Bread and Butter GI: Updates on Management of Constipation and GERD

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June 10, 2015

Constipation

JPGN
Journal of Pediatric Gastroenterology and Nutrition
Wolters Kluwer

CLINICAL GUIDELINE

CME

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

M.M. Tabbers, C. DiLorenzo, M.Y. Berger, C. Faure, M.W. Langendam, S. Nurko, A. Staiano, Y. Vandenplas, and M.A. Benninga

Scope of the Problem

- 3% prevalence worldwide
- In 17- 40% of children, constipation starts in the first year
- Majority have functional constipation

Rome III Diagnostic Criteria for Functional Constipation

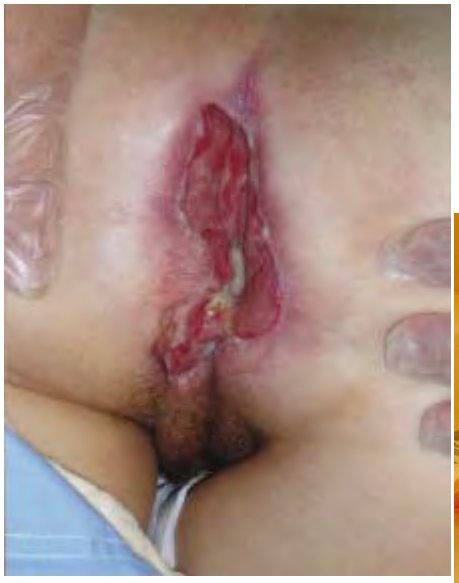
In the absence of organic pathology ≥2 of the following

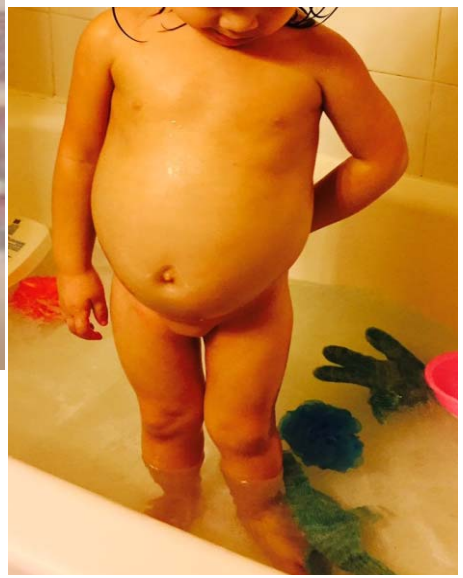
1. ≤2 defections per week
2. At least 1 incontinence/week
3. History of excessive stool retention
4. History of hard or painful bowel movements
5. Presence of a large fecal mass in rectum
6. History of large diameter stools that obstruct the toilet

Accompanying irritability, decreased appetite, early satiety, which may disappear following passage of a large stool.

Alarm Signs or Symptoms

- Passage of meconium- 50% of HD patients pass meconium in 48hrs
- Fear of passing stools
- Toilet training
- Growth
- Abdominal distention
- Rectal bleeding
- Vomiting and nausea
- Urinary issues



