Treatment of functional constipation in children: Evidence-based recommendations from ESPGHAN and NASPGHAN 2014

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Introduction

- Constipation is a common disorder, reduces patients' quality of life. Many patients have persistent symptoms and require the use of prescription medications.
- Functional constipation is a common problem in childhood, with an estimated prevalence of 3% worldwide [1]. In 17% to 40% of children, constipation starts in the first year of life [2].

[1] van den Berg MM, Benninga MA, Di Lorenzo C. Epidemiology of childhood constipation: a systematic review. Am J Gastroenterol 2006;101:2401 –9.

[2] Loening-Baucke V. Constipation in early childhood: patient charac-teristics, treatment, and long-term follow up. Gut 1993;34:1400–4

Reference

- ESPGHAN and NASPGHAN were charged with the task of developing a uniform document of evidence-based guidelines in Journal of Pediatric Gastroenterology and Nutrition 2014;58: 258–274.

CLINICAL GUIDELINE CME

Evaluation and Treatment of Functional Constipation in Infants and Children: Evidence-Based Recommendations From ESPGHAN and NASPGHAN

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Methods

- Clinical questions addressing diagnostic and therapeutic topics were formulated and used Embase, MEDLINE, the Cochrane Database of Systematic Reviews…to evaluate outcomes.
- Expert opinion was used where no randomized controlled trials were available to support the recommendation

Question 1: What is the definition of functional constipation?

TABLE 2. Rome III diagnostic criteria for functional constipation

In the absence of organic pathology, ≥2 of the following must occur

For a child with a developmental age <4 years*

1. ≤2 defecations per week
2. At least 1 episode of incontinence per week after the acquisition of toileting skills
3. History of excessive stool retention
4. History of painful or hard bowel movements
5. Presence of a large fecal mass in the rectum
6. History of large-diameter stools that may obstruct the toilet

Accompanying symptoms may include irritability, decreased appetite, and/or early satiety, which may disappear immediately following passage of a large stool

For a child with a developmental age ≥4 years with insufficient criteria for irritable bowel syndrome†

1. ≤2 defecations in the toilet per week
2. At least 1 episode of fecal incontinence per week
3. History of retentive posturing or excessive volitional stool retention
4. History of painful or hard bowel movements
5. Presence of a large fecal mass in the rectum
6. History of large-diameter stools that may obstruct the toilet.

Question 2: What are the alarm signs and symptoms that suggest the presence of an underlying disease causing the constipation?

TABLE 5. Alarm signs and symptoms in constipation
Constipation starting extremely early in life (<1 mo)
Passage of meconium >48 h
Family history of HD
Ribbon stools
Blood in the stools in the absence of anal fissures
Failure to thrive
Fever
Bilious vomiting
Abnormal thyroid gland
Severe abdominal distension
Perianal fistula
Abnormal position of anus
Absent anal or cremasteric reflex
Decreased lower extremity strength/tone/reflex
Tuft of hair on spine
Sacral dimple
Gluteal cleft deviation
Extreme fear during anal inspection
Anal scars

Question 3: In the diagnosis of functional constipation in children, What is the diagnostic value of the following?

- In conclusion, evidence does not support the use of **digital rectal examination, an abdominal radiography, constipation based on colonic transit time (CTT) and transabdominal rectal ultrasonography** to diagnose functional constipation.

- Based on expert opinion, if only 1 of the Rome III criteria is present and the diagnosis of functional constipation is uncertain, a **digital examination** of the anorectum is recommended.

Voting: 7, 8, 8, 8, 9, 9, 9, 9

- Based on expert opinion, in the presence of alarm signs or symptoms or in patients with intractable constipation, a digital examination of the anorectum is recommended to exclude underlying medical conditions

Voting: 7, 8, 8, 8, 8, 9, 9, 9

Question 4: Which of the following diagnostic tests should be performed in children with constipation to diagnose an underlying disease?

- Routine allergy testing is not recommended to diagnose **cow's-milk allergy** in children with functional constipation.
- Based on expert opinion, a **2- to 4-week trial** of avoidance of CMP may be indicated in the child with intractable constipation.

Voting: 6, 6, 7, 7, 8, 8, 8, 9

- Based on expert opinion, we do not recommend routine **laboratory testing** for hypothyroidism, celiac disease, and hypercalcemia in children with constipation in the absence of alarm symptoms.

Voting: 7, 8, 8, 9, 9, 9, 9, 9

- Based on expert opinion, the main indication to perform **Anorectal Manometry** in the evaluation of intractable constipation is to assess the presence of the rectoanal-inhibitory reflex.

Voting: 7, 8, 8, 8, 9, 9, 9, 9

- **Rectal biopsy** is the gold standard for diagnosing **Hirchsprung disease**.
- Based on expert opinion, we do not recommend performing **barium enema** as an initial diagnostic tool for the evaluation of children with constipation.

Voting: 7, 7, 7, 7, 8, 8, 9, 9

Treatment of functional constipation

Question 5: What is the additional effect of the following nonpharmacologic treatments in children with functional constipation?

- A **normal fiber** intake is recommended in children with constipation.
- Based on expert opinion, we recommend a **normal fluid** intake in children with constipation.

Voting: 9, 9, 9, 9, 9, 9, 9, 9

- Based on expert opinion, we recommend a **normal physical activity** in children with constipation.

Voting: 9, 9, 9, 9, 9, 9, 9, 9

- The routine use of **prebiotics or probiotic** is not recommended in the treatment of childhood constipation.
- Based on expert opinion, we recommend demystification, explanation, and guidance for **toilet training** (in children with a developmental age of at least 4 years) in the treatment of childhood constipation.

Voting: 7, 8, 8, 8, 8, 9, 9, 9

Question 6: What is the most effective and safest pharmacologic treatment in children with functional constipation?

- The use of **PEG** with or without electrolytes orally 1 to **1.5 g/kg/day for 3 to 6 days** is recommended as the **first-line** treatment for children presenting with fecal impaction.
- An **enema once per day for 3 to 6 days** is recommended for children with fecal impaction, if PEG is not available.

- The use of **PEG** with or without electrolytes is recommended as the first-line maintenance treatment. A starting dose of **0.4 g/kg/day** is recommended and the dose should be adjusted according to the clinical response.
- The addition of **enemas** to the chronic use of PEG is not recommended in children with constipation.
- The use of **lactulose** as the first-line maintenance treatment is recommended, if PEG is not available.
- Based on expert opinion, the use of **milk of magnesia, mineral oil, and stimulant laxatives** may be considered as an additional or second-line treatment.

Voting: 7, 7, 7, 7, 9, 9, 9, 9

Question 7: What is the efficacy and safety of novel therapies for children with intractable constipation?

- Based on expert opinion, we recommend **antegrade enemas** in the treatment of selected children with intractable constipation.

Voting: 7, 7, 8, 8, 8, 9, 9

- Based on expert opinion, we do not recommend the routine use of **lubiprostone, linaclotide, and pruca-lopride** in children with intractable constipation.

Voting: 9, 9, 9, 9, 9, 9, 9, 9

- The routine use of **Transcutaneous Nerve Stimulation** (TNS) in children with intractable constipation is not recommended.

Conclusions

- Constipations with alarm signs and symptoms should suggest the presence of an underlying causing the constipation.
- Routine laboratory testing not recommend in children with constipation in the absence of alarm symptoms.
- Nonpharmacologic treatments: normal fiber, normal fluid, normal physical activity and guidance for toilet training everyday.
- PEG is recommended as the first-line treatment and lactulose is next choice, if PEG is not available.
- Antegrade enemas in the treatment of selected children with intractable constipation.

Thank You!