Infant colic

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Abstract

It is very important for any professional nurse (PN) to be able discern between normal and abnormal, sick and healthy, critically ill and chronically ill. In general, to be able to differentiate the PN must have basic knowledge about the condition, add clinical experience and the result is (hopefully) good clinical judgement. To manage infant colic requires good clinical judgement and this article will assist the PN to assess patients better in order to gain more and better clinical experience. It will further also enable the PN to reassure parents, give good and sound advice and refer cases when necessary

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1. Introduction

Colic is a puzzling and exasperating syndrome and has been associated with parental distress and anxiety and can transform any peaceful home into chaos and strain family tempers to its limits. It has also been identified as a trigger for child abuse (i.e. "shaken baby syndrome") in high-risk situations. Although colic isn't dangerous in itself it is surely frightening to most parents who need reassurance and support.

2. Definition

Colic is defined as a symptom complex of early infancy characterised by bouts of crying, apparent abdominal pain, and irritability. It is also referred to as infant irritability of unknown cause and affects 15-35% of infants in the first year of life. It is estimated that approximately 20% of all infants have excessive crying for which the parents seek medical attention.

3. Age and duration

Crying in normal infants reaches a peak around 6 weeks of age and declines until about 4 months of age. There is, apparently, more crying in the evening especially from 6pm to midnight in normal and colicky babies. In studies no difference has been shown between colicky and normal infants in nighttime crying. **Colicky infants** are noted for their excessive crying by 2 weeks of age, with gradual resolution usually by 3 months. The time of crying being at the evening is therefore relatively normal if compared to normal infant crying.

4. Risk factors and causes.

Colic has been ascribed to several causes such as immaturity of the gastrointestinal tract, inability of the central nervous system to handle the stimulus of the environment, allergies, hypersensitivity, parent-infant interaction mismatches, cultural expectations and normal variations in behaviour. No specific cause has been proven as an universal factor. It has been found that infants do cry longer in Western cultures, but at the same frequency as in other cultures. Furthermore, no association could be found between colic and the following factors: maternal age or number of pregnancies a women had, pregnancy history, infant sex, infant weight, feeding habits, allergies, weight gain, or whether the infant had diarrhoea or vomiting.

5. Diagnosis

A. Crying patterns and characteristics Several studies attempted in defining the quantity and quality of a colicky cry. The conclusion was that the nature of crying doesn't allow parents or clinicians to distinguish an aroused or distressed infant from a colicky infant. The diagnosis is thus, not only made by only identifying the nature of the cry but

the whole clinical picture should be borne in mind.

The following gives more clarity on other features of the "colicky cry".

- Wessel's rule of 3: is a common definition used in both research and clinical descriptions of colic this is: *"excessive crying for 3 hours per day, 3 days per week, for 3 weeks."*
- Crying is, like for normal crying babies, also more frequent in early evening hours until midnight.
- In studies, using the Wessel's rule of 3, colicky infants cried for 241 to 300 minutes per day, whereas normal infants cried for 103 to 112 minutes per day.
- In another study it was determined that Wessel's rule of 3, had a sensitivity of 77% and the specificity was 87%. This means that if this rule is applied, 77% of those who do in fact have colic, all 3 symptoms were present (sensitivity) and if they didn't have all 3 symptoms present 86% of patient did in fact not have colic (specificity).

The rule of 3's can thus be of tremendous help in diagnosing colic more accurately.

B. Motor manifestations

Illingworth described colic in the early 1950's as an infant "... who develops violent screaming attacks in the evening...his face flushes, his brows furrows and then he draws his legs up, clenches his fists, and emits piercing, high-pitched screams... Each attack lasts five minutes or more...The attacks occur at regular intervals."

This was later confirmed in a study related to the symptoms of colic. Mothers and nurses reported the following motor and crying colic symptoms; infants passing flatus during attacks, clenched fists, drawing up legs, crying in the late afternoon and evening, holding the body straight, and wanting to be held as symptoms of colic

C. Other symptoms and signs

- Typically the colicky infant eats and gains weight well. He/she may seem excessively hungry and often sucks vigorously on almost anything available. It is important to weigh the baby to ascertain if the baby is feeding well. A hungry infant may cry incessantly but will show inadequate weight gain if poorly fed or malnourished.
- Air swallowing is common during excessive crying and usually results in flatulence and abdominal distention and may be an early manifestation of an insistent, impatient personality. Patients may also regurgitate after feeds due to air swallowing after feeds.

6. Making sure it is only colic.

Reassuring the distressed and overwrought parents that the symptoms are due to colic can only be done by exclusion. It is always important to take a proper history. Therefore, if the parents are distressed, the pharmacist should be consulted for further management. The infant's crying behaviour should be documented, including time of day, duration and how often the baby is well.

Furthermore the feeding habits and patterns should also be documented: How often and how long after feeds does the baby spit? Is the infant regurgitating and how frequent?

The following 5 features/clinical pictures may indicate that a possible underlying cause is present and warrant further medical attention.

I. Fever

If the baby has fever the source of infection should be identified. Do a thorough ear, nose and throat examination, urine-analysis, check all the joints for possible septic arthritis and check the skin for sites of infection. These babies should be referred.

II. Respiratory problems

Any infant with respiratory distress (tachypnoea, grunting, intercostal recession, cyanosis) should be referred. Check for tachypnoea (fast breathing) and any difficulty in breathing especially after feeds. A history of cyanosis ("the baby turned blue") or apnoea ("the baby stopped breathing") is also important. These babies should always be referred.

