NaturScience INSights
Paper Synopsis

Childhood functional gastrointestinal disorders: Neonate/toddler. 2016

Benninga et al. Gastroenterol 150:1443–1455

The Rome diagnostic criteria were developed to classify and treat functional gastrointestinal disorders (FGID). In the latest upgrade, Rome IV, the committee reviewed former guidelines, changing some of the diagnostic criteria and modernising treatment options. The mainstay of FGID management is parental reassurance and behavioural therapy, because many FGID are self-resolving. Insights on infant pain were added in recognition as distress factor for caretakers [1].

Functional gastrointestinal disorders

Authors evaluated FGID, an umbrella term for common medical conditions, in infants and toddlers without underlying abnormality. The symptoms often accompany normal development and are in general not dangerous. Breastfeeding should be continued.

FGID prevalence ranges from 41-67% of infant regurgitation to 1.9% of rumination syndrome. Changes from previous diagnostic criteria were minor except in the case of infant colic: The “rule of three” was eliminated granting more specificity to diagnostic criteria. In case of infant dyschezia the age of presentation has been increased from six to nine months. Diagnostic criteria for functional constipation were divided between toilet-trained and not toilet-trained children.

Diagnostic criteria

Infant regurgitation (three weeks to 12 months of age) is visible reflux and the most common FGID in the first year of life. A diagnosis can be made when there is regurgitation two or more times daily, for three or more weeks with no other signs or symptoms. This disorder is self-resolving. Clinicians should reassure caretakers and parents. Medical treatment is not needed even though some measures can be taken: Thickened feeding in formula-fed infants or a positioning approach, either left-sided or prone after meals. Frequent smaller-volume feedings may be tried but there is no evidence supporting this approach.

Functional constipation (FC, from birth to adulthood) can be caused by behaviour such as withholding faeces. In toilet trained children FC occurs when there is at least one episode/week and a history of big stools; in not-toilet trained children, FC occurs with less than two defaecations/week and a history of retention, painful bowel movements or large-diameter stools. An early intervention with education is preferred as a first step for management. Pharmacological treatment for example with polyethylene glycol, lactulose or milk of magnesia may be used to soften stools and relieve pain of hard stool passage.

Infant colic (from early age to five months) is a behavioural syndrome involving long periods of unsoothable crying. Crying is distressing to caregivers and non-/pharmacological options are available and often used. Clinical diagnosis is made when all the following characteristics are met: Infant age, recurrent and prolonged period of infant distress with no obvious causes, absence of other acute illnesses. This disorder is generally self-resolving.

Functional diarrhoea (six to 60 months of age) is a daily passage of four or more stools for more than four weeks. The onset has to be between six weeks and six months of age without failure to thrive and with adequate caloric intake. Nutritional factors such as excessive fruit juice consumption or overfeeding have to be addressed.

Cyclic vomiting syndrome (from one month to adulthood) is characterised by repeated episodes of vomiting with a stereotypical nature averaging 12 episodes per year. For the diagnosis, all the following characteristics are needed: Two or more periods of paroxysmal vomit in a six-months period, stereotypical episodes in each patient separated by weeks or months with return to baseline health between episodes. Treatment focuses on reducing episodes with avoidance of vomiting causes and with prophylactic treatment using cyproheptadine. Other drugs such as erythromycin, phenobarbital and lorazepam can be used. It is important to hydrate and carefully check electrolytes balances.

Infant dyschezia (from birth to nine months of age) is characterised as a strain for several minutes before stool passage caused by a failure in coordinating muscle tensions and relaxation of the pelvic floor. Thus the treatment relies on behavioural changes.

Infant rumination syndrome (three to eight months of age) is a self-stimulation practice involving regurgitation and re-chewing of already swallowed food. It is a rare syndrome and is diagnosed when there are repetitive contractions of the abdomen with effortless regurgitation that is either expelled or re-swallowed for at least two months. In addition, there should be three out of four of these signs: A specific time of onset (three to eight months), unmanageable with reflux treatment, absence of distress signals and limited to waking times. Even though there is data paucity on the condition, the authors agree on the behavioural origin of the condition that should be treated with empathetic and responsive nurturing.

Neurobiology of pain

The committee evaluated data on pain pathways since toddlers and infants have less ways to express their pain. Figure 2 of the paper may answer the pathophysiology of pain in infants helping clinicians and caregivers understand and assess it better.

Future research

Addressing data paucity through epidemiological and cross-cultural studies is needed to help understand FGID pathophysiology in children better.

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References

[1] Benninga AB, Nurko S, Faure C, Hyman PE, St. James Roberts I, Schechter NL. Childhood functional gastrointestinal disorders: Neonate/toddler. 2016 Gastroenterology 150:1443–1455. Doi: http://dx.doi.org/10.1053/j.gastro.2016.02.016