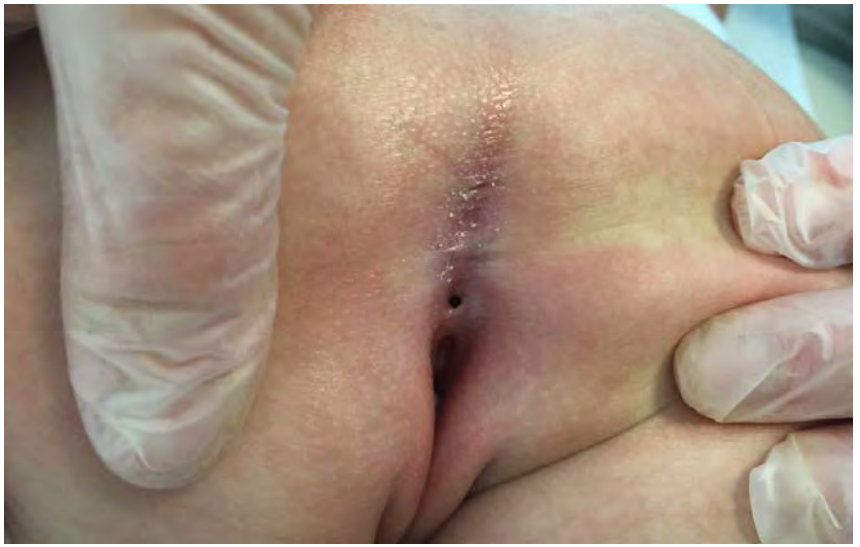


Differential Diagnosis for Constipation

Celiac disease
Hypothyroidism, hypercalcemia
Dietary protein allergy
Drugs: anticholinergic, lead
Vitamin D intoxication
Botulism
Cystic Fibrosis
Hirschsprung Disease
Imperforate anus
Pelvic mass
Spinal cord abnormality

Physical Exam

- **Abdominal mass, stool**
- **Location of anus**



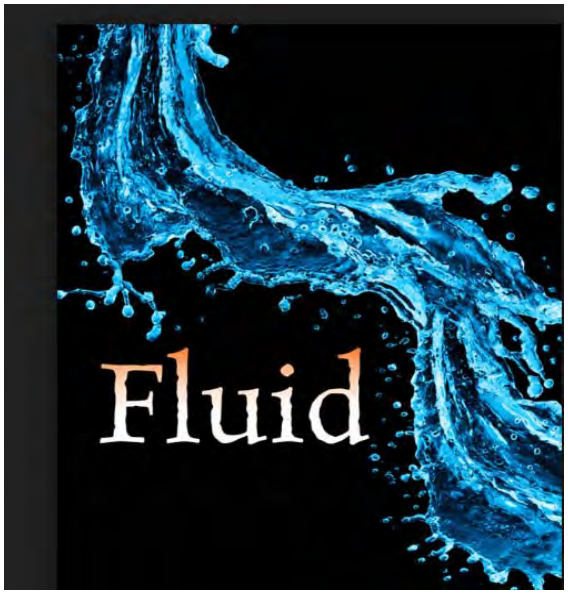
- **Spinal dimple, mass, hair**
- **Rectal-presence of large, hard stool**

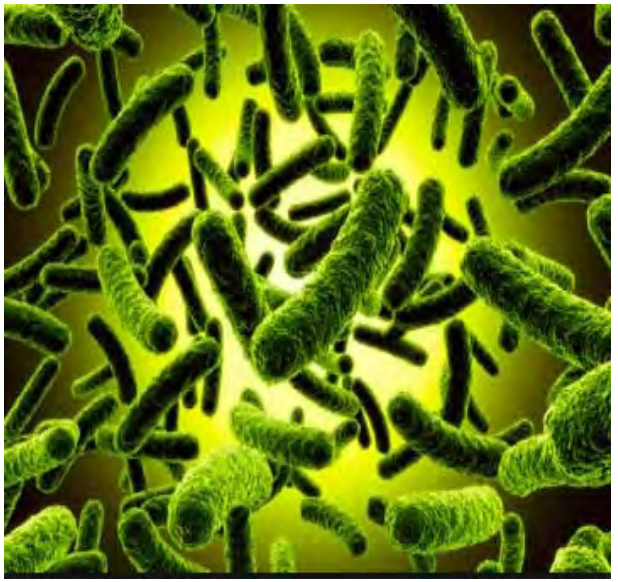
Testing

- Routine testing for celiac disease, hypothyroidism, hypercalcemia and milk protein allergy- not recommended.
- Empiric 2-4 week trial of CMP free diet is recommended
- Routine MRI not recommended without neurological signs

Management

- Normal amount of fluid, fiber and activity is recommended
- Prebiotics and probiotics not very helpful
- Biofeedback not helpful





