Children's Hospital of Richmond at VCU

Infant reflux

Fast facts

- Up to 70% of healthy infants have reflux/physiologic regurgitation
  - Due to laxity of the lower esophageal sphincter (LES) in infants, allowing for more frequent GER
- Only a small number of infants experience problems due to GER
- Reflux can occur with anything that increased intraabdominal pressure– coughing, crying, or straining with BMs
- Physiologic infant reflux rarely starts before 1 week of age or after 6 months of age
- Most infant reflux resolves without intervention by age 6 months
- In the absences of concerning symptoms, testing and therapies, including acid suppression are NOT needed if there is no impact of the symptoms on feeding, growth and developmental milestones
- Mimickers of GERD in infants include cow's milk protein allergy (CMPA)
- Upper GI barium contrast study is not reliable for the diagnosis of GERD, but can be used to rule out anatomical contributors (e.g. antral web, duodenal web or stenosis, malrotation)
- If patient has projectile vomiting, and UGI is required

Background

Definitions

GER: passage of gastric contents into the esophagus with or without regurgitation and vomiting
GERD: when GER leads to troublesome symptoms and/or complications
Refractory GERD: GERD not responding to optimal treatment after 8 weeks

- Gastroesophageal reflux (**GER**) is defined as passage of gastric contents into the esophagus with or without regurgitation and/or vomiting.
- GER is deemed pathologic and referred to as gastroesophageal reflux disease (GERD) when the reflux leads to concerning symptoms or complications such as esophagitis or stricturing.
- In clinical practice, it can be challenging to differentiate GER and GERD.
- Proving that reflux causes symptoms is often difficult. This is especially true since many symptoms of GERD, including excessive crying, back arching, regurgitation and irritability, occur frequently in infants with and without GERD.

Symptoms may include:
Discomfort/irritability
FTT
Feeding refusal
Sandifer syndrome (dystonic neck posturing)
BRUE
Recurrent regurgitation
Hematemesis
Dysphagia/odynophagia
Airway symptoms (wheezing, stridor, cough, hoarseness)
** If excessive irritability and pain is the sole manifestation, unlikely to be related to GERD*

Assessment

Thorough history and exam, including:

- Age of symptom onset
  - Feeding history
  - Length of each feed and interval between feedings
  - Volume per feed
  - Type of formula
  - Mixing of formula
  - Breast milk supply, restriction of allergens, etc
- Pattern of regurgitation/vomiting (immediately post-prandial or long after a feeding)
- Prior pharmacologic and dietary interventions
- Review of growth chart
- Family history

Red flag symptoms:
Weight loss
Lethargy
Excessive irritability/pain
Onset of regurgitation/vomiting> 6 months of age
Increasing/persiting sx >12-18 months of age
Bulging fontanelle/rapidly increasing head circumference
Seizures
Macro/microcephaly
Persistent forceful vomiting
Bilious vomiting
Hematemesis
Chronic diarrhea
Rectal bleeding
Abdominal distension

Management/treatment

First Line:

1. Avoid overfeeding
2. Thickened feeds
   a. Rice can be used with formula but not breast milk (digested by amylases in breast milk). Use low or no arsenic rice cereal whenever possible.
   b. Breast milk can be thickened with carob bean based thickeners, but should be used with some caution. Carob bean thickeners are approved for infants >42 weeks gestation; xanthum gum thickeners are approved for infant >1 year of age secondary to NEC concerns.

Horvath A, Dziechciarz P, Szajewska H. The effect of thickened-feed interventions on gastroesophageal reflux in infants: systematic review and meta-analysis of randomized, controlled trials. Pediatrics 2008;122:e1268–77

Second Line:

- Trial of hydrolysate or amino acid based formula.
  - Regurgitation/vomiting in CMPA can be indistinguishable from GERD.
  - Therefore, a trial of hydrolyzate or amino acid based formula is recommended prior to a trial of acid suppression.
  - A breastfeeding mother should remove all dairy from her diet
  - It may take 2 weeks to see the full effect of the trial

Third Line:

- Referral to pediatric GI is recommended if infant reflux is refractory to above management
- Based on available data, it is uncertain whether PPI or H2RAs reduce crying/distress or signs/symptoms of GERD. Rate of side effects is also uncertain.

