

# Constipation in Children

*Amirhossein Hosseini M.D.*

Assistant Prof. of Gastroenterology (Peds.)  
Shahid Beheshti University of Medical Sciences,  
Tehran, Iran



# Outline

- ❑ Definition, types, triggers
- ❑ CLINICAL MANIFESTATIONS
- ❑ When to be worried – red flags
- ❑ Diagnosis of constipation
- ❑ Management

# Definition

- ❑ Very common problem in children
- ❑ Affects up to 5-30% of children
- Constipation is defined as a **delay or difficulty** in defecation present for >1 month and significant enough to cause distress to the patient.

# Definition (Rome IV)

**Table 378.5** Rome IV Diagnostic Criteria for Defecatory Disorders in Neonates and Toddlers

FGID	AGE RANGE	CRITERIA REQUIREMENTS	CRITERIA ELEMENTS
Functional constipation	All pediatric age groups	Must include 1 month of $\geq 2$ of the criteria elements in infants up to 4 mo of age  In toilet-trained children, the following additional criteria elements may be used	<ul style="list-style-type: none"><li>• 2 or fewer defecations weekly</li><li>• History of excessive stool retention</li><li>• History of hard/painful bowel movements</li><li>• History of large-diameter stools</li><li>• Presence of a large fecal mass in the rectum</li> <li>• At least 1 weekly episode of incontinence after being toilet trained</li><li>• History of large-diameter stools that may clog the toilet</li></ul>

# Types of constipation

- **Functional constipation**, also known as idiopathic constipation or fecal withholding
  - *after the neonatal period*
- **constipation secondary to organic causes** based on a history and physical examination

# An acute episode usually precedes the chronic course

- This acute event could include:
  - changes in diet such as transition to formula
  - addition of pureed/solid foods
  - a **social stressor** such as initiation of toilet training (*early toilet training*), birth of a sibling, starting daycare/school, or abuse.

# CLINICAL MANIFESTATIONS



Source: Bishop WF: Pediatric Practice Gastroenterology;  
[www.accesspediatrics.com](http://www.accesspediatrics.com)

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- When children have the urge to defecate, typical behaviors include:
- *Withholding behavior; contracting the gluteal muscles by stiffening the legs while lying down, holding onto furniture while standing, or squatting quietly in corners, waiting for the urge to stool to pass.*
- **A vicious cycle of retention**

- **Encopresis** is defined as
  - voluntary or involuntary passage of feces into inappropriate places
  - at least once a month for 3 consecutive months
  - once a chronological or developmental age of 4 year has been reached.
  - *Complications of retentive encopresis include day and night urinary incontinence, urinary retention, urinary tract infection, megacystis, and rarely toxic mega colon.*
- **recurrent urinary tract infection**

# Drug Hx

Opiates,  
Phenobarbital,  
sucralfate,  
antacids,  
anticholinergics,  
antidepressants,  
sympathomimetics

# DIAGNOSIS (P/E & Para-clinic)

- The **physical examination** often demonstrates
  - a large volume of stool palpated in the suprapubic area;
  - DRE demonstrates a dilated rectal vault filled with guaiac-negative stool.
  - **Children with encopresis** often present with reports of underwear soiling, and many parents initially presume that diarrhea, rather than constipation, is the cause.
- In **retentive encopresis**, associated complaints of difficulty with defecation, abdominal or rectal pain, impaired appetite with poor growth, and urinary (day and/or night) incontinence are common.

# Anogenital index

- The location of the anus relative to perineal anatomic landmarks (by sex)
- *This is determined by the distance in centimeters from the vagina or scrotum to the anus, divided by the distance from the vagina or scrotum to the coccyx.*
- The normal anogenital index
  - *for females is  $0.39 \pm 0.09$*
  - *for males is  $0.56 \pm 0.2$*

# spinal pathology

- The presence of a hair tuft over the spine or spinal dimple, or failure to elicit a cremasteric reflex or anal wink suggests **spinal pathology**.
  - **A tethered cord** is suggested by decreased or absent lower leg reflexes.
- Children with no evidence of abnormalities on physical examination rarely require radiologic evaluation.

