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Gastro Oesophageal Reflux (GOR) and GORD in infants

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Some gastro-oesophageal reflux (GOR) occurs in most babies. Up to 40-50% of babies younger than 3 months regurgitate their feeds at least once a day (Craig 2004). Incidence peaks around 4 months. GOR is a normal physiological process that usually happens after eating in healthy infants, children, young people and adults. Most of us are familiar with it in the later stages of pregnancy. In reflux there is no retching as associated with a gastric infection, milk simply comes up and out of the baby's mouth.

Symptoms

The predominant symptom is frequent regurgitation of feeds (possetting). Diagnosis is usually made by description of symptoms. Other signs include:

- Irritability or excessive crying
- Recurrent hiccups
- Frequent night waking
- Frequent coughing.

Studies show that frequency of regurgitation declines over the first 6 months and dramatically after 12 months (NICE 2015). This interestingly corresponds with the time when babies can sit and stand.

Regurgitation of at least 1 episode a day with age (Nelson 1997)

| age | percentage |
|------|------------|
| 0-3m | 50 |
| 4m | 67 |
| 6m | 61 |
| 7m | 21 |
| 12m | 5 |

To speak to a Breastfeeding Supporter call the National Breastfeeding Helpline 0300 100 0212

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NICE 2015 recommends to healthcare professionals that GOR is a normal physiological process in infancy. Parents should be reassured that it does not need any investigation or treatment unless the child presents with symptoms such as unexplained feeding difficulties, distressed behaviour, or faltering growth. Overfeeding is a common cause in artificially-fed infants who may benefit from smaller, more frequent bottles.

Silent Reflux

Silent reflux is described as reflux where the regurgitation is swallowed rather than being spat out. Babies may cry and show signs of distress but not posset. Symptoms may otherwise be identical to GOR.

Managing reflux symptoms

Most cases of reflux clear up without intervention but simple changes can help reduce symptoms.

- Feed more frequently and respond at the baby's first cues that he/she is hungry – crying is a late sign of hunger and will increase the air swallowed making regurgitation of feeds more likely. Scheduling feeds with longer intervals and larger volumes may increase symptoms.
- Keep the baby upright after feeds over your shoulder ideally for at least 30 minutes with a muslin to catch milk if necessary
- Using a sling to keep the baby upright may help but ensure there is no pressure on the stomach and do not bend yourself
- Do not put the baby down in a car seat where they become somewhat slumped. Try not to jiggle or move the baby too much as the feed settles
- Take time to burp the baby in a sitting position with his/her head supported with your hand – be prepared with a muslin cloth over your shoulder and a bib on the baby to protect clothing (and reduce washing!)
- Put the baby to sleep flat on his or her back. You can raise the whole of the top of the crib but do not use pillows etc. to raise the head of the baby.
- Ensure that breastfeeding has been optimised to ensure the baby has access to all the milk and that your breasts are well drained after a breastfeed (Woolridge 1988).

Caring for a baby with reflux is difficult, exhausting and confusing. It may be isolating as you may be concerned about the baby vomiting when outside the family home. Do you have enough changes of clothes for yourself and the baby? What will other people say? What if the regurgitated milk goes onto someone or something else?

Treatment for GOR

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With GOR, medication is not essential. However you may wish to try remedies to relieve symptoms of excessive crying and possetting in the baby. Medication should not be commenced without support by an expert in breastfeeding to optimise attachment.

If frequent regurgitation associated with marked distress, continues despite a breastfeeding assessment and advice, NICE recommends that alginate therapy can be considered for a trial period of 1–2 weeks. If the alginate therapy (Gaviscon Infant sachets ®) is successful continue with it, but it should be stopped at intervals to see if the infant has recovered as we know that it may resolve with time as described above.

The sachets of alginate should be dissolved in water or expressed breastmilk as described below.