When to refer

- Alarm symptoms
- Patients refractory to optimal treatment
- Patients who cannot be weaned from medications within 6-12 months

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Management of infant with symptomatic reflux

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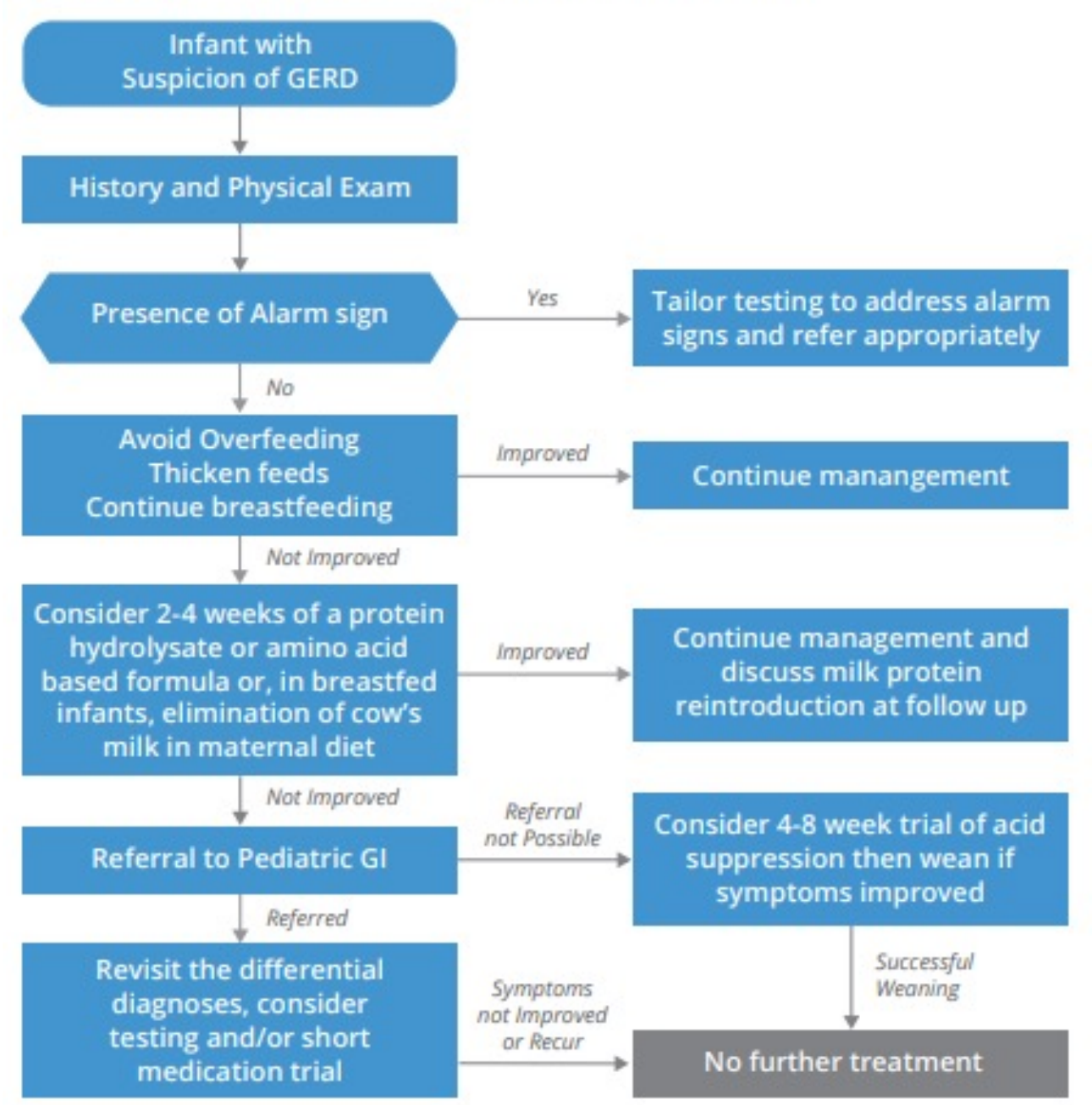

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