Medications

Oral Laxative	Dosage
Osmotic laxatives	
Lactulose	1-2 g/kg, once or twice/day
PEG 3350	Maintenance: 0.2-0.8 g/kg/day
PEG 4000	Fecal disimpaction: 1-1.5 g/kg/day (with a max of 6 consecutive days)
Milk of Magnesia (MgOH)	2-5 y: 0.4-1.2 g/day, once or divided 6-11 y: 1.2-2.4 g/day, once or divided 12-18 y: 2.4-4.8 g/day, once or divided
Fecal softners	
Mineral oil	1-18 y :1-3 ml/kg/day once or divided, max 90 ml/day
Stimulant laxatives	
Bisacodyl	2-10 y: 5 mg once a day >10 y 5-10 mg once/day
Senna	2-6 y: 2.5-5 mg once or twice a day 6-12 y 7.5-10 mg/day >12 y 15-20 mg/day
Sodium picosulfate	1mo-4 y: 2.5=10 mg once/day 4-18 y: 2.5-20 mg once/day

Medications

Rectal Laxatives/enemas	Dosage
Bisacodyl	2-10 y: 5 mg once/day >10 y : 5-10 mg once/day
Sodium docusate	<6 y: 60 ml >6 y: 120 ml
Sodium phosphate	1-18 y: 2.5ml/kg, max 133ml/dose
NaCl	Neonate <1 kg: 5ml, >1 kg: 10ml >1 y: 6ml/kg once or twice a day
Mineral oil	2-11 y: 30-60 ml once/day >11: 60-150 ml once/day

Routine use of lubiprostone, linaclotide, and prucalopride in children with intractable constipation is not recommended.

Black Box Warning for Phosphate Based laxatives

U.S. Food and Drug Administration
Protecting and Promoting *Your* Health

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Safety

Home › Safety › MedWatch The FDA Safety Information and Adverse Event Reporting Program › Safety Information › Safety Alerts for Human Medical Products

MedWatch The FDA Safety Information and Adverse Event Reporting Program

- Safety Information
- Safety Alerts for Human Medical Products
- 2015 Safety Alerts for Human Medical Products
- 2014 Safety Alerts for Human Medical Products
- 2013 Safety Alerts for Human Medical Products
- 2012 Safety Alerts for Human Medical Products

Oral Sodium Phosphate (OSP) Products for Bowel Cleansing (marketed as Visicol and OsmoPrep, and oral sodium phosphate products available without a prescription)

Audience: All healthcare professionals, consumers

[Posted 12/11/2008] FDA has become aware of reports of acute phosphate nephropathy, a type of acute kidney injury, associated with the use of oral sodium phosphate products (OSP) for bowel cleansing prior to colonoscopy or other procedures. These products include the prescription products, Visicol and OsmoPrep, and OSPs available over-the-counter without a prescription as laxatives (e.g., Fleet Phospho-soda). In some cases when used for bowel cleansing, these serious adverse events have occurred in patients without identifiable factors that would put them at risk for developing acute kidney injury.

FDA is requiring the manufacturer of Visicol and OsmoPrep, the two OSPs available by prescription only, to add a Boxed Warning to the labeling for these products. FDA is also requiring that the manufacturer develop and implement a risk evaluation and mitigation strategy (REMS), which will include a Medication Guide, to ensure that the benefits of these products outweigh the risk of acute phosphate nephropathy, and to conduct a postmarketing clinical trial to further assess the risk of acute kidney injury with use of these products. FDA recommends, in light of the risk of acute phosphate nephropathy, over-the-counter laxative OSP products should not be used for bowel cleansing. Consumers should only use OSPs for bowel cleansing pursuant to a prescription from a healthcare professional.

[December 11, 2008 - Drug Information Page - FDA]

Are Medications for Constipation Safe?

The New York Times

Drug for Adults Is Popular a

By CATHERINE SAINT LOUIS
Published: May 25, 2012 | 192 Comments

Since it was first introduced 13 years ago, a dr
odorless, tasteless laxative that can be easily c
water — has become a staple in many Americ

Enlarge This Image

Aaron Houston for The New York Times

Dr. Leo Heitlinger, a pediatric gastroenterologist, said doctors can be complacent about drugs never approved for children.

