



CONSTIPATION

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Constipation and encopresis represent common problems in children.

Disease that cause constipation

Functional constipation in >90%

Neurogenic constipation:

Hirschprung disease

Disorders of the spinal cord

Cerebral palsy

Chronic intestinal pseudo-obstruction

Diseases that cause constipation

constipation secondary to anal stenosis:

Anal fissures

Anterior location of the anus

Anal stenosis

Anal atresia with fistula

Constipation secondary to endocrine and metabolic disorders:

Hypothyroidism

Renal acidosis-diabetes insipidus-hypercalcemia

Cystic fibrosis

Disease that cause constipation

Constipation secondary to neuromuscular disorders:

Myotonic dystrophy-mascular dystrophy

Chronc intestinal pseudoobstruction

Constipation due to abnormal abdominal musculature:

Prune belly syndrome-gastroschisis-down syndrome



Constipation due to drugs:

Methylphenidate-phenytoin-imipramine-antidepressant-antacids-codeine

ROME 2 CRITERIA

A set of diagnostic guidelines, known as the ROME 2 criteria.

The criteria describe three types of constipation in children:

Infant dyschezia

Functional constipation

Functional fecal retention

Dyschezia

If an infant exhibits straining & crying for over 10 min, followed by successful passage of soft stool, the infant meets the ROME 2 criteria for infant dyschezia.

This defecation disorder is seen in the first few months of life and can occur several times a day for up to 20 min at a time.

Functional constipation

constipation is defined in infant & preschool children by the ROME2 criteria as at least 2 weeks of: scybalous, pebble-like, hard stools for a majority of stools or firm stool two or less times per week, and no structural, endocrine, or metabolic disease.

Functional fecal retention

Functional fecal retention is a more severe form of constipation.

Passage of large diameter stools less than two times per week and retentive posturing.

Preschool & school-aged children

Constipation can be defined by a stool frequency of less than 3 per week, passage of painful bowel movement, or stool retention with or without encopresis, even when the stool frequency is more than 3 per week.

investigation

HISTORY:

Complete with special

Attention to:

Character of stools in toilet

Character of stools in underwear

Stool withholding maneuver

Age of onset of constipation

Abdominal pain

Urinary symptoms:day wetting-bed wetting-urinary tract infection

Dietary habit

Physical examination

Complete with special attention to:abdominal
examination

anal inspection

rectal digital exam

neurologic exam(preanal sensation testing)

Laboratory investigation

Occult blood testing

Abdominal radiographs

Barium enema study

Colonic transit study

Anorectal manometry

Colonic motility study

Occult blood testing

It is recommended that a test for occult blood be performed on the stool of all infants with constipation

Other indication:

Abdominal pain

FTT

Intermittent diarrhea

Family history of colon cancer or colonic polyps

Abdominal radiographs

Radiographic studies usually are not indicated in uncomplicated constipation.

Useful for presence or absence of retained stool—survey of spine.

Barium enema study

Barium enema is unnecessary in uncomplicated cases of constipation.

Helpful in the assessment of hirschprung disease & other neuronal disease & post surgical patient operated for anal atresia or hirschprungs disease.