# Diagnostic modalities

- Upright abdominal X-ray
- Colonic transit studies
- MRI of the spine,
- motility studies
- a contrast enema

# intractable constipation

- In refractory patients (intractable constipation), specialized testing should be considered to rule out :
  - hypothyroidism,
  - hypocalcaemia,
  - lead toxicity,
  - celiac disease, and
  - disorders of neuromuscular gastrointestinal pathology

# TREATMENT

- Therapy for functional constipation and encopresis includes
  1. patient education,
  2. behavioral interventions,
  3. relief of impaction,
  4. and softening of the stool

# Tips for management of early constipation

- Diet
  - High fiber diet
  - water
- Regular toileting
  - A set time, and not rushed
  - Reward system

# If an impaction is present on the initial physical examination

## Step 1

- An enema is usually required to clear the impaction while stool softeners are started as maintenance medications.
- Typical regimens include the use of polyethylene glycol preparations, lactulose, magnesium, or mineral oil

## Step 2

- If no disimpaction after 2 weeks
- Add stimulant laxative

## Step 3

- If unable to tolerate PEG
- Substitute stimulant laxative +/- osmotic laxative



# Suggested Medications and Dosages for Disimpaction

MEDICATION	AGE	DOSAGE
<b>RAPID RECTAL DISIMPACTATION</b>		
Glycerin suppositories	Infants and toddlers	
Phosphate enema	6 mo-2 yr	66 mL
	≥3 yr	133 mL
<b>SLOW ORAL DISIMPACTATION IN OLDER CHILDREN</b>		
<i>Over 2-3 Days</i>		
Polyethylene glycol with electrolytes		25 mL/kg body weight/hr, up to 1,000 mL/hr until clear fluid comes from the anus

### Over 5-7 Days

Polyethylene without electrolytes

1.5g/kg body weight/day for 3 days

Milk of magnesia

2mL/kg body weight twice/day for 7 days

Mineral oil

3mL/kg body weight twice/day for 7 days

Lactulose or sorbitol

2mL/kg body weight twice/day for 7 days

From Loening-Baucke V. Functional constipation with encopresis. In: Wyllie R, Hyams JS, Kay M, eds. *Pediatric Gastrointestinal and Liver Disease*, 3rd ed. Philadelphia: WB Saunders; 2006: p 183.

**Table 378.9****Suggested Medications and Dosages for Maintenance Therapy of Constipation**

<b>MEDICATION</b>	<b>AGE</b>	<b>DOSE</b>
<b>TYPICAL DOSES FOR LONG-TERM TREATMENT (YR)</b>		
Milk of magnesia	>1 mo	1-3 mL/kg body weight/day, divided into 1-2 doses
Mineral oil	>12 mo	1-3 mL/kg body weight/day, divided into 1-2 doses
Lactulose or sorbitol	>1 mo	1-3 mL/kg body weight/day, divided into 1-2 doses
Polyethylene glycol 3350 (MiraLAX)	>1 yr	0.7 g/kg body weight/day
<b>FOR SHORT-TERM TREATMENT (MO)</b>		
Senna (Senokot) syrup, tablets	1-5 yr	5 mL (1 tablet) with breakfast, max 15 mL daily
	5-15 yr	2 tablets with breakfast, maximum 3 tablets daily

From Loening-Baucke V. Functional constipation with encopresis. In: Wyllie R, Hyams JS, Kay M, eds. *Pediatric Gastrointestinal and Liver Disease*, 3rd ed. Philadelphia: WB Saunders; 2006: p 185.

- The **goal of therapy** is the passage of soft stools, ideally once per day, and no less than every other day.