But the way m
and its many g
strayed far fro
The Food and
approved the
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time.

Instead, Miral
term solution
constipation –
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"I've had kids
a pediatrician
generally refer
children with
helped by diet

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Doctors' Tips for Childhood Constipation (May 26, 2012)

Motherlode Blog: Parents Share Advice for the Constipated Child (May 26, 2012)

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SCIENCE

Scrutiny for Laxatives as a Childhood Remedy

By CATHERINE SAINT LOUIS JAN. 5, 2015

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The Food and Drug Administration has raised new questions about the safety of an adult laxative routinely given to constipated children, sometimes daily for years.

The agency has asked a team of scientists in Philadelphia to look more closely at the active ingredient in Miralax and similar generic products, called polyethylene glycol 3350, or PEG 3350. While outlining the scope of the research, the agency also disclosed that its scientists had discovered trace amounts of two potential toxins in batches of Miralax tested six years ago.

The news is likely to surprise parents and some doctors.

"Every pediatric GI physician, I would guarantee you, has told a family this is a safe product," said Dr. Kent C. Williams, a gastroenterologist at Nationwide Children's Hospital in Columbus, Ohio. Now, he worries, "it may not be true."

NASPGHAN Defends Use of PEG

Polyethylene Glycol 3350 (PEG 3350) Frequently Asked Questions

NASPGHAN Neurogastroenterology and Motility Committee
January 2015

1. What is PEG 3350?

Polyethylene glycol (PEG) is a water-soluble, inactive ingredient of which only a very small amount is absorbed in the gut or gastrointestinal tract, the rest moves through the body. PEG is non-toxic and has no effect on the body. It is used in many products including medications such as ointments and pills to allow them to be more easily dissolved in water. PEG can also be found in common household products such as certain brands of skin creams and tooth paste. PE
form of PEG in the United States and Canada for
focus of discussion in this FAQ. Commonly used
the United States and Canada are MiraLax, Glyco

2. How does PEG 3350 work in the treatm

PEG 3350 helps constipation by holding more wa
and easier to pass. The effect of PEG 3350 is not
more to work.

3. Is PEG 3350 approved for use in children?

No. PEG 3350 is currently approved by the U.S.

To the Editor:

Re: "Scrutiny for Laxatives as a Childhood Remedy," Jan. 5

Constipation affects about five percent of all children and can be associated with significant distress to the child and family. In most cases, constipation can be treated effectively with behavioral and dietary changes. Many times, however, constipation becomes a chronic problem that, when untreated, can cause severe long-term physical and psychological consequences.

For children with chronic constipation, medications aimed at softening stools are often needed for months or years to achieve regular bowel movements. Your article "Scrutiny for Laxatives as Childhood Remedy" is likely to provoke questions by any parent, or caregiver, whose child has suffered from constipation and benefited from the use of stool softeners or laxatives, including PEG 3350. Parents with questions about their child's current treatment for constipation are encouraged to consult a pediatrician or pediatric gastroenterologist.

The North American Society of Pediatric Gastroenterology, Hepatology and Nutrition and the American Academy of Pediatrics are committed to advancing the understanding of disease and the safety of treatment through data and research and welcome the study of prolonged use of PEG 3350.

Disimpaction

- PEG orally 1-1.5 g/kg/day
  for 3 to 6 days :
  first line treatment

- An enema once per day
  for 3 to 6 days

How long should treatment continue

- For at least 2 months
- All symptoms resolved for at least 1 month
- Child should be toilet trained

Prognosis

- Delay in treatment >3 months do worse
- 50% doing well without laxatives at 6-12 months
- 50% and 80% doing well at 5 and 10 years

