The Crying Infant

All infants cry - it is one of the few ways available for the young infant to communicate with the environment. It is not abnormal for infants to cry. Some parents perceive the intensity, duration or amount of crying as abnormal, and seek professional help.

Why do infants cry?

Crying is a means of infant expression and communication, and is an essential part of infant/parent interaction. It is not simply an audiologic signal, but part of a more complicated vocal-motoric-communicative activity.

In the younger infant, crying is probably an undifferentiated reflection of the physiological state, and occurs in response to discomfort, stress, and imbalance of the autonomic nervous system (expressive crying). There is clearly a biologic component to crying and fussing which reflects intrinsic characteristics within the infant, and is linked to a decreased sensory threshold, a difficult temperament, and sleep disturbances.

In the older infant, crying becomes linked to the maternal response and is more intentional (communicative crying).

What is "normal crying"?

Several studies of "normal" infants and their crying pattern published 30 years apart have found remarkably consistent results:

1. The total time per day that infants cry rises steadily from birth and reaches a peak at about six weeks of age. At this time the average infant cries for a total of almost 3 hours in each 24 hour period (mean 2.75 hours), with a range of one and three quarters to three and a half hours.

2. Most crying and fussing takes place in the late afternoon and evening, with a peak between 1800 and 2100
hours. In the older infant, (over three months) as the crying becomes more communicative in nature, there is still a predominance in the evening, but crying is also likely to be spread out throughout the day.

3. There is considerable variability between infants in the amount of crying they do, and also variability within an infant from day to day.

4. Crying and fussing decrease after three months because of the maturing nervous system of the infant (there is increasing regularity and rhythmicity in state regulation), and because it becomes more intentional and tied to maternal responses.

5. There is cross cultural variation in crying patterns; in some societies extended crying bouts rarely occur because the infant is part of a close and responsive family and social group, and crying is quickly attended to within seconds.

Diamond Management

1. Take the problem seriously - parents invariably do and so should health professionals. Avoid statements such as "It's only colic", which do not help the parents in dealing with the problem.

2. There are a number of strategies which will be well known to all nurses: examine the baby physically to rule out organic conditions (which are uncommon) - this also is reassuring for parents; ensure appropriate and adequate feeding; assess the infant's neurological state and temperament; identify parental characteristics which may exacerbate their lack of confidence - anxiety, stresses, lack of supports, etc.

3. Maternal and child health and community nurses are ideally placed to support the mother - to make sure she tries to have sufficient rest and time for herself; to diminish expectations of her having to be a "perfect mother"; to assist the mother in developing an individual routine or a series of strategies to soothe her crying infant.

4. Suggested intervention strategies might include: use of a dummy; movement, rocking, carrying, drive in car etc.; frequent carrying; music; baby massage and mother-baby "meditation"; softening lights - some babies cry because they are over-stimulated

5. Parents should be reassured they will not spoil the baby by responding readily to his/her crying or by cuddling.

6. The nurse will generally be able to work with the mother and father to develop an individualized plan depending on her assessment of the temperament and needs of the infant and on the characteristics and needs of the parents.

7. Diet: Discourage the mother from frequent changes of milk (if the baby is being bottle-fed) or drastic changes in her own diet (if the baby is being breast-fed). Diet is vastly over rated as a cause of infant crying and fussing.

8. Drugs: Medications have a very limited role in treating crying and fussing. If they are used they should be used for a brief period of time and never as the sole therapeutic intervention.

SUMMARY

Infant crying and fussing is a normal developmental phenomenon, which in most cases is self limiting. It does not represent any pathology in the infant, nor necessarily in the infant-mother transaction. The maternal and child health or community nurse has a pivotal role in supporting the mother and family through what is often a stressful time.

Dr Frank Oberklaid

INFANT NUTRITION: NO COW'S MILK FEEDING IN FIRST YEAR

It is now widespread policy to defer the change from breastfeeding or infant formula to cow's milk (full cream) until the infant is twelve (12) months old. Breastfeeding should be encouraged especially during the first
6 months but can continue into the second year. Human milk is a living fluid whose composition changes to meet the needs of the growing infant. It is species specific, providing not only nutrition but protection, and a means of warmth and bonding between mother and infant. All babies under 12 months who are weaned from the breast and those who have never been breastfed should have an iron fortified infant formula as their primary source of milk (1 & 2).

♦ What are the reasons for this policy?

Parents may feel their baby is old enough to go straight onto cow’s milk, so an adequate explanation is necessary as to why breastfeeding or infant formula should continue.

a) Comparison of breastmilk and cow’s milk

Protein - cow’s milk is over rich in protein for the infant’s immature kidneys and liver enzymes to adequately metabolize. In conjunction with the increased solute load from cow’s milk, dehydration can result especially if insufficient water is given or there are increased losses due to diarrhoea, temperatures, or pyrexia.

