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THEME

Mother and baby



Lisa Helen Amir

MBBS, MMed, PhD, is a NHMRC Health Professional Research Fellow, Mother & Child Health Research, La Trobe University, and a medical practitioner, Breastfeeding Education and Support Services, The Royal Women's Hospital, Melbourne, Victoria. l.amir@latrobe.edu.au

Breastfeeding

Managing 'supply' difficulties

BACKGROUND

Many breastfeeding women have concerns about their milk supply; 'not enough milk' is the most common reason women give for stopping breastfeeding, however their concern is often unwarranted.

OBJECTIVE

The article describes the process of history taking and examination of mother and infant to determine if the mother's milk supply is adequate, the causes of insufficient milk supply, and possible investigations and management.

DISCUSSION

Insufficient milk supply may be secondary to maternal conditions such as postpartum haemorrhage or breast reduction surgery, or infant factors such as tongue-tie or ill health. In many cases, milk supply can be increased by frequent, regular milk removal. Medication to increase milk supply (galactagogues) such as domperidone, may also play a role. General practitioners can provide reassurance if milk supply is adequate, or can assist in resolving the problem if milk supply is low.

Case study - Cindy

Cindy comes to see you with her 4 week old son, Oscar. You haven't seen her since the birth, so you ask how things are going. She is concerned about her milk supply as her mother's milk 'dried up' at about 4 weeks. Oscar is feeding at least every 3 hours, day and night, and her breasts aren't feeling as full as they were in the first couple of weeks. She had planned to breastfeed Oscar for at least 6 months, but she's not feeling confident about breastfeeding and her partner is keen to give Oscar a bottle of infant formula in the evening when the baby is unsettled.

Lactogenesis II, or the initiation of copious milk secretion, occurs following delivery of the placenta and the sudden drop in progesterone.¹ Although the hormone prolactin is important for the initiation of lactation, local or autocrine control takes over after a few days.² A peptide present in milk (feedback inhibitor of lactation) inhibits further milk production. It is the continual removal of breast milk and this peptide that stimulates the breasts to keep producing milk.^{1,2}

Correct attachment of the baby to the breast is vital to prevent nipple damage and to facilitate milk transfer.³ The mother holds the baby close to her body ('chest to chest'), as soon as the baby opens the mouth wide she brings the baby to the breast so that the baby's chin touches the breast. A slow rhythmical suck and rounded cheeks indicate that the baby is feeding well.

Newborn babies need to feed more frequently than every 4 hours – perhaps as often as 10–12 feeds per day.⁴ The composition of human milk is similar to the milk of chimpanzees who feed continuously – unlike the fur seal which feeds only once a week and whose milk composition is 53% fat.⁴ The relatively low fat content of human milk (1.2%) gives it a 'thin' (watery or bluish) appearance in comparison to cow's milk, however, the nutritional quality of human milk is rarely problematic.⁵

A healthy infant will lose less than 10% of their birth weight, will regain birth weight by 2 weeks of age, and will gain at least 150 g per week.⁵ In April 2006, the World Health Organisation launched new growth charts for optimum conditions for child growth; previous charts included children fed infant formula (some of whom may be overfed), so current charts only relate to data from healthy breastfed babies.⁶

Case study – scenario 1

Cindy's baby was weighed by the maternal and child health nurse yesterday and he has gained 800 g since birth. You confirm with Cindy that Oscar has only been receiving breast milk. As he has gained 200 g per week and been exclusively breastfed, you can reassure Cindy that she is producing a good supply of milk.

The perception of low milk supply is often based on a lack of confidence with breastfeeding or understanding of the normal physiology of lactation.^{5,7} Many infants are unsettled in the early months, but this behaviour ('colic' or 'cry-fuss') is usually transient.⁸ Table 1 lists the reliable signs of low milk supply and common misconceptions. After the first few weeks, the breasts may not be as full as they were initially as they have adjusted to the baby's needs; if the baby is gaining weight the mother can be reassured about her milk supply. Older babies become more efficient and so feeds generally become faster with time.