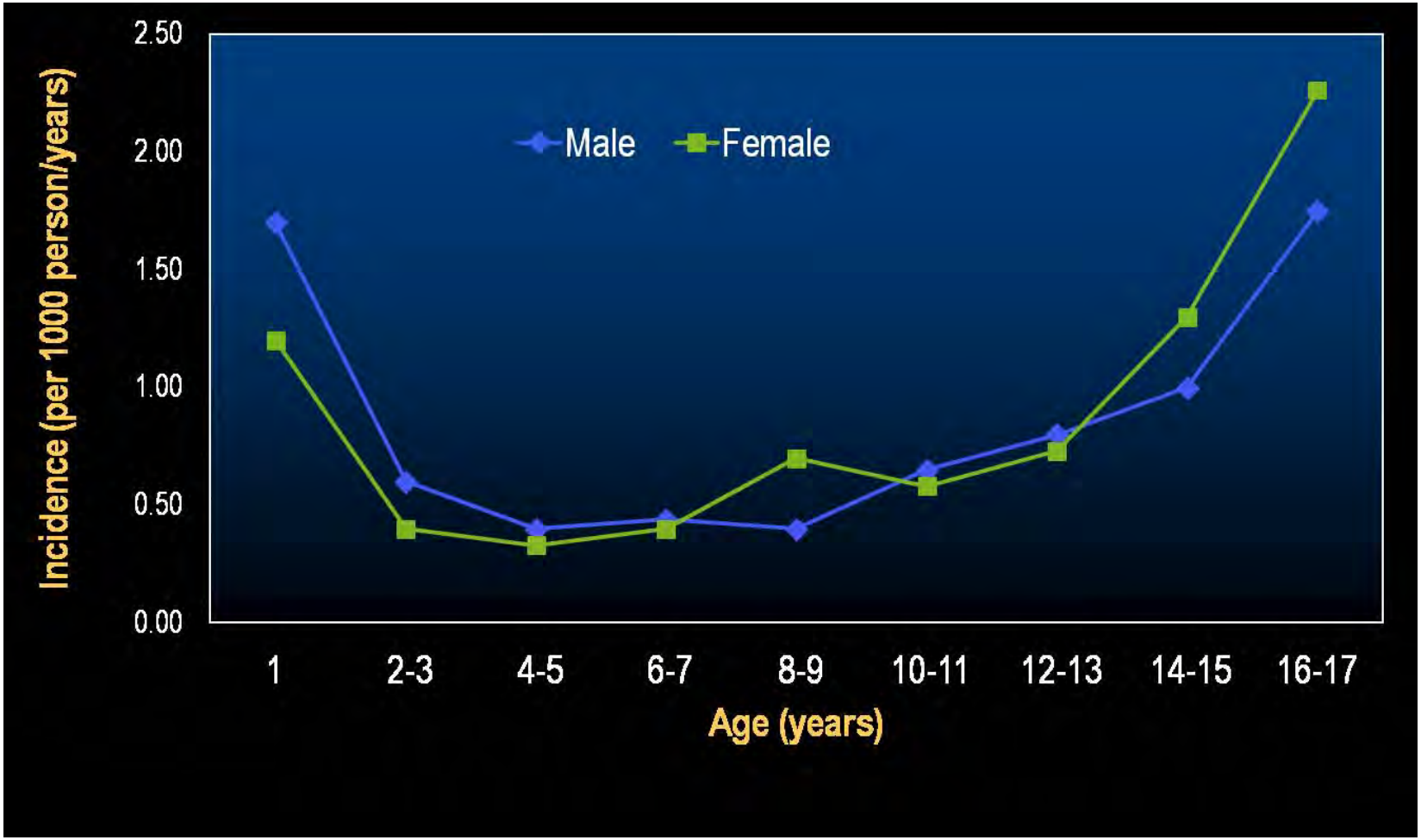
GI Resources

Summary

- Recognize and treat constipation early
- Disimpaction before maintenance therapy
- Short term treatment is not helpful

