Bumps on the Road to Successful Breastfeeding

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Disclosure

- Breast fed both babies and was a La Leche League member back in the day.
- No funding/external support related to this topic.

Objectives:

- What is normal?
- How do we define success in breastfeeding?
- Assessing the Mother- Infant Dyad.

Painful nipples = problem with latch

Continuing to support the breast after attaining a good latch is helpful in the newborn period.

There are 6-10 milk producing lobes in each breast.

Prolactin level remains elevated for the duration of breastfeeding.

Infant nursing increases oxytocin which results in milk ejection. (let down)

Pumping is less efficient than nursing.

Oxytocin release is not affected by mother's mood and comfort.

Milk supply transitions from endocrine to apocrine control after the first few days of nursing.

Size matters.

Capacity increases over the first month.

Each breast has the same milk producing capacity.

Successful Breastfeeding requires:

- Ample milk supply.
- A baby wanting/able to go to the breast.
- A baby able to transfer milk from the breast.
- A happy mother-infant dyad!

Hormones in Breastfeeding

Progesterone

- High during pregnancy.
- Suppresses milk production through inhibiting release of prolactin.
- Levels decrease 48-72 hours after birth, Prolactin ↑

Prolactin

- Stimulated by infant suckling.
- Milk production, mammary gland growth, epithelial cell proliferation
- High in first few weeks, by week 4 close to pre-pregnancy levels
- Prolactin receptors increase in 1st week with stimulation of touch receptors on the breast, so as levels decrease milk production is maintained.
- Milk accumulating in the breast leads to decrease in prolactin binding which leads to slowing of milk production.

Oxytocin

- Infant suckling stimulates oxytocin leading to letdown(milk ejection)
- Causes uterine contractions. State of calm, bonding.
- Binds to receptors on myoepithelial cells lining alveolar ducts- celss contract ahd expel stored milk from alveoli to larger ducts
- Milk ejection reflex is transient. ¾ to 3 ½ minutes. Occurs more than once during nursing/pumping.

Cortisol

- Response to stress, including pain.
- High levels delay production and secretion of milk.

Feedback Inhibitor of Lactation (FIL)

- Whey protein
- Reversibly blocks secretion by lactocytes. (autocrine control)
- Removal of milk from the breast prevents collection of FIL, so an empty breast produces milk faster than a full breast
- Helps prevent engorged breasts
- FIL controls milk production independently in each breast!

MILK

Colostrum

- 20-40 ml/day
- Antibodies, WBCs, minerals, protein, vitamins
- Low in carbs and fat, acts as a mild laxative.

Transitional milk

- By Day 3
- Lower in protein, immunoglobulins
- Higher in calories, fat and lactose
- Day 3/4 300-400 ml/day
- Day 5 500-800 ml/day- varies (maternal well being and stress)

Mature breast milk

- Day 10-14
- One type of milk, but fat sticks to walls of alveoli, so initial milk (foremilk) has higher lactose and less fat
- With milk ejection fattier hindmilk is squeezed out of the alveoli into the ducts.
- Composition and amount of milk depends on the volume of milk produced, how long the baby nurses on each breast and the amount of time between feeds.

- Milk supply must be established.
  - Breast's milk making capacity is related to glandular tissue present in the breast.
  - Milk making capacity increases over the first month.
- Then milk supply must be maintained.
  - Milk supply responds to frequency of nursing and degree of emptying.

Mother-Infant Dyad

- WEEK 1
  - Infant associates time at breast and satisfaction of needs
  - Mother develops more prolactin receptors in response to infant suckling.
- MONTH 1
  - Production shifts from endocrine to apocrine control.
- MAINTENANCE

Mother's concerns and consequences

- Milk quantity
- Breastfeeding pain
- Infant feeding difficulties at the breast
- Stop by Day 7- infant feeding difficulty
- Stop by day 14 – poor milk quantity

Latch

- Required to have successful breastfeeding.
- Must be corrected first and urgently!
- Nipple pain = problem with latch.

Skin to skin

- Helps with effective nursing and bonding.
- Behaviors:
  - Birth cry
  - Relaxation
  - Awakening and the eyes
  - Activity
  - Resting phase
  - Moving toward nipple, touching, licking and suckling at breast
  - Falling asleep.

Early hunger indicators

- Rooting
- Putting the hand to the mouth.

"Babies are born waterlogged"!

- 7-10 % loss of birth weight in first 3-7 days

Day 1 Large marble. 5-10 ml/feed- one wet diaper and one meconium passing

Day 3 Ping pong ball

By Day 5 stool colour yellow

Day 7 – 30-45 ml/feed 6-7 wet diapers and 4+ stools
10 minutes each breast every 2-3 hours

Week2-3 60-90 ml/feed 600-750 ml/day

Week 4 90-120 ml/feed 750-1050 ml/day

- From months 1-6 baby's intake stays the same but frequency of nursing decreases, with increase volume/feed.

Growth

- Growth Spurts at 2-3 weeks, 6 weeks, 3 months
- Weight changes:
  - Birth to Day 4: 7-10% loss of birth weight
  - Day 4-4 Months: 200-225 gm /week increase
  - 4-6 Months: 113-142 gm/week increase
  - 6-12 Months: 85-113 gm/week increase

Establish Milk Supply

- Early stimulation of touch receptors to establish prolactin receptors and oxytocin stimulation
  - Non painful baby latching
  - Hand expressing for at least the first week
- Milk removal to prevent buildup of FIL and allow binding of prolactin
  - Efficient
  - Quick bursts of 10 minutes on each breast, not prolonged feeds
  - Frequency of q 2-3 hours for first month
  - By baby if possible
  - By pumping if baby cannot transfer milk efficiently