Excessive crying in infancy; value of the history and physical examination

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Abstract

Background: Excessive crying in early infancy is a common condition that causes a great deal of concern to the parents and physician.

Objective: The aim of this study is to find the underlying etiology of excessive crying in infancy and to determine how the history, physical examination, and laboratory investigations contribute to the final diagnosis.

Method: A prospective study done on 150 afebrile infants less than 4 months of age visited Al-Elwia hospital for children complaining of excessive crying of more than two hours.

The study done over a one year period from the first of January 2009 to the end of December 2009.

All febrile infants and those with acute illness preceding the onset of crying were excluded from the study.

Results: Of 150 afebrile infants with excessive crying 95 cases (63.3%) diagnosed as having idiopathic colic, 55 cases (36.7%) have a secondary underlying disorder.

The most common associated disorders include constipation, 12 cases (8%), gastro-esophageal reflux in 9 cases (6%), and feeding problems in 9 cases (6%).

Urinary tract infection was the most common underlying serious etiology found in 4 cases (2.7%).

History and physical examination contribute to the final diagnosis in 85% of cases.

Conclusion: Accurate diagnosis of infants with colic or excessive crying requires a thorough history and physical examination to exclude underlying etiology.

Screening laboratory tests apart from urine analysis and culture is of little help.

Key words: infant, colic, excessive crying.

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Introduction

Excessive crying or colic can be distressing to parents whose infant is inconsolable during crying episode. Infantile colic is a common condition affecting 10-30% of infants in the first three months of life; it is a diagnosis of exclusion that is made after performing careful history and physical examination to rule out organic causes [1].

Excessive crying among infants is common and often serious problem for parents, as such it may affect parental feeling negatively and may cause infant to be regarded as vulnerable or difficult[1,2,3].

Fussing and crying are normal aspects of development during the first three months of life. During this time, infants cry an average of 2 hours per day, peaking at six weeks of age and gradually decreasing. Crying is concentrated in the late afternoon and evening, occurs in prolonged bouts, and is unpredictable and spontaneous [4].

Physicians and parents use the term colic to describe an infant with excessive crying, irritability, or fussiness [5].

The most widely used definition of colic, which originated in 1954 by Wessel, describes using the "rule of three": crying for more than 3 hours per day, for more than 3 days per week, and more than 3 weeks in an infant that is well fed and otherwise healthy[6].

Parents may take all kinds of action to stop excessive crying. Some of these may be detrimental to the infant's health, such as slapping or shaking the child [1, 7, 8].

The causes of infantile colic remains unclear despite much research on the subject, but there is some evidence that the condition is linked to high levels of motilin and ghrelin hormones which

affect intestinal motility [9,10]. Other theories include food allergy, disturbed gut motility and visceral hypersensitivity [11].

Organic causes for excessive crying must be considered during the initial evaluation as it has been stated that organic causes account for less than 5% of infants presenting with excessive crying[5]. Gastrointestinal (gastroesophageal reflux, constipation), neuro-developmental and infectious disorders have been suggested as organic causes for colic [6,12].

The goal of this study was to find the causes behind excessive crying in afebrile infants below 4 months of age and to prove the role of the history and physical examination to reach the final diagnosis.

Method

A prospective study done on infants less than 4 months old visiting the Outpatient Clinic and Emergency Department of Al-Elwia Hospital for children with chief complaint of excessive crying episodes without apparent cause to the family. The study conducted over a one year period from the first of January 2009 to the end of December 2009.

Excessive crying defined as crying for more than 2 hours per day. All febrile infants with axillary temperature of more than 37.5 C° and those with acute illness preceding the crying episode were excluded from the study.

After taking a careful history and thorough physical examination on each infant including vital signs, skin, hernia orifices, rectum, eyes, general and systemic examination, the following data registered: age, sex, type of feeding, time of onset, duration of cry, diagnostic clue in the history, physical examination and laboratory tests.

Subsequent investigations guided according to the clue in the history and physical examination. The investingations sent in the form of urine analysis and culture, complete blood count (when indicated) and imaging studies in the form of ultrasound and chest x-ray. Positive tests recorded and indicated whether it is contributed to the diagnosis.

Gastroesophagel reflux diagnosed on the basis of clinical presentation in an infant with repeated vomiting, regurgitation or spitting after feeding.

Colic is defined according to Wessel's criteria described previously.