Colonic transit study

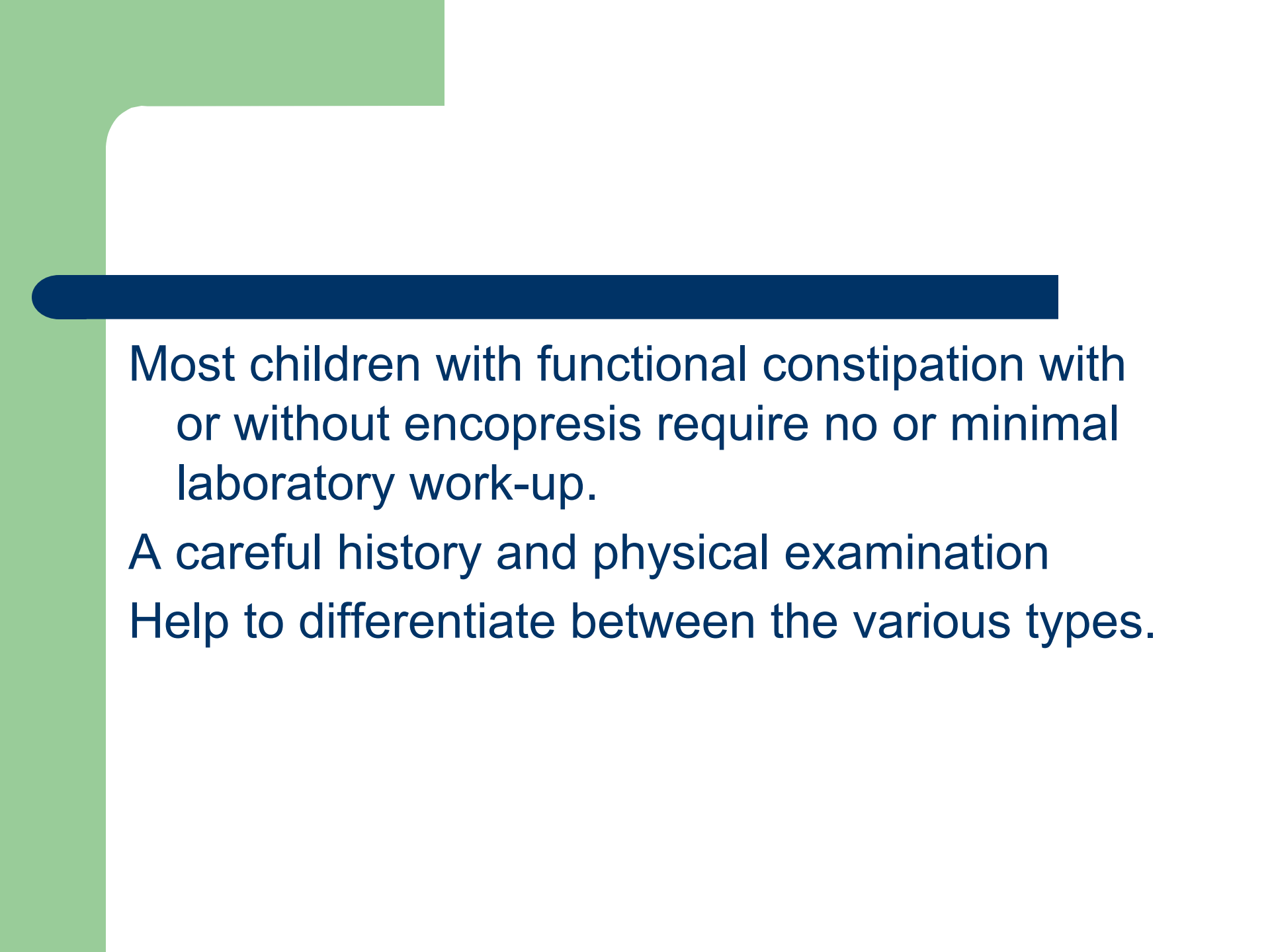
colonic transit study is another method of diagnosing constipation, but is unnecessary in most children with or without encopresis.

ANORECTAL MANOMETRY

Unnecessary in children with functional constipation with or without encopresis.

Usefull in patient ,where the history reveal early onset of constipation,severe constipation,absence of fecal soiling,small diameter stools or when the physical examination reveals FTT,small rectal ampulla.

It may also be helpful in the diagnosing other condition,such as motility disorders associated with spinal defects and anal achalasia.



Most children with functional constipation with or without encopresis require no or minimal laboratory work-up.

A careful history and physical examination
Help to differentiate between the various types.

Colonic motility study

colonic motility study is unnecessary in children with functional constipation. except Myopathy or neuropathy.

treatment

Treatment includes various forms of behavioral therapy and psychological approaches and is designed to clear fecal impaction ,prevent recurrence of fecal impaction,promote regular bowel habit.

Education

Disimpaction

The removal of fecal retention

Prevention of re-accumulation

education

Not prevent the soiling for short periods
Of time if the child concentrates carefully
On closing the external anal sphincter.

disimpaction

Disimpaction can result with either the use of enemas or oral therapy.

For rapid removal of the fecal retention, a hypertonic phosphate enema can be used.

Complication: hypernatremia-hyperphosphatemia-hypocalcemia-coma-hypokalemia-dehydration-seizure-death

Normal saline enema maybe used but are often not effective.

