

Gastro-Oesophageal Reflux in Infants Management Guidelines in Primary and Secondary Care

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CONSULTATION PROCESS

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1.0 **OBJECTIVES**

To provide guidance for Primary Care health professionals to identify, manage and appropriately refer infants with symptoms of Gastro-Oesophageal Reflux (GOR). The rationale being to attempt to reduce the impact of Gastro-Oesophageal Reflux Disease (GORD) and subsequent referral to secondary care services.

To provide guidance for Secondary Care practitioners to appropriately manage and treat the symptoms of GORD where initial measures have been unsuccessful.

This guidance has been developed in consultation with the Royal United Hospital, Bath.

2.0 **DEFINITIONS**

Gastro-oesophageal reflux (GOR) is the involuntary regurgitation of gastric contents.

Gastro-oesophageal reflux disease (GORD) is when the above develops complications.

3.0 **EPIDEMIOLOGY**

- Very common in up to 50% of infants.
- Usually starts between birth and 3 months. It almost always resolves between 6 and 12 months.
- Data from the Avon Longitudinal Study of Parents and Children (ALSPAC) study documented an incidence of 6% at 6 months and 2% at 18 months based on clinical history.

4.0 **CLINICAL FEATURES ASSOCIATED WITH GORD**

- Persistent, effortless vomiting or possetting
- Feeding difficulties
- Weight loss or faltering growth
- Oesophagitis symptoms e.g. irritability, back arching, feed refusal, haematemesis
- Some babies have 'silent reflux' with oesophagitis symptoms but no vomiting. A trial of reflux treatment (particularly ranitidine or Omeprazole) may be helpful to exclude this.
- Respiratory problems e.g. cough, chestiness
- Apnoeas

5.0 **DIFFERENTIAL DIAGNOSES**

- Pyloric stenosis – projectile vomiting usually presenting between 3-6 weeks and getting progressively worse

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- Infection eg UTI. Child unwell or poor growth. May have fever.
- Malrotations – vomit often bile (green) stained
- Cows milk or other food protein (eg soya) allergy. Often have diarrhoea, eczema, urticaria
- Rare causes: Raised intracranial pressure, metabolic disease, drug toxicity e.g. digoxin.
- Tongue-tied breast fed babies (often take in greater volumes of milk as they are less able to access fatty components resulting in gastric overload).
- Breast milk oversupply or forceful let-down. May be linked to tongue-tie, or be the result of not allowing the baby to determine the length of time he spends at each breast.

6.0 INITIAL MANAGEMENT OF GASTRO-OESOPHAGEAL REFLUX DISEASE (also see attached flow chart Appendix B).

Actively encourage continued breastfeeding in this group. Human milk ameliorates this condition by quicker gastric emptying and promoting lower oesophageal pH.

Breastfed babies:

- Encourage mother to review breastfeeding management with Health Visitor or Breastfeeding Councillor
- Feed baby on cue, don't allow to become distressed before feeding
- Allow baby to feed from one breast for as long as he wishes (decrease in volume over time as fat content arises = lower gastric load)
- If over-supply is an issue, encourage mother to switch breasts every few hours rather than at every feed to allow supply to down-regulate
- Parental reassurance. Give parent information leaflet (attached) with explanation and advice eg Small frequent feeds, elevation of head of cot, upright position during/after feeds.
- Feed reduction in overfed babies formula-fed to 150ml/kg (2½ floz/lb) of body weight per 24 hours in 6-8 feeds.
- The main aim of any treatment is a happy thriving baby. It is not always possible or necessary to stop all the vomiting.
- Caring for a baby who is vomiting a lot and becoming distressed or in pain can be extremely difficult for families. If the baby is symptomatic do not persist for months with treatments which are not helping; try other suggested treatments or refer on as needed.
- Consider a trial of **thickening agents**:

Feed thickeners e.g. 'Carobel Instant' (Cow & Gate). If giving to a breast fed baby prepare the Carobel gel by mixing one level scoop of Carobel per 10-15 mls of expressed breast milk or boiled cooled water. Leave for 3–4 minutes to

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thicken then stir again. Offer the baby 1–2 teaspoons of Carobel gel from a sterilised plastic spoon before putting to the breast and again either half way through the breast feed or after changing to the second breast. The amount needed will vary between babies. Start with 1-2 scoops per feed and build up if needed (the datasheet suggests using 6 scoops). Carobel Instant can also be used to thicken formula milks and other liquids.

Pre-thickened anti-regurgitation infant formula for bottle fed babies (eg 'SMA Staydown' or 'Enfamil AR'). These thicken on contact with acid in the stomach decreasing regurgitation episodes but there is no evidence of benefit with respect to acid exposure of the oesophageal mucosa. Carobel can also be used to thicken infant formula. The instructions for making up these milks differ from normal milks so make sure parents read the instructions

Review effect after 1-2 weeks (eg with Health visitor)

A minority of babies will develop diarrhoea on milk thickeners.