Although women will occasionally say that their 'milk dried up' it is more likely that their supply reduced gradually. Family support for breastfeeding is vital; women who were breastfed themselves will be more likely to be successful at breastfeeding than women who were not breastfed. Partners can be encouraged to contribute to caring for the baby in ways that don't involve feeding.

Case study – scenario 2

Cindy's baby was weighed by the maternal and child health nurse yesterday and he has gained only 200 g since birth. You explain to Cindy that babies are expected to gain at least 150 g per week and that the breastfeeding situation needs to be assessed in more detail.

Assessment of low supply

Table 2 outlines factors that may affect milk supply: from maternal health to infant factors. There are a number of questions to ask about the mother's general health:

- Any medical conditions or breast surgery?
- Does she smoke? (Smoking over 15 cigarettes daily may reduce milk supply⁹)
- Any endocrinological issues such as hypothyroidism or polycystic ovarian syndrome (PCOS)? Although some women with PCOS have no problems breastfeeding, there appears to be a group of women with PCOS with insufficient glandular tissue to produce an adequate milk supply.¹⁰

Table 1 Low milk supply: real or perceived?

Reliable signs of low supply	Common misconceptions of low supply
Weight gain less than 500 g/month; <150g/week	Breasts feel softer
Baby weighs less than birth weight at 2 weeks	Baby feeds more often;
Passing small amounts of concentrated, yellow, strong smelling urine, <6/day	Baby takes less time to feed
Infrequent small amounts of hard, dry, green stools	Baby is unsettled
Lethargic, sleepy, weak cry	Baby settles better on infant formula
Dry skin and mucous membranes, poor muscle tone	Growth slows after 3 months

Adapted from: check Program Feb/Mar 1999 – Breastfeeding

Table 2 Factors affecting milk supply

Maternal health	Anaemia, postpartum haemorrhage, smoking (moderate/heavy)
Mammogenesis	Insufficient breast tissue, breast surgery (reduction)
Lactogenesis	Retained placenta, delayed breastfeeding
Galactopoiesis	Inadequate breast drainage, infant tongue-tie
Milk intake	Restriction of frequency or duration of feeds
Infant factors	Infant medical problems (eg. congenital heart disease, urinary tract infection)

Most women will experience breast growth during pregnancy (or rarely this occurs in the postpartum period only). The general practitioner can ask the mother if she noticed breast changes in the pregnancy or after the birth – no changes may be an indication of insufficient glandular tissue.¹¹

If remnants of placenta are retained, lactogenesis II may be delayed. Therefore, questions need to be asked about the birth and the completeness of the placenta. Did she lose a lot of blood after the birth? Anaemic women are less likely to continue breastfeeding than other women.¹² Postpartum haemorrhage may produce a transient hypotensive insult and temporary pituitary ischaemia which inhibits the hormonal triggering of lactogenesis II by prolactin.¹³

Next, information is collected about the baby's birth weight, condition and loss of weight in the first few days. Finally, more detail about the breastfeeding pattern is ascertained:

- how many feeds in 24 hours
- how long is each feed
- does the mother offer one breast or two?

During the consultation, the GP will have noticed the mother's general appearance and mood. New mothers may

be reluctant to disclose feelings of anxiety or depression. Studies have shown that obese women are less likely to be successful at breastfeeding, but at this stage it is not clear if this is physiological or behavioural.¹⁴

The examination then focuses on the mother's breasts. Indicators of possible insufficient glandular tissue are: 'tubular' breast shape (*Figure 1*), noticeable breast asymmetry, stretch marks, and wide intramammary distance (>4 cm).¹¹ Evidence suggests that this problem occurs in about one in 1000 women.⁵

Parents appreciate a careful examination of the baby. Ideally, the infant is examined before a feed, on an examination table with a good light. Assessment includes the infant's general health, hydration and looking for possible muscle wasting (examine the gluteal region). Check the infant's mouth for congenital conditions that may not have been noticed in hospital: tongue-tie, cleft of the soft palate, or sub-mucous cleft palate. Exclude congenital heart disease by listening to the baby's heart and checking pulses.

