what your baby is trying to tell you.
  - Let’s see if we can figure out what is bothering him.

Understanding Infant Crying

- Infant crying is a basic instinctive communication
  - Designed to elicit an adult response.
  - Vital infant “super power” critical for survival
- Maternal concern is a basic instinctive response
  - Designed to meet needs of distressed infant
Outline

A. Benefits of exclusive breastfeeding during the first six months after birth
   • Immune protection
   • Optimal growth and development
   • Cost and convenience

B. Common challenges & evidence-based practices to support exclusive breastfeeding in the postpartum period
   • Hypoglycemia
   • Hyperbilirubinemia
   • Early weight loss
   • Maternal concerns
   • Breastfeeding Myths

“Great Expectations”

• Milk will “come in” on the day of birth
• Baby will latch perfectly every time
• Baby will cry briefly, feed easily, then be quiet and go to sleep
• Baby will eat 3 or 4 times a day
• Parenting will be easy

Misconceptions

• Myth: Formula is the solution to all problems
  • “I gave him a bottle and he stopped crying.”

• Truth: No one can cry and swallow at the same time
  • If forced to swallow, crying will stop
  • Even if hunger was not the reason for crying
  • Set up for feeding to solve all adult problems

Reality

We need to warn parents on day 1 about day 2

• Day 1 – brief crying, breastfeeds during quiet alert state, sleeps for long periods

• Day 2 – baby awake and crying
  • Something is wrong! Do something!

• Parents need to understand infant cues and sleep states
Understanding Infant Cues

Engagement cues
Disengagement cues
Hunger cues

Often simplistic, subtle, not specific
Often must be a detective to find out what baby wants

Resources to Teach Parents About Behavioral Cues

- Baby Cues – A Child’s First Language
  - Keys to Caregiving – NCAST www.ncast.org
- Understanding the Secret Language of a Newborn
- Help, Understanding, Guidance for Young Families
- Secrets of Baby Behaviors
  - lactation.ucdavis.edu/products/babybehaviorproducts.html

Use Baby as a Teaching Tool

- Use baby as teaching tool
  - “See how your baby is in active sleep. If you hold him until he is in a deep quiet sleep, he won’t wake up when you put him down.”
  - “See how deeply your baby is sleeping. She does not even startle when there is a noise. This is not a good time to try to feed her. Just wait until she cycles back into active sleep. Then invite her to wake up and feed.
  - “See how she is trying hard to tell you that she needs something to be different. Let’s see if we can figure out what it might be?”

If we miss the early feeding cues....

Understanding Infant Sleep

(A Useful Tool)

- Babies do not sleep exactly like adults
  - Sleep cycles 60 minutes vs. 90-120 minutes
- Active sleep = brain development
  - 20-30 min in term infant (tone, REM)
  - A good time to invite baby to feed
- Deep sleep = growth
  - 20-30 min in term infant (limp, no REM)
  - Not a good time to invite baby to feed

Understanding “Growth Spurts”

- Warn mothers about periods of frequent feedings
  - Perceived insufficient milk supply
  - Major reason mothers stop breastfeeding
- Provide explanation
  1) Normal
    - Nature’s way to increase milk supply for growing baby
    - Count number of wet diapers for reassurance – at least 6 per 24 h
  2) Predictable
    - First episode often occurs in 2nd or 3rd week
    - Recurs every 4-6 weeks
  3) Temporary
    - Frequent feeding only lasts 2-3 days
Breastfeeding in Public

Double Standard

Acceptable. Obscene?

Breastfeeding in Public

Even when practiced discreetly, naked eyepieces and disapposing dinks are still met with those who due to unilk-lead in public.

Breastfeeding in Public

Tips You Need to Hide Your Nips
Less of these
More of these
California Civil Code § 43-53.

1997 Section 43.3 of the Civil Code

Notwithstanding any other provision of law, a mother may breastfeed her child in any location, public or private, except the private home or residence of another, where the mother and the child are otherwise authorized to be present.

THANK YOU for nursing your baby.

Thank you for nursing your baby in public.

May future mothers never have to search for a secluded corner, dressing room, or rest room to nourish their babies.

Nursing in America is becoming the norm and the credit goes to women like you!

All Babies are Born to Breastfeed!

Thank you for empowering mothers to meet their breastfeeding goals.