Side effects Alginates, such as Gaviscon®, can cause constipation in the baby as they thicken the gastric contents. This may cause further distress to the baby and anecdotally can lead to prescription of bulk forming laxatives in addition to the alginate. This is inappropriate and symptoms would be better managed with other drugs

Dose: infant body-weight under 4.5 kg, 1 'dose (sachet)' mixed with feeds (or water in breast-fed infants) when required (max. 6 times in 24 hours); body-weight over 4.5 kg, 2 'doses' mixed with feeds (or water in breast-fed infants) when required (max. 6 times in 24 hours);

Manufacturer Gaviscon® directions: Bottle fed infants; Mix each sachet into 115ml (4 fl oz) of feed in the bottle and shake well before feeding as normal. Breast fed infants and other infants up to 2 years mix each sachet with 5ml (1 teaspoon) of cooled boiled water until a smooth paste is formed, add another 10ml (2 teaspoons) of cooled boiled water and mix. For breast fed infants give Gaviscon Infant® part way through each feed or meal using a spoon or feeding bottle.

Gastro-oesophageal Reflux Disease (GORD)

Symptoms:

- The baby is not gaining weight
- The baby vomits frequently and forcefully
- The baby spits up green or yellow fluid
- The baby spits up a liquid which looks like coffee grounds
- The baby repeatedly refuses feeds
- The baby has blood in the bowel motions

It is reported by Salvatore (2002) that in up to half of the cases of GORD in infants younger than 1 year, there may be an association with Cow's Milk Protein Allergy. Heine (2006) noted that infants with these conditions often respond to hypoallergenic formula or a maternal elimination diet but that only a few randomized clinical trials have been conducted.

Treatment first line is with alginate but may be replaced with a 4 week trial of the H2 antagonist ranitidine or Proton pump Inhibitor (PPI) Omeprazole. NICE 2015 recommends that metoclopramide, domperidone or erythromycin to treat GOR or GORD are not

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prescribed without seeking specialist advice and taking into account their potential to cause adverse events.

Ranitidine is licensed to treat Reflux oesophagitis. Studies have suggested that H₂ antagonists are effective in treating children with GORD. Ranitidine is well tolerated and has a low incidence of side effects. Common side effects include fatigue, dizziness and diarrhoea. (Cucchiara 1993). Ranitidine is the H₂ antagonist used most commonly to reduce the acidity of GORD. Cimetidine is rarely used, as concerns surround its effects on cytochrome P450, leading to multiple drug interactions.

Dose (BNFC May 2015):

Neonate 2 mg/kg 3 times daily but absorption unreliable; max. 3 mg/kg 3 times daily

Child 1–6 months 1 mg/kg 3 times daily; max. 3 mg/kg 3 times daily

Child 6 months–3 years 2–4 mg/kg twice daily

An oral solution is available and can be provided as a sugar free formulation. Anecdotally some babies refuse to take the solution with an alcohol content so it is worth asking the dispensing pharmacist to check the excipients.

The 2014 Cochrane review concluded that "Moderate evidence was found to support the use of PPIs, along with some evidence to support the use of H₂ antagonists in older children with GORD, based on improvement in symptom scores, pH indices and endoscopic/histological appearances. However, lack of independent placebo-controlled and head-to-head trials makes conclusions as to relative efficacy difficult to determine. Further RCTs are recommended".

Omeprazole is licensed to treat GORD. It is usually dispensed as Losec MUPS® to be dissolved in water as directed.

Dose (BNFC May 2015):

Neonate 700 micrograms/kg once daily, increased if necessary after 7–14 days to 1.4 mg/kg; some neonates may require up to 2.8 mg/kg once daily

Child 1 month–2 years 700 micrograms/kg once daily, increased if necessary to 3 mg/kg (max. 20 mg) once daily

Child body-weight 10–20 kg 10 mg once daily increased if necessary to 20 mg once daily (in severe ulcerating reflux oesophagitis, max. 12 weeks at higher dose)

Child body-weight over 20 kg 20 mg once daily increased if necessary to 40 mg once daily (in severe ulcerating reflux oesophagitis, max. 12 weeks at higher dose)

Studies of omeprazole and lansoprazole in infants with functional GOR have demonstrated variable benefit, probably because of differences in inclusion criteria (Cochrane 2014)

Cost to NHS (NICE 2015)

| | Cost per month (£) |
|---|--------------------|
| Oral alginate formulations (cost given for Gaviscon Infant) | 22.14 |
| Ranitidine 75mg/5ml (liquid) | 2.82 |

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| | |
|--|------|
| Omeprazole oral formulations (cost given for Omeprazole 10mg dispersible gastro-resistant tablets (LOSEC MUPS) | 8.30 |
|--|------|

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