If time permits, observation of a breastfeed will provide more information. Improving attachment to the breast may allow the infant to feed more effectively. Alternatively the infant may be sucking poorly at the breast and may



Figure 1. Insufficient glandular tissue ('tubular' breasts). Photo used with permission Wilson-Gay B, Hoover K. The breastfeeding atlas. Austin, Texas: LactNews Press, 1999.

Table 3. Practical suggestions to increase milk supply

- Improve positioning and attachment
- Increase number of feeds (if appropriate)
- Increase duration of feeds (if appropriate)
- Offer both breasts at each feed (babies may be satisfied with one breast in the early weeks, but may need both as they grow)
- Express after feeds: some mothers are efficient at hand expression, others prefer an electric breast pump (the double collection system is recommended¹⁷); offer the milk after the next feed
- Supplemental feeding line instead of bottle¹⁸
- General advice to mother to look after herself: adequate protein in diet (some new mothers live on toast!) and have a rest during the day; drink according to thirst – there is no need to push fluids and no need to drink milk to make milk

need supplemental feeding (with expressed breast milk if available, or with infant formula) to ensure adequate intake until the mother's supply can be improved.

Investigation of low supply

When indicated, the woman's haemoglobin level or thyroid function should be checked. Uterine ultrasound can assess retained products of conception if this is suspected. Maternal testosterone is raised in the presence of gestational ovarian theca lutein cysts, a rare cause of delayed lactogenesis.¹⁶ Urinary tract infection may be asymptomatic in infants, apart from failure to thrive, so a urine test may be worthwhile for the infant.⁵ If the baby appears unwell, further investigations may be required.

Management

Medical problems such as anaemia or hypothyroidism need to be addressed. There are also a number of practical suggestions to increase milk supply (*Table 3*).

In addition to improving removal of milk from the breast, medication can be used to increase milk supply (galactogogues).¹⁹ Although metoclopramide has been used in the past, domperidone is preferred as it does not cross the blood-brain barrier, less is excreted in breast milk (relative infant dose is 0.042%),²⁰ and has less risk of side effects than metoclopramide. The usual dosage of domperidone is two 10 mg tablets three times per day.²¹

Many mothers with breastfeeding difficulties will benefit from the advice of a lactation consultant or breastfeeding counsellor with the Australian Breastfeeding Association (see *Resources*).

Summary of important points

- Concern about adequate milk supply is common among new mothers.
- Assessment of the infant, including weight gains, will determine if milk supply is adequate.
- Frequent, regular milk removal is the primary way of increasing milk supply, but maternal medication may be useful.

Resources

- Australian Lactation Consultants Association. Available at www.alca.asn.au/
- Australian Breastfeeding Association. Available at www.breastfeeding.asn.au/

Conflict of interest: none declared.

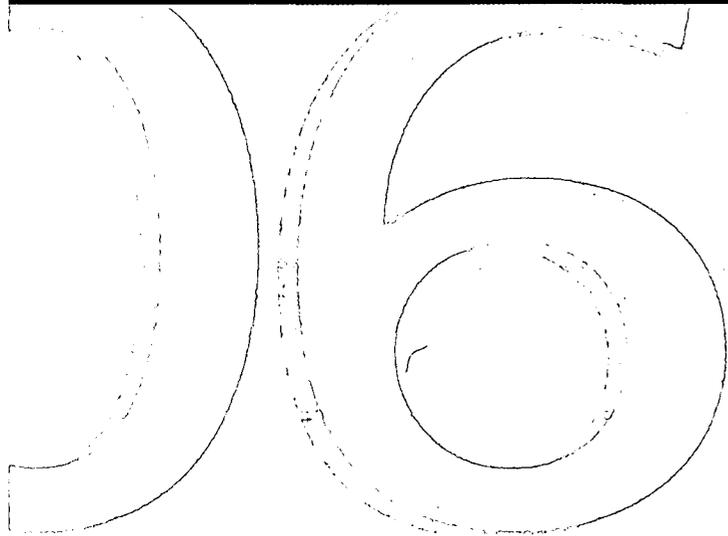
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