III. Neurological disease

Any abnormal neurological picture. Symptoms and signs of meningitis (fever, lethargy, neck stiffness, vomiting regardless of feeds, high-pitched cry and inconsolability.) Abnormal pupil sizes and reaction to light or a bulging fontanel. A history of loss of consciousness, vomiting, seizures or lethargy should prompt evaluation for any brain injury and should best be referred as soon as possible.

IV. Gastro-oesophageal reflux disease (GORD)

GORD is increasingly diagnosed in infants and it is very important to distinguish between normal reflux and the actual disease. **GOR** (gastrooesophageal reflux) is one of the most common gastrointestinal problems in infants and affect about 50% of healthy, full-term newborns. Post-prandial regurgitation is the most common sign of GOR and may range from effortless spitting to forceful vomiting. For 85% of infants with uncomplicated GOR, the condition is self-limited and usually disappears between the ages 6 and 12 months. This is also the time when solid feeds are successfully introduced and the infant spends more time in the upright position, especially after meals.

There is little evidence to support the relation between acid reflux and colic and a review of pH probe studies found no correlation between irritability and episodes of reflux.

However, crying infants do swallow air and this may increase the frequency of transient lower oesophageal sphincter relaxation (TLOSR) with subsequent reflux. It may therefore also be helpful to reduce swallowing air during feeds by thickening feeds and ensuring the hole in the bottle's teat is the correct size. A new innovation in infant feeding bottles, is the Dr Brown's bottle with a special valve that will reduce air swallowing. There seems to be no difference in the incidence of colic among breastfed and bottle-fed infants.

Overfeeding colicky infants in an effort to pacify them may also increase reflux episodes.

GORD can be associated with episodes of apnoea, bradycardia and respiratory difficulties. Abnormal posturing with tilting of the head to one side has also been associated with reflux. Normal infants have a high prevalence of reflux symptoms such as daily regurgitation, arching of the back, crying for more than 1 hour per day and hiccups. However, patients with GORD are more likely to have more than 5 episodes of regurgitation per day, to regurgitate more than 28 g per episode, to refuse feeding and to have episodes of apnoea (cessation of breathing for short periods of time.) It has also been reported that GORD-babies may have problems with weight gain. No studies up to date have been done to compare normal infants, colicky infants and GORD infants.

V. Vomiting

Vomiting should be differentiated from regurgitation and vigorous feeding by parents should be excluded. **Projectile, non-bilious (containing greenish bile) vomiting** with a noticeable abdominal mass may suggest a stomach outlet stenosis. **Bilious vomiting** is abnormal and need to be investigated further for malrotations of the small intestine or for congenital webs in the intestine.

7. Management

Once the diagnosis of colic is made, therapeutic options include dietary changes, drug treatments and behavioural interventions. A healthy dose of reassurance and support is necessary for the caregivers. Parents should be assured that the colicky infant is basically healthy, that this behaviour will cease in a few weeks and that too much crying is not harmful.

A. General advice to parents.

- Maintain breast feeding on demand. Breast milk doesn't cause colic. If the baby seems worse after certain foods are eaten by the mother - then it may be wise to exclude them. It is not necessary for the mother to change her diet otherwise.
- If the baby is bottle fed, check that the formula is made up correctly. Stop the baby once or twice during the feed to burp them.
- If an infant with a strong urge to suck fusses soon after a feeding he/she may need to suck more. If a bottle feeding takes <20 minutes, new teats with smaller holes should be tried.
- Introducing solids will not improve colic and may cause other health problems in the infant. Babies under the age of 4 months do not require solid foods.
- Buy or borrow a carrying device such as a front pack or sling in which to carry the baby. This will allow the parent to get on with certain activities.
- To reassure the baby, hold or carry them as much as you can. Play soothing music and keep the lights dimmed. Explain to any other children in the house that the baby has a sore tummy and needs to have some quiet time. Handle the baby smoothly and speak quietly. A warm bath during this time may help.
- Ask for, and accept all offers of help – caring for the baby with colic is not a one-person job.
- If the baby is likely to require your undivided attention for several hours in the evening, plan to keep those hours free for the baby. At the time it may seem that it will never end, but feel confident in the knowledge that it will pass. Be creative, the family can eat, have tea and baths at 3pm for a few months.
- Often a drive around the block does the trick or other rhythmic activities, swaddling or wrapping the baby securely. Don't worry about spoiling your baby.

B. Drug therapy

Numerous remedies and "grandmothers' mixes" usually roam around. Most parents have already tried almost everything and have listened to all the advice from all around. There are some preparations registered to relief colic. It is important to exclude other more serious underlying causes for the crying as discussed above and to warn parents not to overdose patients with colic remedies.

The following products are available.

- *Hyoscine-N-butylbromide (Buscopan® 0,1%)*
- *Dimethicone (Telament®)*
- *Aluminium oxide, magnesium oxide and methylpolysiloxane (Pedimed®)*
- *Hyoscine butylbromide (Scopex®)*
- *Anaesthetic ether, etanol (Hoffmans drops®)*
- *Sodium bicarbonate, dill seed oil, terpeneless, alcohol, nipasept sodium (Woodward's celebrated Gripe water.)*

8. Conclusion

Colic parents are usually desperately looking for advice to end their baby's pain and discomfort. If underlying conditions are ruled out by history and careful examination, parents can be reassured that their baby isn't in danger, that the colic will cease in time to come and that colic is not due to poor parenting.