Managing Gastro-Oesophageal Reflux (GOR) in Infants Pathway

Infant presents with Gastro-Oesophageal Reflux

Are Red flag symptoms present?

Red Flags: *Require same day referral

- *Bile-stained vomit: *Frequent forceful (projectile) vomiting especially if <2m old
- *Blood in vomit or stool or maelana
- *Abdominal distention / chronic diarrhoea
- *Unwell child / fever / altered responsiveness
- *Bulging fontanelle / rapidly increasing head circumference
- *Unexplained Aponea
- *Infantile spasms
- Late onset (after 6monhts) Faltering growth
- Recurrent aspiration pneumonia

NO → Is infant showing marked distress?

YES → **Investigate or refer to secondary care using clinical judgement**

NO → **Reassure:**

· GOR is very common At least 40% infants have symptoms of reflux at some time

· Usually begins before 8 weeks

· May be frequent but usually becomes less frequent with time as the child moves onto solids and mobile.

· Does not usually need further investigation or treatment

YES → **Breastfed**

Breastfeeding assessment by trained professional Same positioning advice as for formula fed babies

Formula fed

1 Review feeding history, making up of formula, positioning…

Then

2 **Key to reduce feed volumes if excessive for infant's weight (>150mls/kg/day)**

Then

3 Offer trial of smaller, more frequent feeds (6-7 feeds/24hrs is the norm)

Then

4 Advise parent to purchase pre-thickened formula (need large hole/fast flow teat): Cow&Gate Anti-reflux®, HiPP Organic Anti-reflux, Aptamil Anti-reflux® (carob bean gum)

Or thickening agent to add to usual formula: **Instant Carobel®**

Or thickening formula (made up with cool water): SMA Pro Anti-reflux® (potato starch) Or Enfamil AR® (rice starch)

If **not** successful after 2 weeks

Consider CMPA

If using, STOP pre-thickened / thickening formulae or thickener

2 weeks trial of Infant Gaviscon®

Bottle fed: 1-2 doses* into 115mls (4oz) of feed

Breastfed: 1-2 doses* mixed up into a liquid (with cooled boiled water or expressed breastmilk) and given with a spoon

Infant Gaviscon®:

*1 dual sachet = 2 doses

If < 4.5kg, 1 dose

If > 4.5kg, 2 doses

- Prescribe with directions in terms of 'dose' to avoid errors
- Maximum 6 doses a day
- Omit if fever or diarrhoea
- Constipation common side effect

PPi /H_2RA can be initiated in primary care if alginate therapy is not working but it is best reserved if overt regurgitation **AND** Unexplained feeding difficulties **or** distressed behaviour **or** faltering growth administration guide below pg 2

If successful after 2 weeks → Try stopping it at regular interval for recovery assessment as GOR usually resolves spontaneously

If **not** successful after 2 weeks → -STOP medication if symptoms don't improve
- Consider CMPI
- Consider starting PPI as omeprazole MUPS or lansoprazole Orodispersible.
Review in 2 weeks and if no effect discuss with paediatrics

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PPI Administration

Omeprazole MUPS

https://www.medicinesforchildren.org.uk/omeprazole-gastro-oesophageal-reflux-disease-gord

Lansoprazole Orodispersable

Administration to children under 1 year who are not spoon fed

1) Take the oral syringe and pull the plunger out of the barrel.

2) Take …… lansoprazole ……mg orodispersible tablet(s) and place inside the barrel of the oral syringe. Do not crush the tablet.

3) If a 7.5mg dose (half a tablet) or 3.75mg (quarter of a tablet) is required, cut a 15mg tablet in half or quarters using the tablet splitter / cutter provided as directed.

4) Replace plunger and draw up 10ml of water (tap water should be boiled and cooled for children under 6 months of age).

5) Gently shake the oral syringe until a very cloudy mixture is created. This may take 5 to 10 minutes.

The orodispersible tablets 'disperse' or breakdown into pellets, rather than dissolving completely. This is why it is not possible to dissolve a whole tablet in 10ml of water and then use a portion.

6) Direct the oral syringe towards the inside of the child's cheek and slowly push the plunger until the dose is given.

7) If some of the dispersed tablet is still left, draw a further small amount of water up into the oral syringe, shake and give as above to the child.

8) Pull apart the oral syringe and clean as directed.

Gastro-Oesophageal Reflux (GOR) and Gastro-Oesophageal Reflux Disease (GORD)

Full NICE guidance: www.nice.org.uk/guidance/ng1

Background

- Passive regurgitation of stomach contents into the oesophagus is a **normal** finding in infancy. Most is swallowed back into the stomach but occasionally it appears in the mouth or comes out as non forceful regurgitation. At least 40% of infants will have symptoms of reflux at some time.
- Reflux will often improve by 6-8 months but it is not unusual for an otherwise well child to continue to have intermittent effortless regurgitation up to 18 months.
- Parents/carers should seek urgent medical attention if :
  - regurgitation becomes persistently projectile
  - There is bile-stained (green or yellow-green) or blood in vomit
  - There are new concerns (marked distressed, feeding difficulties, faltering growth)
- Possible complications of GOR are:
  - Reflux oesophagitis
  - Recurrent aspiration pneumonia
  - Frequent otitis media

GORD (Gastro-oesophageal reflux disease) is a diagnosis reserved for those infants who present with significant symptoms and/or failure to thrive.

