

Abdominal Pain in Children

From the Eternal City to the Examination Room



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KEYWORDS

- Abdominal pain • Functional gastrointestinal disorders • Rome IV
- Visceral hypersensitivity

KEY POINTS

- Abdominal pain in children is a common entity.
- A majority of abdominal pain in children is classified as functional.
- The Rome Foundation and the Rome IV play a critical role in setting diagnostic criteria for research and practice as well as in educating the public and practitioners about functional gastrointestinal disorders (FGIDs).
- FGIDs are best understood using the biopsychosocial model of disease. Pain is a result of early life events, psychosocial factors, and physiologic factors.
- Physiologic factors leading to FGIDs include motility disturbance, visceral hypersensitivity, altered central nervous system (CNS) processing, altered mucosal and immune function, and altered gut microbiome.

Chronic abdominal pain continues to be one of the most common problems seen by pediatricians and pediatric gastroenterologists. Globally, irritable bowel syndrome (IBS) seems to affect 11% of the population, with 30% of these individuals presenting for medical care.¹ In a community-based study from 1996, 13% of middle school students and 17% of high school students experienced pain on a weekly basis.² A more recent study used online questionnaires and the ROME III criteria. In this study, parents of children living in the United States between the ages of 4 years and 18 years were asked to report on gastrointestinal symptoms³; 23.1% of children qualified for at least 1 FGID.³ FGIDs account for approximately 50% of pediatric gastroenterology consultations.⁴

Disclosure: The author has nothing to disclose.

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Pediatr Clin N Am 64 (2017) 525–541
<http://dx.doi.org/10.1016/j.pcl.2017.01.012>

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Abdominal pain continues to be a frustrating presenting symptom, putting strain on the current fast-paced health care environment. Diagnosis and treatment of a child with abdominal pain take time—time for listening, counseling, and education; time that is difficult to find in current practice settings. A vast majority of patients who present for evaluation of abdominal pain do not have organic disease in the classic sense and fall into a functional category.

Many providers still believe that children with chronic abdominal pain are anxious or stressed. According to a survey by the American Academy of Pediatrics and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition, 16% of the 300 pediatricians surveyed thought that functional abdominal pain was a waste-basket diagnosis. Only 11% of these pediatricians thought that functional abdominal pain was a specific diagnosis based on clear criteria.⁵ Any of these preconceptions has an impact on the physician-patient relationship and potentially affects future therapeutic interaction.

FGIDs have a significant impact on those effected. FGIDs lead to significant difficulties with long-term comorbidities, including depression anxiety, lifetime psychiatric disorders, social phobia, and somatic complaints.⁴ The distinction between *organic disease* and *nonorganic disease* (FGIDs) is a spurious one. Research continues to support the understanding that these disorders are related to alterations in the enteric nervous system (ENS) and in the modulation between the ENS and the CNS, alterations that have an organic etiology through the modulation of neurotransmitters, receptors, and cellular processing pathways involved in the nervous system.

Abdominal pain is best understood within the framework of the biopsychosocial model of disease. The biopsychosocial model emphasizes the multifactorial nature of abdominal pain, including genetic, environmental, social, and psychological components. Treatment plans need to develop and adapt over time and be extremely individualized. As understanding of the pathophysiology of FGIDs increases, there will be a larger repertoire of therapies from which to select. This article reviews current understanding of pain-related FGIDS and the etiology, pathophysiology, and treatment modalities available.

ETIOLOGY

The possible causes of abdominal pain in children are numerous, ranging from benign disorders to life-threatening surgical emergencies. Abdominal pain may arise from disorders in multiple organ systems, including the pulmonary, gastrointestinal, urologic, and gynecologic systems. Infectious, neoplastic, metabolic, and anatomic mechanisms may all lead to the presenting symptom of abdominal pain (**Table 1**) Patients and families are left anxious. Providers are concerned that they may be missing a diagnosis. These concerns often lead to numerous referrals and ongoing potentially invasive testing. Fortunately, there are a several alarm symptoms that help practitioners differentiate those children with organic disease, who requiring further investigation from those with FGIDs (**Box 1**).⁵ Without these symptoms, extensive testing is unlikely to uncover other disorders.

EVALUATION

The evaluation of a patient with abdominal pain begins with a detailed history and physical examination. Patients often describe their symptoms using “diagnoses,” such as “I have been having problems with reflux.” Providers must focus specifically on each symptom. How long has the pain been occurring? Has the pain gotten better or worse or remained stable? What is the pain’s location? Is the pain associated with meals or sleep? Are there any specific triggers that worsen or alleviate the pain?

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