- Consider the use of **Gaviscon[®] Infant** (but stop thickeners/ thickened formula). This is added to milk in a bottle (a faster flow teat may be required) or mixed with 15mls of water or milk and given before a feed on a spoon to breast fed babies.

Gaviscon[®] Infant Dosage:

Body weight under 4.5kg: 1 dose (half a dual sachet) up to 6 times in 24 hours

Over 4.5kg: 2 doses (1 dual sachet) up to 6 times (12 doses) in 24 hours.

Review effect after 1-2 weeks

The evidence for both Gaviscon[®] Infant and feed thickeners is not strong but their side effect profile is good and there is ample anecdotal evidence of them being helpful so they remain first line choices. If babies are having significant symptoms which do not improve on these treatments and with practical advice they should be offered alternatives within a few weeks.

- **Thickeners and Gaviscon are more difficult to give to breast fed babies so these infants may need to be offered alternatives such as Ranitidine earlier.**

If not improving consider the use of **Ranitidine**, initially for a 4 week trial:

Ranitidine dosage: (Off-label prescribing of licensed product under 3 years old see British National Formulary BNF for details). Available as syrup 75mg/5ml

Under 6 months: 1-3mg/kg three times daily

Over 6 months: 2-4mg/kg twice daily. Max 150mg/dose.

Refer to current CBNF for full prescribing information.

It is best given at a separate time from Gaviscon.

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- Stop treatments every 6-8 weeks to reassess as most babies will outgrow their GORD. Empower parents to restart the treatment if significant symptoms return.
- Refer to general paediatrics if not improving with these treatments or there are ongoing concerns re weight gain or other symptoms.

7.0 **MANAGEMENT OF GORD REFERRED TO SECONDARY CARE**

- Reconsider the diagnosis** The clinical history and examination is normally sufficient to make a diagnosis of GORD. Occasionally a pH probe will be helpful. This requires referral to Bristol Children's Hospital.
- Remind families that the aim of treatment is to stop complications** of pain, feeding problems etc. It may not be possible to stop the vomiting completely.
- Review simple measures tried** eg. frequent small feeds, cot elevation etc (see above). Check the volume of feed given is appropriate.
- Optimise current medical therapy.** Maximise doses of ranitidine according to weight, refer to current Children's British National Formulary (CBNF).

If milk thickeners have not been tried add these in, (not in combination with gaviscon/ thickening agents as this can form stomach bezoars).

If already on thickeners but still having problems this can sometimes be because the thickeners can reduce number of episodes but prolonging the duration of remaining ones so try stopping them.

- Consider cow's milk protein intolerance.** This is a cause of GORD in a proportion of babies not responding to first line treatments. Consider prescribing a 1-2 week trial of a hypoallergenic milk such as nutramigen (Give advice re milk-free solids if appropriate). Breast feeding mums can trial a milk-free diet under dietician supervision. Most will be able to successfully reintroduce milk starting initially with small amounts of cooked milk (eg 1/8 malted milk biscuit) at the end of the first year. A cow's milk free diet sheet drawn up by a registered dietician is available from voluntary breastfeeding councillors.
- If no obvious improvements in 1-2 weeks, switch back to normal milk.**
- If improvement and staying on a milk-free diet,** refer to the paediatric dieticians for ongoing advice. Most will be able to successfully reintroduce milk by the end of the first year.

A negative skin prick tests or specific IgE (RASTS) does not rule out cows milk as the cause of the reflux.

Lactose intolerance tends to cause diarrhoea, abdominal pain and wind rather than reflux in infants (so consider in 'silent refluxers' – 1-2 week trial of lactose free milk if bottle fed).

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viii. Change from ranitidine to Omeprazole. Try this for 4-6 weeks then increasing to the highest dose if needed.

Only available as capsules/tablets – Capsule contents can be mixed with fruit juice or yoghurt as per current CBNF recommendation. Losec MUPS® can disperse in water. If giving via a NGT/gastrostomy prescribe as Losec MUPS® and dissolve in 10ml 8.4% bicarbonate solution so that tube does not block. Tablets should not be crushed ref: Handbook of Drug Administration via Enteral Feeding Tubes (White and Bradnam 2006).

