Nuts & Bolts of Preterm Lactation

Speaker:
Elizabeth Jones MPhil, RN, RM
University Hospital of North Staffordshire
At the start of the journey

'The moment I walked into the neonatal unit, I was in complete shock. I could not comprehend where I was or what had happened and all my hopes and dreams were shattered. All I had wished for was a healthy strong baby whom I could care for'.

Ebrey J. Breastfeeding your premature baby. Bliss 2006
Spinning out of control

- Shock, rawness, numbness
- Fear
- Feelings of despair
- Unable to understand how as a parent you can help your baby
- Unable to understand your role. Feel like a passenger and ‘in the way’.

Ebrey J. The Journey through a Neonatal Unit. May 2005
Crisis Management

• Turns a victim into a valuable team member
• No longer a helpless bystander
• Gives a tangible claim
• Something only SHE can do
• Can regain control
• Helps in the recovery process
Potential Benefits to the Neonate

- Highly bioavailable
- Immunological protection
- Developmental outcome
- Promotes attachment behaviours
Oxytocin / Prolactin
Endorphins

- Intense bond
- Protective
- Sedative
- $\downarrow$ Cortisol
The provision of breast milk is a medical treatment – not a social choice

For a mother the decision is different
Stages

- Growth of glandular tissue (mammogenesis)
- Development of secretory cells (secretory differentiation)
- Transition from colostrum to copious supply (secretory activation)
Common experience

- Poor milk supply
- Dwindling volume
- Involution
- Inverse relationship between gestational age & secretory activation
Truncated mammary development

- Different milk composition
- May not be hormonally driven
- ↓ Markers for Lactogenesis II
  (lactose / citrate / sodium / total protein)
- Compromised lactation
- IUGR / Betamethasone
Preterm mammary physiology

- Mammary growth may be incomplete
- Poor placental function may exacerbate this problem
- Mammary epithelium may not be sufficiently prepared by the hormones of pregnancy to respond with efficient milk synthesis
- Lactation is inhibited by stress

(Hartmann PE, Ramsay DT, Mammary anatomy & physiology. IN: Feeding & Nutrition in the Preterm Infant)
Don’t delay until an infant is stable

- Will need expert support & encouragement through out the journey
- Avoid doing too little – too late
- Compensatory growth can be achieved
- It may be difficult initially & there may be a delay in establishing a supply
In the beginning

- Don’t set up to fail
- Start with hand expression
- Express early & often (*don’t drop night expression)
- The more preterm the more aggressive the regime
- DETERMINING FACTOR IS VOLUME AT 2 WKS
Initiation of lactation

- Early FREQUENT expression

- At least 8 - 10 times in 24 hours

- Stimulate production (750-1000 ml / day)

- Prepare for decline in production

- Breast asymmetry
Milk ejection reflex

- Triggering essential
- Average yield without is less than 4% of available milk
  (Mitoulas 2002, Kent 2003)
- Nasal oxytocin?

RCT

• To compare single / double pumping on milk volume and fat content
• To measure the effect of breast massage on milk volume and fat content
• To measure maternal perception
• Eg. Comfort, convenience etc.

Jones E et al. Arch Dis Child 2001; 85 (2): F91-F95
Results (RCT)

- Massage & double pumping increase milk volume (p<0.01)
- SIM capitalises on rapid transfer of milk following milk ejection
- Fat concentration is improved
- Time expenditure is significantly less – funnel fit was too small for most mothers
Sore nipples

- Match tunnel diameter to maternal nipple size and shape
- Centre nipple in shield
- Increase vacuum slowly until uncomfortable then back 10%
- Stop pump before removing shield
Lactogenesis 3

- Switch to autocrine (local) - within each breast - use it or lose it principle

- FULL = Slower production

- EMPTY = Faster production

- Reduce / increase frequency according to storage capacity  
  (Daly SEJ, Di Rosso A, Owens RA et al.)
**Insufficient milk**

- Frequency?  Duration?  Night?
- Started taking medication?
- Nicotine?  Equipment?  Funnel?
- ↑Skin to skin / SNS
- Cluster pumping
- Power pumping
- Compression during pumping
- Prolactin enhancers
Every drop counts

- Even drops of EBM protect
- Count the doses
- Remember no SIgA in formula
Too much milk

- Can always use fresh
- Can donate
- Reduce frequency
- Mid / hind
Creamatocrit

- Creamatocrit value %
- Fat g/100 ml
- % Calories from fat
- Kcal / 100 ml
- % Protein: Energy (EBM)
- % Protein: Energy EBM + BMF