Cleansing soap-suds enemas should be avoided because they can result in bowel necrosis –perforation&death.

Tap-water enemas should be avoided as they can cause water intoxication.

Continueud...

Children with megarectum or megacolon who do not respond to phosphate enema can be disimpacted with hyperosmolar milk of molasses enema with the infusion stopped when the child indicate discomfort.

Cardiopulmonary compromise associated with milk of molasses enema in children with serious underlying medical conditions have been reported.

Continueud...

Disimpaction can be achieved with oral lavage using polyethylene glycol-electrolyte solution, and the new electrolyte –free polyethylene.

It is recommended to give 5-10 mg metoclopramide by mouth 15 min before to lavage solution to reduce nausea&vomiting.

Suggested medication and dosage for disimpaction.

Rapid rectal disimpaction

Glycerin suppositories

Phosphate enema	<1yr	60ml
	>1yr	6ml/kg

Milk of molasses enema	200-600ml
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(older children)

Continueud...

Slow oral disimpaction in older children:

Over 2-3days

Polyethylene glycol with electrolytes
(25ml/kg)

Over 5-7 days

Polyethylene without electrolytes(1.5g/kg)

MOM(2ml/kg twice/day for 7 days)

Mineral oil(3ml/kg twice/day for 7 days)

Lactulose or sorbitol(2ml/kg twice/day for 7days)

Prevention of re-accumulation of stool

Behavior modification

Fiber

laxative

Behavior modification

The child needs to be reconditioned to normal bowel habits by regular toilet use.

The child is encouraged to sit on the toilet for up to 5 min, 3-4 times a day following meals.

FIBER

The dietary recommendation for children older than 2 yr of age is to consume an amount of dietary fiber equivalent to age in yrs plus 5g/day.

Recommended are several serving daily from a variety of fiber-rich foods such as whole grain breads & cereals ,fruits , vegetables,legumes.

laxative

In most constipated patients, daily defecation is maintained by the daily administration of laxatives beginning in the evening of the clinic visit.

Magnesium hydroxide-mineral oil-lactulose-
Sorbitol-polyethylen glycol without electrolytes.

Laxatives should be used according to bodyweight & severity of the constipation.

There is no set dosage for any laxative. there is only a starting dosage for each child.

Continueud.....

That must be adjusted to induce 1-2 bowel movements per day that are loose enough to ensure complete daily emptying of the lower bowel and to prevent soiling and abdominal pain.

The mechanism of action of milk of magnesia is the relative non-absorption of magnesium and the resultant increase in luminal osmolality.

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For severe constipation with rock-hard stools, the starting dosage of milk of magnesia is 2-3ml/kg per day given with the evening meal.