Result

Of the 150 infants presented with excessive crying, 82 infants (54.7%) were male and 68(45.3%) were female. Peak age incidence of crying was 4-8 weeks. In 99 infants (66%), the onset of cry had occurred between 6.00pm and midnight.

There is no correlation between the types of feeding and excessive crying as shown in the table below:

Table1 Type of feeding and relation to excessive crying

Type of feeding	No	%
Bottle	51	34
Breast	48	32
Mixed	51	34
Total (%)	150	100

Table 2 show the differential diagnosis of 150 infants with excessive crying

Cause	**1-4weeks**	**4-8 weeks**	**8-12 weeks**	**12-16 weeks**	**Total**	**%**
Colic	24	43	17	11	95	63.3
Urinary tract infection	0	1	1	2	4	2.7
GER*		3	4	2	9	6
Constipation	2	5	2	3	12	8
Otitis media		1	2	1	4	
Feeding problems	2	4	3		9	6
Fracture clavicle	1				1	0.6
Inguinal hernia		2	1		3	2
Hydrocele			1		1	0.6
Napkin dermatitis	1	2	1	1	5	3.3
Teeth eruption				2	2	1.3
Conjunctivitis	1	1			2	1.3
Anal fissure			1		1	0.6
DPT reaction		2			2	1.3
Total (%)	31(20.7)	64(42.7)	33(22)	22(14.6)	150(100)	

***GER: gastroesophageal reflux**

As shown in table 2, colic is the most common cause of infant crying found in 63.3% of cases, while constipation(8%), GER(6%), feeding problems(6%) among the common associated underlying disorders.

Urinary tract infection considered one of the serious underlying etiology of crying episodes found in 4 infants (2.7%).

Feeding problems account for 6% of cases, five children had overfeeding and four infants had bad feeding technique.

Two infants after follow-up visits found to have teething eruption at 4 months of age.

History and physical examination alone led to the final diagnosis in85% of cases, while in 15 infants laboratory investigations sent were helpful in the form of general urine exam, urine culture and sensitivity, complete blood count. Imaging studies done in 6 infants in the form of chest x-ray, and abdominal ultrasound to exclude serious diagnosis like intussusception.

Discussion:

Colic or, excessive crying, is one of the most frequent complaint brought to physicians in the first three months of life, approximately 20% 0f infants have excessive crying for which the parents seek medical attention[13,14].

In our study we found that excessive crying is slightly more common in male infant, with male to female ratio of 1.2: 1, as Illingworth study that

found colic not associated with infant's sex or the type feeding [15].

Crying in infants reaches a peak at six weeks of age and declines until about 4 months [16].

In our study the diurnal variation found in 66%, in line with other studies [17, 18]. Of the most common causes of excessive crying episodes revealed to be colic, constipation, and gastro-esophageal reflux as shown in table 2. This finding is similar to a study of 200 infants with excessive crying done in Iran [18].

Colic is a diagnosis of exclusion found in 63.3% of infants in our study. Our study emphasizes the need for good history and thorough physical examination as less than 5% of infants with excessive crying may have a serious underlying diagnosis [19, 20].

Urinary tract infections were the most common serious underlying diagnosis in our study, this finding in agreement with a cohort study of 238 infants with excessive crying [20].

Gastroesophageal reflux was diagnosed on the basis of clinical presentation in 6% of infants, most of those infants had more than 5 episodes of regurgitation, and 25% had poor weight gain.

Gastroesophageal reflux is increasingly diagnosed and should be a consideration in the colicky infants [21].

History and physical examination alone led to the final diagnosis in 85% of infants in our study. In a study of 56 infants with unexplained crying done by Pooles, found that the history in 20% and physical examination in 54% of infants provided clues to the final diagnosis [12].

Physicians must ask about the duration of cry, the timing and the infant behavior during the episode. On examination, the infant should be observed for breathing pattern and muscle tone. Also, signs infection in the ears, skin, soft tissues, bones and joints should be looked for. Abdominal examination to exclude mass, hernial orifices and anorectal examination is valuable to look for fissure or occult blood. [22]

Conclusion

Accurate diagnosis of afebrile infants with colic or fussiness requires a thorough history and physical examination including skin inspection, palpation of large bones, abdominal palpation, rectal and eye examination to exclude serious underlying etiology. Screening laboratory tests apart from urine analysis and culture is of little help.

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