- Prematurity, neurodisability, family history of heartburn, hiatus hernia, congenital oesophageal atresia are associated with an increased prevalence of GORD.
- Forceful vomiting should not be ascribed to reflux without closer review of the child's symptoms. Bilious (green) vomiting is always pathological and warrant urgent same day medical attention.
- GORD can sometimes be a sign of CMPA. The presence of eczema, a family history of allergy / atopy and additional gastrointestinal symptoms should prompt consideration of a cow's milk protein allergy. CMPA can occur in breast fed infants (see advice on CMPA).
- Consider UTI especially if faltering growth or late onset, or frequent regurgitation + marked distress.

Onward referrals

Referrals	Indications
Same day to Secondary Care	Worsening or forceful vomiting in infant <2months, Unexplained bile-stained vomiting Haematemesis or Maleana or Dysphagia Unexplained apnoea, Unexplained non---epileptic seizure---like events, Unexplained upper airway inflammation
Secondary Care	No improvement in regurgitation >1year old Persistent faltering growth secondary to regurgitation, Feeding aversion + regurgitation, Suspected recurrent aspiration pneumonia, Frequent otitis media, Suspected Sandifer's syndrome

Gastro-Oesophageal Reflux (GOR) and Gastro-Oesophageal Reflux Disease (GORD) - Additional notes

Management of GOR

- Do not use positional management in sleeping infants. They should be placed on their back.
- Starch-based thickeners (Thick&Easy®, Nutilis®, Resource thicken up®…) are not suitable for children under 1 year (unless faltering growth/recommended by Paediatric specialist).
- Pro motility agents such as domperidone should not be initiated in primary care. There is no evidence of benefit when treating infantile GOR. They can cause paradoxical vomiting and have been associated with a risk of cardiac side effects.

Formulae available

OVER THE COUNTER formula thickener Not to be used with thickening formula or Infant Gaviscon®		
Instant Carobel® (add to expressed breastmilk or formula)	From birth	Contains carob seed flour *May cause loose stools*
OVER THE COUNTER pre-thickened formulae Not to be used with thickener or Infant Gaviscon®		
Cow & Gate® Anti-reflux (Cow &Gate)	Birth to 1 year	Contains carob gum
Aptamil® Anti-reflux (Milupa)	Birth to 1 year	Contains carob gum
OVER THE COUNTER thickening formulae Not to be used with thickener or Infant Gaviscon®		
SMA Stay Down® (SMA)	Birth to 18 months	Contains corn starch
Enfamil AR® (Mead Johnson)	Birth to 18 months	Contains rice starch

- Over the counter thickeners / thickened formulae contain carob gum. This produces a thickened formula and will require the use of a large hole (fast-flow) teat.
- Thickening formulae react with stomach acids, thickening in the stomach rather than the bottle so there is no need to use a large hole (fast-flow) teat. However thickening formula need to be prepared with **cooled** pre-boiled water, which is against recommendation of using boiled water cooled to 70°C. There is therefore an **increased risk** of bacteria being present in the milk. This risk should be assessed by a medical practitioner.
- **Thickening formulae should not be used in conjunction with separate thickeners or with medication** such as Infant Gaviscon®, antacids (e.g. Ranitidine), or with proton pump inhibitors.

Gaviscon

Alginate therapy may cause a change in the baby's stool, and in some instance constipation.

Resources for parents and health professionals

- NICE guidelines NG1: GORD in children and young people. January 2015
- Living with reflux website: www.livingwithreflux.org/ includes a Facebook support page

- For breast feeding and bottle feeding advice, visit the UNICEF baby friendly pages: www.unicef.org.uk/BabyFriendly/
  - Bottle feeding leaflet www.unicef.org.uk/babyfriendly/baby-friendly-resources/leaflets-and-posters/guide-to-bottle-feeding/
  - Breastfeeding leaflet www.unicef.org.uk/Documents/Baby_Friendly/Leaflets/otbs_leaflet.pdf
  - Breast feeding counsellors directory provided by the NCT, or Southern Health NHS Foundation Trust: www.nct.org.uk/branches or www.southernhealth.nhs.uk/services/childrens services/breastfeeding service/

Distinguishing reflux from CMPA

Reflux	CMPA
Recurrent vomiting (up to 2hrs after feeding)	Recurrent vomiting (up to 2hrs after feeding)
Frequent crying, irritability or back arching during or after feeding, feed refusal	Frequent crying, irritability or back arching during or after feeding, feed refusal
Dysphagia, frequent choking after feed	Dysphagia, frequent choking after feed
Sleeping difficulties	Sleeping difficulties
Faltering growth	Faltering growth
Stridor, hoarseness	Stridor, Hoarseness (immediate onset only)
Reflux oesophagitis	Eosinophilic oesophagitis (rare)
Epigastric pain, heartburn	Abdominal distention, bloating
Sinusitis, recurrent otitis media	Nasal congestion, runny nose
More settled when upright	Positioning makes little difference
Bronchitis, recurrent aspiration pneumonia	Atopic conditions
	Projectile vomiting
	Diarrhoea or constipation, offensive stools, mucus or blood in stools