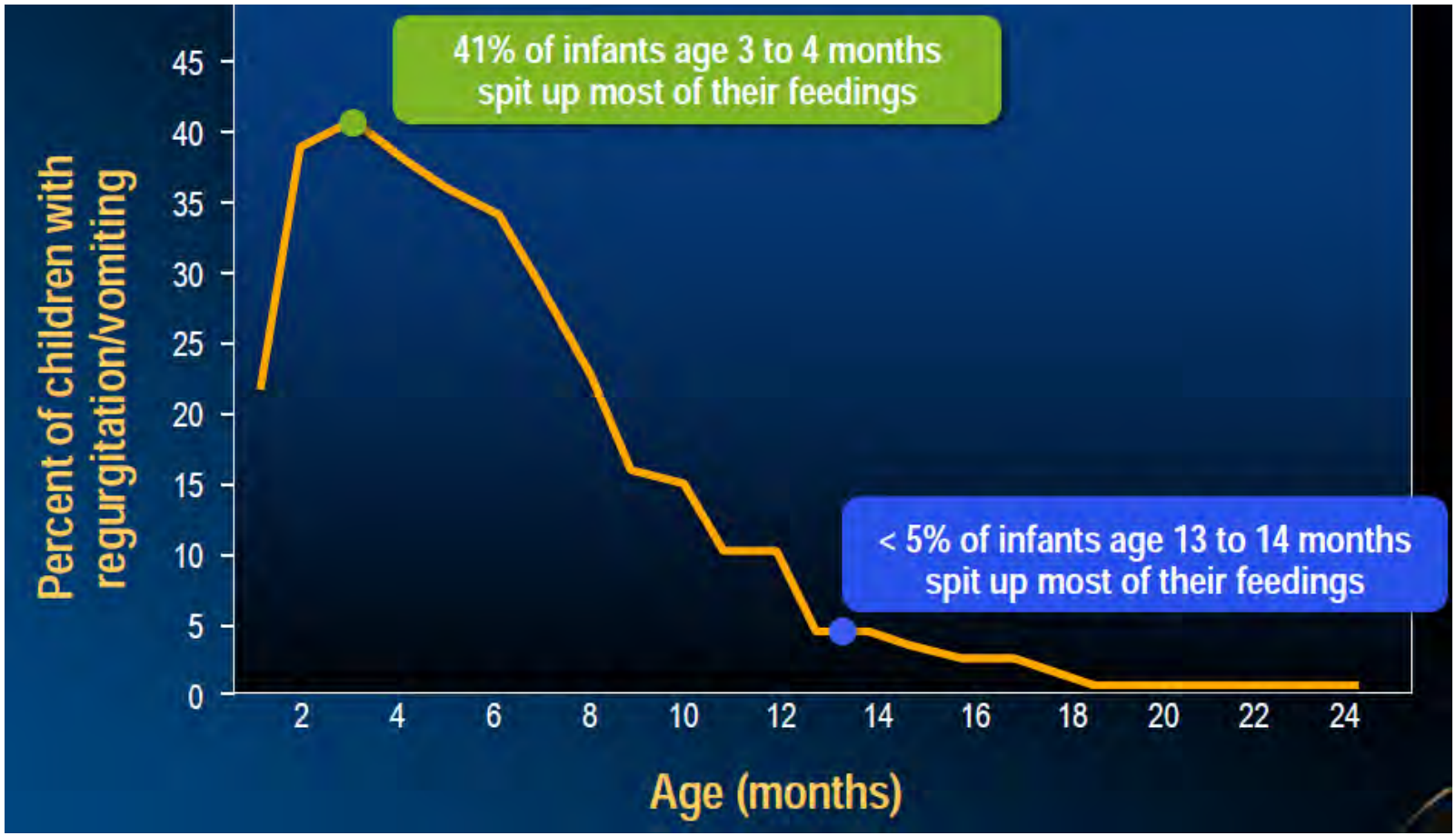
GERD in Infancy

Estimated Incidence Rates of GERD in Children and Adolescents from 2000-2005



Ruigómez et al. *Scand J Gastroenterol.* 2010;45(2):139-46.