The amino acid profile of cow’s milk is different. Simple dilution of cow’s milk does not correct these differences, though the use of added whey to correct the casein:whey ratio improves the amino acid profile.

Fats - fat is an important source of energy, essential fatty acids, and fat soluble vitamins. Human milk provides more than 50% of energy from fat and is rich in essential fatty acids to meet the rapid growth needs of infancy. Cow’s milk fat is poorly absorbed by the young infant and is low in essential fatty acids.

Calcium:phosphorus ratio - this ratio is important in maximizing utilisation of these for bone mineralisation. The ratio is quite different in cow’s milk and the ratio in soya formulae is less optimal even than that in cow’s milk based infant formulae.

Minerals - the bioavailability of minerals is an important consideration in maximising absorption of minerals such as zinc and iron. Human milk has the highest bioavailability, with cow’s milk based formulae second best and the soya formulae, all of which contain phytate, have the lowest mineral availability.

b) Iron

Adequate iron intake is essential, particularly as a low iron status has been associated with developmental difficulties and gross deficiency with anaemia. Approximately 50% of the iron in human milk is absorbed compared to only 10% from cow’s milk, formulae and food (2). Continued breastfeeding and use of an iron fortified formula throughout the first year ensures an adequate iron intake during this period of rapid growth. After the first year a diet with a variety of foods including iron rich sources particularly haem iron from meats will ensure an adequate iron intake to meet the needs of the young child (2).

c) Growth

Data from Hitchcock & Coy 1989 (3) illustrates the difference in weight gain during the first year in infants fed artificially compared to those who were breastfed for 12 months. The bottle fed infants were significantly heavier by 1 year old. This may have implications for long term overnutrition and obesity.

♦ Infant Formulae

Cow’s milk is the usual basis of infant formulae but it requires a number of modifications which are not possible by simple dilution and supplementation.

Soya, like cow’s milk, requires a great deal of modification to make a nutritionally adequate product for the growth needs of infants. Soya formulae are NOT recommended except when cow’s milk protein intolerance has been medically diagnosed. Many infants who are allergic to cow’s milk are also allergic to soya and goat’s milk.

Breastfeeding protects the infant to some extent from allergy, but despite popular belief there is no evidence that soya formulae provides such protection.

Changing the type of formula because of irritability and infant distress is illogical and should be resisted and a diagnosis sought.

An age appropriate iron fortified infant formula should be selected (see Table) for all bottle feeds. There is no need to change to a ‘Follow-on-formula’ but these can be used after 6 months. It is NOT harmful to change from brand to brand within the same formula group, and this may have cost advantages.

References
(2) Allen J. Iron in the infant’s diet. Heinzsight 1992 April No. 35.
Table 1. FORMULAE*

<table>
<thead>
<tr>
<th>Cows Milk Formulae</th>
<th>Soya formulae</th>
<th>Follow on formulae</th>
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<tbody>
<tr>
<td>A. Added Whey</td>
<td>B. Without Added Whey</td>
<td>From birth</td>
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<tr>
<td>From birth</td>
<td></td>
<td>Prosobee</td>
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<tr>
<td>Nan1</td>
<td>SMA</td>
<td>Isomil</td>
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<td>Enfamilac</td>
<td>Lactogen</td>
<td>Infasoy</td>
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<td>S26</td>
<td>Similac</td>
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<tr>
<td>Karitane Infant</td>
<td>Enfamil</td>
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- Iron fortified formulae are recommended for bottle fed infants
- Feeds within each group are interchangeable

Dorothy Francis

From the Literature

Childhood Poisoning - A Changing Profile with Scope for Prevention

When a study of childhood poisoning was last done at The Children’s Hospital (Sydney) in 1956 the main agents were kerosene, pesticides, aspirin and digoxin. In this recent survey of 407 poisonings over a period of 6 years, the pattern has changed. Benzodiazepines, iron preparations, paracetamol and anticonvulsants were the main culprits. Four deaths, however, were attributed to quinine, caustic soda, ferrous sulphate and an arsenic-based weed killer.

Two-thirds of the children had ingested medications, but of those admitted to intensive care, iron was the most common cause. This has important implications for the packaging and storage of medications in the home. The authors surveyed the knowledge of pharmacists and general practitioners about the toxicity of various products which indicated lack of awareness about many of the medications being prescribed and dispensed. It is essential that precautionary guidance be given by both professional groups to their patients.

Comment

Maternal and child health nurses can assist in preventing poisoning of young children by alerting parents to the potential dangers of such common substances as iron preparations which are purchased over the counter at pharmacies without warning labels. Three iron tablets can kill a child, yet most people are unaware of their toxicity. Paracetamol is a powerful analgesic and should not be given “just in case”. The dosages recommended on the bottle should be adhered to. The main way to prevent poisoning is to store household chemicals in locked cupboards and medications in poison cabinets with child-resistant closures. Purchase cleaning products with child-resistant caps. (JMS)

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