COMMENTARY

Managing nonspecific abdominal pain in children and young people

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In related research, Poonai and colleagues performed a randomized, blinded, double-dummy, single-centre trial to compare the efficacy of hyoscine butylbromide and acetaminophen in children and young people who presented to the emergency department with nonspecific, colicky abdominal pain.[1] Nonspecific abdominal pain is common among children presenting to both primary and emergency care. In the absence of clear alarm features, other systemic features, objective evidence of poor growth or positive family history of a gastrointestinal disorder (e.g., inflammatory bowel disease, celiac disease, peptic ulcer disease), most patients can be managed safely in primary care without further bloodwork or imaging. Parents are usually advised to monitor symptoms and offer simple analgesia, such as acetaminophen and ibuprofen. Only 5% of children presenting to primary care will require referral to secondary care.[2] However, establishing a positive relationship between the clinician and the child and their parent is important from the first presentation to lay the foundation for a potential future therapeutic relationship and complex interventions.

In their large trial, Poonai and colleagues observed a clinically significant reduction in pain scores among two-thirds of participants, all of whom received analgesia safely; however, hyoscine butylbromide was not found to be superior to acetaminophen.[1] Although simple analgesia is known to be well-tolerated and safe in children, evidence regarding its efficacy in children with undifferentiated or chronic abdominal pain is lacking,[3,4] so the related research adds usefully to the literature. However, 2 major study limitations warrant further consideration.

First, the trial enrolled only children aged 8–17 years who were screened between the hours of 1700 and 2300, thereby biasing participant selection by excluding preschool-age and early-school-age children and likely those whose pain developed during the school day. Children as young as 4 years commonly present with nonspecific abdominal pain. Younger children may have been excluded from the study owing to drug formulation or parental acceptability concerns. However, younger children's pain is poorly understood, often overlooked by caregivers and possibly less responsive to analgesia, so the inclusion of younger children would have provided much-needed information. Abdominal pain that develops during the school day is more likely to have a functional cause, for which medication is less likely to be beneficial.[5]

Second, improvement in abdominal pain is multifactorial and usually not attributable to medical therapy alone.[6,7] The ethics committee granting approval for the related research did not allow a placebo arm in the trial. However, the findings of several trials studying interventions for functional abdominal pain have suggested that a strong placebo effect may influence failure to show a significant effect of an intervention.[8]

Nevertheless, the findings of the related study are reassuring, as hyoscine butylbromide is already approved for use in children aged 6 years or older for smooth muscle spasm of the gastrointestinal and genitourinary tracts, including irritable bowel syndrome and bowel colic. Poonai and colleagues' findings are novel for the pediatric population and consistent with those of a randomized controlled trial conducted among adults attending

KEY POINTS

- Children present frequently to primary and emergency care with nonspecific abdominal pain.
- Only a few treatment options exist to manage colicky, undifferentiated pain; however, most children will not present more than once or twice to health services for this problem.
- Undifferentiated abdominal pain is poorly understood but likely multifactorial, arising from a combination of sensitizing medical events, psychosocial events and visceral hyperalgesia.
- Among children who seek health care for this problem, 20%–25% go on to be diagnosed with a disorder of the brain–gut axis, "a functional gastrointestinal disorder," for which international guidelines exist to guide management.
- At first consultation, it is important to establish a positive therapeutic relationship between the clinician and the child and their parents, focusing on optimizing symptom control over unnecessary investigation and medicines.

the emergency department, where acetaminophen was found to be as effective as hyoscine butylbromide, or a combination of the 2, in treating undifferentiated abdominal pain.[9]

Determining response to any analgesic requires reassessment of pain, but objective markers of improvement, such as whether the child is easily distracted and is able to eat, drink, or pass urine and stool, can be assessed during an observation period in hospital or in a follow-up telephone call to determine the next course of action. Parents' views and assessment of progress should always be taken into account.

For children referred on to secondary care for further investigation of abdominal pain, there are few options other than simple analgesia for pain management. Since 2013, codeine is no longer approved for use in children younger than 12 years, and opioid-containing medicines can paradoxically worsen pain if it is related to constipation, as is much abdominal pain. Children who have already received simple analgesia may be offered an anticholinergic analgesic, such as hyoscine butylbromide, as a next step in the face of persistent pain.

Most children will present to health services only once or twice for nonspecific abdominal pain. However, 20%–25% will go on to be diagnosed with a disorder of the brain–gut axis, alternatively termed "functional gastrointestinal disorder,"[10] such as functional dyspepsia, abdominal migraine, irritable bowel syndrome and functional abdominal pain not otherwise specified. The 2016 Rome IV criteria provide the latest diagnostic, investigative and management guidance for such disorders.[11]

While the pathophysiology underlying acute undifferentiated or chronic abdominal pain in children is incompletely understood, the pain likely arises from a combination of sensitizing medical events (e.g., bowel distention, inflammation or dysmotility), sensitizing psychosocial events (e.g., family stress, anxiety or a particular psychological coping style) and early-life events that lead to visceral hyperalgesia.[11] Diagnosing a functional gastrointestinal disorder will usually take time — often months — during which patients are likely to experience a diminished quality of life.[12,13] If symptoms are disruptive to the child's school attendance or hobbies, use of analgesia may be beneficial, particularly if early use breaks a pain cycle, thus reducing the consequences of pain for the child. However, this potential benefit should be balanced against the possibility that habitual or reflexive medication use could become an unnecessary part of the solution.

The establishment of a positive therapeutic relationship between the clinician and the child and their parent is equally important to any medication use. Clear and careful explanation of brain–gut interactions by clinicians who see the child at initial presentation; reinforcement that investigations and medicines are usually unnecessary; and discussion of behavioural management options with a focus on optimising symptom coping skills,[7,11] will build a foundation for this positive therapeutic relationship.

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