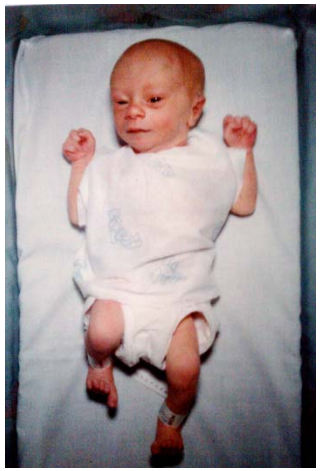
Natural History of GER in Children Up to Two Years of Age



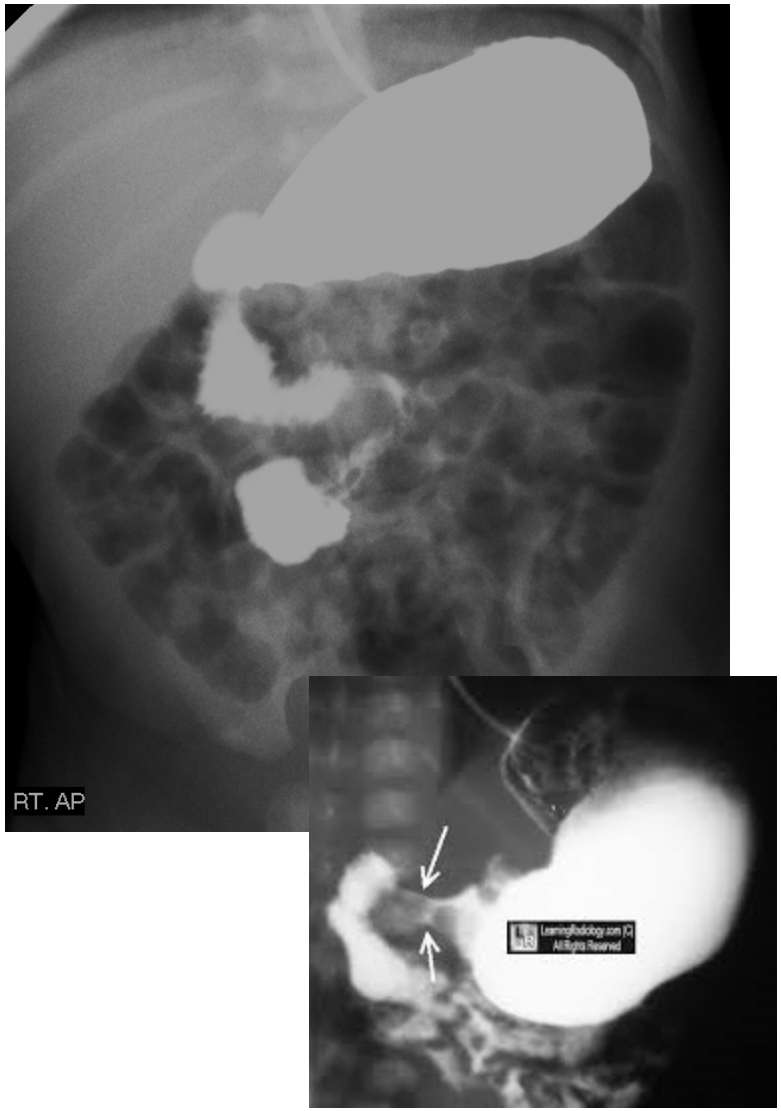
Martin et al. *Pediatrics*. 2002;109:1061–1067.

Signs of Complicated GERD

- **Poor weight gain**
- **Excessive crying or irritability**
- **Respiratory problems, including:**
  - Wheezing
  - Stridor
  - Recurrent pneumonia
  - Choking
  - Respiratory problems
- **Sandifer's syndrome**