Dosage: (Off-label prescribing of licensed product, see CBNF for details)

1 month to 2 years: 700 micrograms/kg once daily, increasing if needed to 3mg/kg (max 20mg)

Child weight 10-20kg 10-20mg once daily (max 12 weeks at higher dose)

Child weight over 20kg 20-40mg once daily (max 12 weeks at higher dose)

ix. Consider prokinetic drugs to improve gastric emptying eg Domperidone, erythromycin. Evidence for their effectiveness is limited but some children do seem to respond. See BNFC for dosages

x. If symptoms persist despite maximum treatment review the diagnosis again including looking for factors such as neuromuscular disease or malrotation. Consider referral to Bristol Children's Hospital to paediatric gastroenterology for further assessment and for consideration of surgical **fundoplication**.

xi If symptoms improve stop treatments one at a time every 6-8 weeks as most babies will outgrow their reflux. Ensure parents know they can restart treatment if symptoms relapse. For some children with severe symptoms it is reasonable to continue treatment for longer before reducing for example until the child is taking more solids or until more upright posture.

8.0 REFERENCES

BNF for Children website at <http://bnfc.org>

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What is GOR?

Gastro-Oesophageal Reflux (GOR) may also be referred to as Infant Reflux or simply, Reflux. It is the regurgitation of the baby's stomach contents; usually milk, back up the oesophagus [food pipe]. It usually starts soon after birth, and almost always resolves between 6-12 months of age. Reflux is a **very common** problem.

Signs and Symptoms:

- Frequent, effortless vomiting, during or after feeds
- Frequent coughing/hiccups
- Swallowing/Gulping after burping, back arching
- Unexplained pain/discomfort, particularly during or after feeding (although the most likely explanation for discomfort and irritability in babies under 3 months old is colic)
- **If, at any point, your baby appears unwell, seek medical attention**

How can I help my baby?

Most babies' symptoms will improve with very simple changes:

- Feed baby on cue; don't allow him to become distressed before a feed
- Breastfeeding-Allow baby to feed from one breast for as long as he wishes – this helps him feed for comfort without getting overfull. If you seem to have too much milk, try switching breasts every few hours rather than at every feed to allow your supply to adjust.
- Feeding your baby in an **upright** position and helping him/her to stay as upright as possible for as long as possible after a feed

- Giving **smaller**, more frequent feeds, particularly bottle-fed babies. Whatever s/he takes at the moment, make the feeds smaller (even if that means feeding every 1½ hours to begin with). Your health visitor can advise a suitable amount
- Placing your baby on his/her tummy or side to sleep is **not** recommended, but is encouraged when s/he is awake

It may be helpful to review how your baby feeds with your Health Visitor or breastfeeding counsellor.

Following these simple tips can show an improvement in many babies' symptoms in 2 weeks. It is important to know however, that it is normal for all babies to bring back small amounts of milk, known as possetting, this may continue without a problem.

Will my baby need treatment?

If your baby is happy and growing well despite the vomiting, treatment may not be needed. If however, after making the above changes for 2 weeks you have seen no improvement to your baby's symptoms then there are treatments available that may help.

- Breast fed babies may be given a feed thickener such as Carobel. This can be mixed with Expressed Breast Milk (EBM) or water immediately before breastfeeding.
- Bottle fed babies can either be given a thickener mixed with their formula or a pre-thickened formula, such as SMA Staydown or Enfamil AR.

Whichever treatment you choose, it is important to allow 2 weeks for it to begin to make an improvement. Many babies respond well to the above thickeners. Both Carobel and the pre-thickened formulae are available to buy over the counter or on prescription and should be used under the guidance of your Health Visitor or GP.

There is no change, what next?

- Your GP may prescribe Infant Gaviscon. This is a thickener as well as a mild antacid. It should **not** be given with any of the above thickeners.

If, after 2 weeks using Infant Gaviscon, there is still no improvement:

- Your GP may prescribe Ranitidine. Ranitidine is an antacid that works to reduce the acid in the stomach. It may not reduce the vomiting initially, and will need **4 weeks** to show a real improvement.

Why 4 weeks?

The acid in the reflux will have inflamed or irritated your baby's food pipe (oesophagus) and the sphincter muscle that works to keep the stomach contents in the stomach. This inflammation needs to heal to allow it to work properly. The Ranitidine will reduce the acid in the reflux and allow the healing to begin. Once healed, the sphincter muscle should start to work properly, allowing the vomiting to reduce. If Ranitidine does not help, your GP may refer your baby to a Paediatrician.

The aim of treatment is to have a happy growing baby. It will not always be possible to stop all the vomiting but it should reduce.

Contacts

If you need further information on reflux, please contact your Health Visitor or GP.

If you would like this leaflet in another format or language, contact NHS Bath and North East Somerset Children's Services 01225 831565.

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Please note that this guidance has been developed with the RUH dietetics department.

Gastro-Oesophageal Reflux (GOR)

APPENDIX B

Gastro-Oesophageal Reflux in Infants Management Algorithm in Primary Care: Health Visitors & GPs To be used in conjunction with written guideline.

Infant presents with a history of persistent, non-projectile vomiting in the first 3 months