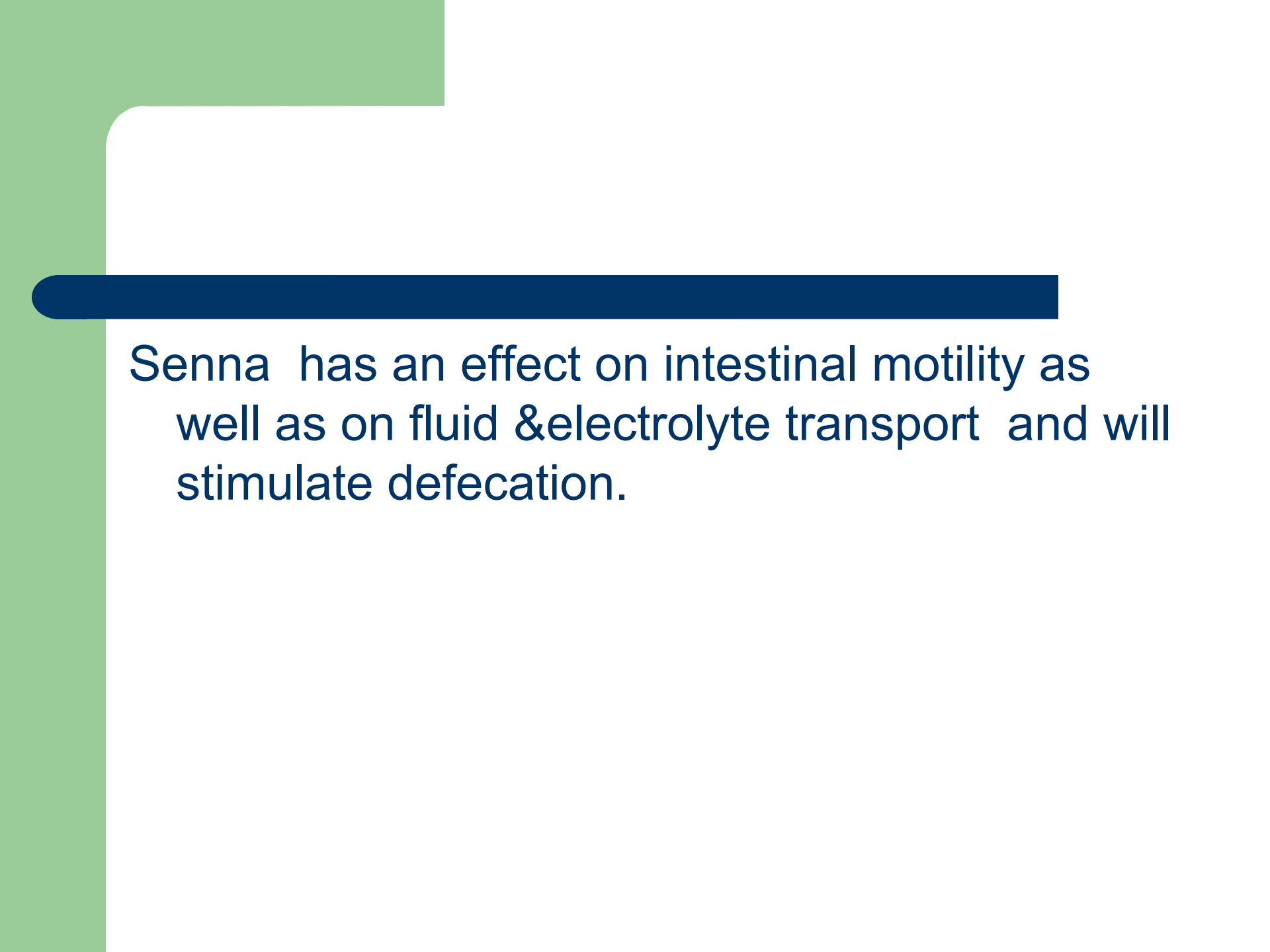
Mineral oil is converted into hydroxy fatty acids, which induce fluid & electrolyte accumulation. dosage are 1-3ml/kg /day.

Mineral oil should never be force-fed or given to patients with dysphagia & vomiting. Because of the danger of aspiration pneumonia.

Continueud...

Lactulose or sorbitol are non-absorbable carbohydrates. they cause increased water content by the osmotic effects of lactulose sorbitol and their metabolites.

They are fermented by colonic bacteria, thereby producing gas & sometimes causing abdominal discomfort.



Senna has an effect on intestinal motility as well as on fluid & electrolyte transport and will stimulate defecation.

suggested medications & dosage for maintenance therapy of constipation

For long –term treatment

MOM	>1month	1-3ml/kg/day
Mineral oil	>12month	1-3ml/kg
Lactulose	>1month	1-3ml/kg
PEG	>month	0.7g/kg

For short –term treatment

Senna	1-5yr	5ml with breakfast
Glycerin enema	>10yr	20-30ml/day
Bisacodyl suppositories	>10yr	10mg daily

Psychological treatment

The presence of coexisting behavioral problem often is associated with poor treatment outcome.

Psychological intervention ,family counseling and occasional hospitalization of child for 2-4 weeks to get a treatment program started have helped some of these unfortunate children.

Follow up visit & weaning from medication

Progress should be initially assessed monthly later less frequently by reviewing the stool record & repeating the abdominal & rectal examination. if necessary, dosage adjustment is made and the child & parents are encouraged to continue with the regimen.

FOLLOW-UP.....

After regular Bowel habit are established the frequency of toilet sitting is reduced & the medication dosage is gradually decreased to a dosage that maintains one bowel movement daily & prevent encopresis.

Follow-up

After 6-12 months ,reduction with discontinuation of the medication is attempted.