Evaluation: Upper GI series



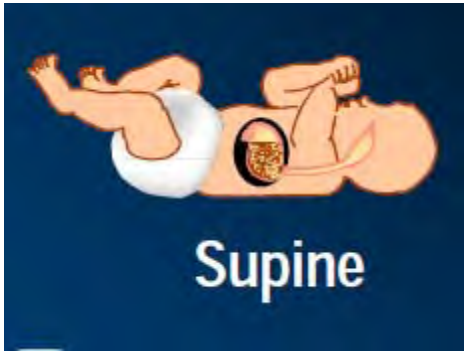
Advantages

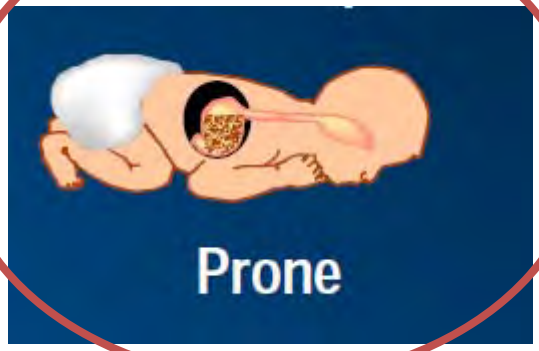
Useful for detecting anatomic abnormalities such as malrotation, pyloric stenosis.

Disadvantages

Cannot discriminate between physiologic and nonphysiologic GER episodes

Management: Positioning and feeding

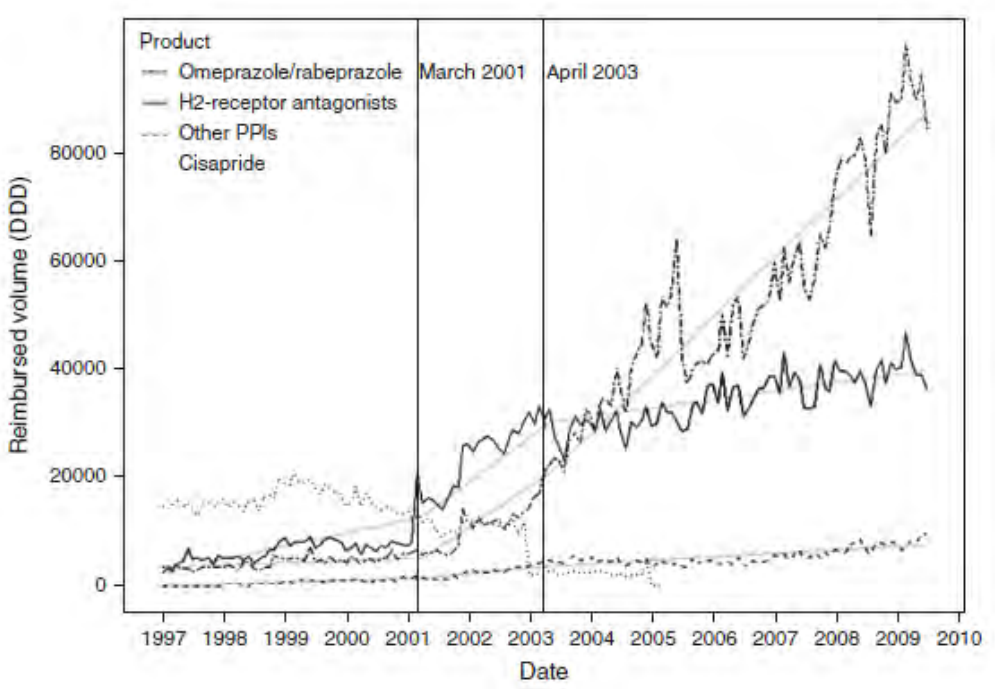




Thickening
1Tablespoon of cereal/oz of milk

Management: Role of Acid Suppression

- If using PPI use the smallest, most effective dose (0.5-1mg/kg/day)
- Wean after planned course of therapy
- Taper dose



Prokinetics

- Insufficient support to justify the routine use of motility agents (metoclopramide, erthromycin, bethanechol, or domperidone) for GERD.

- Metclopramide- **Black box** warning (Extrapyramidal symptoms)

Summary

- GER is common in healthy infants and usually resolves by 18 months of age
- Good history and clinical judgment are important for optimal evaluation and management
- Do not overuse PPI
- Be cautious when using prokinetics

ssehgal@childrensnational.org