Infantile Colic

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Crying

- ✓ Normal patterns of crying: All Infants, whether or not have colic, cry more during the first three months of life than at any other time.
- ✓ crying is a normal part of neurobehavioral development.
- ✓ The average duration of crying during the first three months of life ranges from 68 to 133 minutes per day.

Colic

Definition :

- ✓ Colic is a spasmodic contractions of smooth muscle causing pain and discomfort.
- ✓ It can be experienced in many organs, such as the gastrointestinal or genitourinary tract, and at all ages.
- ✓ The term colic is used in reference to infant.
- ✓ There is no standard definition for the term colic.
- ✓ When an otherwise healthy infant is crying for an excessive long time.

- **The Wessel criteria specify that episode of crying must last for:**

  >3 hours per day

  on >3 days a week

  for >3 weeks

- **The Rome 4 criteria:**

Which classify infant colic as a functional gastrointestinal disorder in Infants from birth to 5 months of age, require all of the following:

1- age <5 months when the symptoms start and stop.

2 - Recurrent and prolonged periods of crying, fussing, or irritability that start and stop without obvious cause and can not be prevented or resolved by caregivers.

Epidemiology:

- ✓ Prevalence of colic in Infants range from 8 to 40 percent .
- ✓ The incidence of colic does not appear to differ among male and female.
- ✓ Breast and formula fed .
- ✓ Full term and Preterm Infants.
- ✓ First born and subsequent born children.
- ✓ It appear to be more comm on in industrialized countries and white Infants.

Proposed Etiologies:

The cause of colic is not known

.Gastrointestinal ,biologic ,and psychological etiologies have been proposed

Gastrointestinal factors

✓ **Fault feeding techniques :**

1. Overfeeding , under feeding , and swallowing air.
2. Cow 's milk protein intolerance: A subgroup of infants with colic may have symptoms that caused by cow's milk protein

✓ **Lactose intolerance**

✓ **Gastrointestinal immaturity:**

It is uncertain whether colic is related to gastrointestinal immaturity and incomplete absorption of carbohydrate in the small intestine, and unabsorbed carbohydrates by colonic bacteria produces excessive gas.

Gastrointestinal factors

✓ **Intestinal hypermotility**:

due to autonomic imbalance in observational studies motilin concentration are increased in Infants with colic

✓ **Alteration in fecal microflora**:

Some studies have found differences in fecal microflora between babies with excess crying and controls.

Results include fewer bifidobacterial and more coliform bacteria such as Escherichia coli.

✓ **Increased fetal calprotectin also observed in colicky Infants**.

Other proposed etiologies:

- **Maternal smoking**

  during pregnancy or post postpartum period.

- **Immature motor regulation** :

  which may result in increased vulnerability to feeding intolerance.

- **increased serotonin** :

  Infantile colic maybe is related to increased serotonin.

Other proposed etiologies:

- ✓ **Early form of migraine** :

  Infantile colic maybe an early manifestation of childhood migraine

- ✓ **Psychosocial :**

  Colic is a Psychosocial phenomenon.

  The caretaker 's perception and response to crying episodes that define whether the crying is seen as a problem

Clinical features

Evaluation:

1. History taking
2. Examination and assessment

History taking :

- ✓ When does the crying occur?
- ✓ Colic crying occur during the evening.
- ✓ How does the crying last?
- ✓ What does the crying sound like to you?
- ✓ Parents usually can differentiate types of crying (hunger , pain,…)
- ✓ How do you feed the baby?
- ✓ Underfeeding, overfeeding, inappropriate feeding

Examination and assessment:

- ✓ Hydration and subcutaneous fat.
- ✓ Tongue-tie (may be associated with breastfeeding problem)
- ✓ Eye Examination for (foreign body, corneal aberration, infantile glaucoma).
- ✓ Ear examination for otitis media.
- ✓ Cardiovascular evaluations for supraventricular tachycardia.
- ✓ Evaluation of abdomen for tenderness, absence of bowel sound's.
- ✓ Evaluation of perineum for diaper rash, testicular torsion , hair tourniquet, rectal ulcer , anal fissure, inguinal hernia.
- ✓ Evaluation of the skin and musculoskeletal system for signs of trauma.
- ✓ Bacterial arthritis , osteomyelitis.
- ✓ Evaluation of the nervous system for abnormalities (bulging anterior fontanelle, asymmetry , increased or decreased tone) that may indicate meningitis or other Neurologic condition.

Potential Sequala:

- ✓ Observational studies suggest that infantile colic is associated with:
- ✓ Physical abuse
- ✓ Increased risk of postpartum depression
- ✓ Early cessation of breastfeeding

Management:

The cause of colic is not known, and no medical intervention has been consistently effective.

- ✓ Caregiver support is the mainstay of the management of colic. It may influence the way the caregiver view their ability to care for their child.
- ✓ Education that colic is not caused by something that they are doing or not doing.
- ✓ Reassurance that the infant is not sick.
- ✓ Education that colic is common and usually resolves spontaneously by three to four months of age.

Management

providing tips for techniques to soothe the baby

- ✓ Taking the infant for a ride in the car or a walk in a stroller/ buggy.
- ✓ Holding the infant or placing them in a front of carrier.
- ✓ Rocking the infant
- ✓ changing the scenery (or minimizing visual stimuli).
- ✓ placing the child in the infant swing.
- ✓ providing a warm bath.
- ✓ Rubbing the infant abdomen.
- ✓ Hip healthy swaddling (with room for hip flexion, knee flexion, and free movement of the leg).

Management

Providing tips for techniques to soothe the baby :

- ✓ providing "white noise" (eg, vacuum cleaner, clothes drier, dishwasher , commercial white noise generator, etc.)
- ✓ Anticholinergic medications should not be used in Infants younger than 6 mounts
- ✓ Simethicone has not been shown to be better than placebo. It may be interact with treatment in Infants being treated for congenital hypothyroidism resulting in undertreatment.
- ✓ The evidence is weak about the use of:

-herbal tea

- sugar solution

- Gripe water

Management

Breastfeeding mothers:

may try eliminations of milk

Management

For formula-fed Infants:

changing from milk- based to soy - based or other lactose- free formula had no effect in most studies.

.A protein hydrolase formula may moderately improve symptoms

Management

Lactobacillus reuteri

There is evidence from randomized trials that treatment with *L. reuteri* DSM 17938 is associated with decreased crying time.

In an individual patient data meta-analysis of four randomized trials (345 infants), *L. reuteri* DSM 17938 100 million colony-forming units per day decreased crying/fussing time on Day 21 compared with placebo (adjusted mean difference in change from baseline -25 minutes [95% CI -47 to -4 minutes])

All of the trials included in the meta-analysis reported no adverse effects.

CONCLUSIONS:
Lactobacillus reuteri possibly increased the effectiveness of treatment for infantile colic and decreased crying time at two to three weeks without causing adverse events. .However, these protective roles are usurped by gradual physiological improvements

Management

Other probiotics

We do not suggest probiotics other than *L. reuteri* for the routine management of colic in formula-fed or breastfed infants.

Final point

Caregiver support is the mainstay of the management of colic. It may influence the way the caregiver view their ability to care for their child.

Thanks for your attention