# New treatment

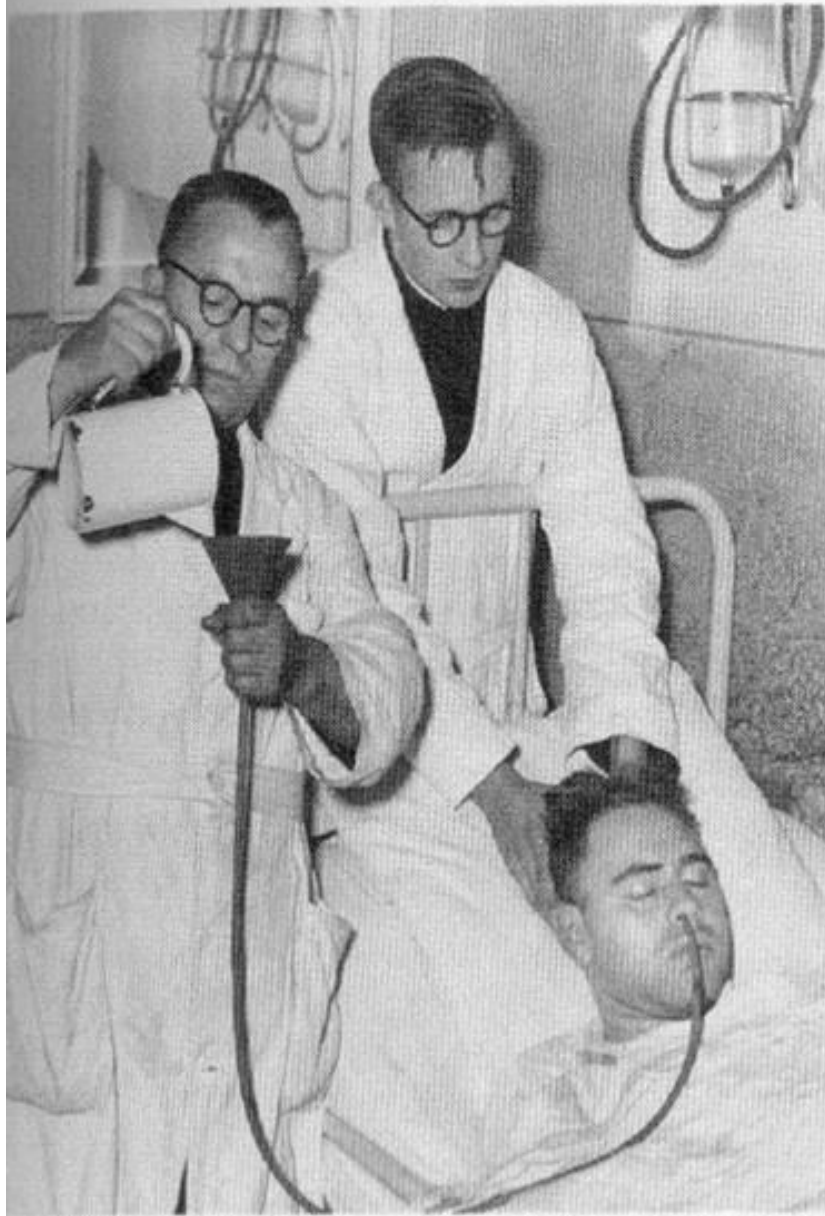
- **Linaclootide (Linzess)** acts locally in the intestine to stimulate the guanylate cyclase receptors **increasing chloride and bicarbonate secretion** thereby increasing the fluid secretion and motility.
- ***Approval from 6 year of age***
- ***72 micg capsule***

Take home message

- Findings suggestive of underlying pathology include: (Red flags)
  - *Failure to pass meconium with 48hrs of birth*
  - *Present at birth /first few weeks of life*
  - *failure to thrive, weight loss, vomiting,*
  - *significant abdominal distention,*
  - *Previously unknown/undiagnosed leg weakness or motor delay*

## Red Flags (cont.)

- *Persistent anal fissure or fistula*
- Abnormal appearance/position/patency of anus
- Abnormal spinal/gluteal examination
- Lower limb deformities
- Abnormal reflexes



**Thanks  
for Your  
Attention**