NHS
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Referral Support Service

Paediatrics

PA29 Gastro-Oesophageal Reflux

Paediatric Normal Values (adapted from APLS)			
Age	Resp Rate	Heart Rate	Systolic BP
Neonate <4w	40-60	120-160	>60
Infant <1 y	30-40	110-160	70-90
Toddler 1-2 yrs	25-35	100-150	75-95
2-5 yrs	25-30	95-140	85-100

Definition

Gastro-oeophageal reflux: the passage of gastric contents into the oesophagus. It is a common physiological event that can happen at all ages and is often asymptomatic.

Gastro-oesophageal reflux disease: gastro-oesophageal reflux which leads to symptoms severe enough to merit medical treatments or lead to complications such as oesophagitis or pulmonary aspiration.

Exclude Red Flag Symptoms

- Faltering growth
- Hepatosplenomegaly

Clinical Feature	Possible diagnosis	Action
Abdominal distension, tenderness or palpable mass	Intestinal obstruction	Same day
Bile-stained vomit	Intestinal obstruction	URGENT same day
Frequent, forceful vomiting	Hypertrophic pyloric stenosis in infants ≤ 2m	Same day if unwell, or rapid access clinic
Haematemesis	Bleed from oesophagus, stomach or upper GI tract	Same day if unwell, or rapid access clinic
Blood in stool	Bacterial gastroenteritis Cows milk protein allergy Acute surgical condition	Stool for MC&S Same day if unwell, or rapid access clinic
Chronic diarrhoea	Cows milk protein allergy	Assess as per guidelines
Onset >6m or persisting >1y	Urinary tract infection	Urine dip
Altered responsiveness, irritability	Illness such as meningitis Safeguarding – occult head injury	URGENT same day
Bulging fontanelle	Raised intracranial, pressure e.g. meningitis	URGENT same day
Rapidly increased head circumference, seizures	Raised intracranial pressure, e.g. hydrocephalus, brain tumour Sandifer syndrome	Same day if unwell, or rapid access clinic

Unwell, fever	May suggest infection	Assess as per NICE traffic light
Dysuria	Urinary tract infection	Clinical assessment and urine dip
High risk atopy	Cows milk protein allergy	Assess as per guidelines
Recurrent pneumonia	Tracheoesophageal fistula	Same day if unwell, or rapid access clinic
Aspiration	Laryngotracheal cleft	Same day if unwell, or rapid access clinic
Hypo- or hypertonia	Cerebral palsy	Same day if unwell, or rapid access clinic
Stigmata of genetic disorder	Trisomy 21	Same day if unwell, or rapid access clinic

High risk of GORD

- Premature birth
- Parental history of GORD
- Obesity
- Hiatus hernia
- History of congenital diaphragmatic hernia (repaired)
- History of congenital oesophageal atresia (repaired)
- Neurodisability

General Points

- Affects 40% of infants
- Usually begins before the infant is 8 weeks old
- Transient lower oesophageal sphincter relaxations have been shown to be the predominant mechanism of reflux
- Signs and symptoms of possible regurgitation, reflux and colic are rarely associated with any underlying pathology in infants who are gaining weight and developing normally.
- Only a small proportion will need to be clinically managed as GORD
- Symptoms in infants typically resolve without treatment (resolves in 90% by 1 year)

Differential Diagnoses

- Safeguarding – persistent irritability and vomiting may be a sign of occult head injury. You must document head circumference every time you see an infant
- Intestinal obstruction – bile-stained vomit
- Hypertophic pyloric stenosis – frequent, forceful vomiting

Investigations

Usually investigations aren't indicated for GOR, therefore most children will not require any investigations.

Management

Key principles

- Do NOT recommend positional management to treat GOR in sleeping infants. Infants should be placed on their back when sleeping.
- Keep baby upright for as long as possible after feeds
- Baby-wearing (use of slings/carriers)
- Avoid tobacco smoke exposure
- Encourage breastfeeding

Formula Fed Infants

- Formula fed, check for overfeeding: normal volume of feed in 100-150ml/kg/d
- If excessive, reduce feed volumes for infants weight (>150ml/kg/d)
- If normal feed volume, suggest smaller volume, more frequent feeds (6-7 feeds/24h)

Thickened Formula

- Thickened formulae reacts with stomach acid, thickening in the stomach rather than the bottle so there is no need for a fast-flow teat.
- Thickened formula needs to be prepared with cooled pre-boiled water, which is against recommendation of using boiled water to make the milk which is then cooled to 70°C
- Consider trial of thickened formula for 2 weeks
    - If no improvement after 2 weeks stop
    - If improvement continue for 3m or until weaning

Carobel: first line option to thicken feeds. It enables easy reassessment of ongoing need as it can easily be omitted from periodic feeds.

- Add ½ scoop to 90ml cooled boiled water (still warm). Shake well and leave to thickened for 3-4 minutes
- Shake again and feed
- Thickness can be increased using 1 scoop in 60ml
- These thicken in the bottle, so need to be given with a fast-flow teat
- Do not prescribe Gaviscon concurrently with a thickening agent

Evidence of benefit for thickeners is mixed. They may delay gastric emptying.

Breast Fed Infants

- Skilled breastfeeding assessment
- Breastfeeding should not be stopped for the purposes of thickening feeds

Medication

- Evidence suggests acid-suppressing medications are not effective in infants for treatment of symptoms such as regurgitation and irritability
- NICE gives some recommendations for prescribing Gaviscon if conservative measures have failed

Infant Gaviscon: 1 dual sachet = 2 doses
<4.5kg: 1 dose when required up to a maximum of 6 times in 24 hours
>4.5kg: 2 doses when required up to a maximum of 6 times in 24 hours

Bottle fed: Mix in 115ml (4oz) of feed
Breast fed: Mix into cooled boiled water or expressed breastmilk and give with a spoon

N.B. prescribed with directions in terms of 'dose' to avoid errors. Many notice their baby's stool becomes firmer.

If no improvement after 2 weeks, consider Cow's milk protein allergy (CMPA) or refer to paediatrician
If improvement after 2 weeks, try stopping at regular intervals for recovery assessment

Safety Netting
Advise parents they should return for review if any of the following occur

- Regurgitation becomes persistently projectile
- Bile-staining vomiting (green)
- Haematemesis (blood in vomit)
- New concerns such as marked distress, feeding difficulties or faltering growth
- Persistent, frequent regurgitation beyond the first year of life

Referral Information

Indications for referral

- No improvement in regurgitation >1y
- Persistent faltering growth secondary to regurgitation, feeding aversion and regurgitation
- Suspected recurrent aspiration pneumonia
- Frequent otitis media
- Suspected Sandifer syndrome
- Unexplained apnoea

Patient information leaflets/ PDAs

https://patient.info/childrens-health/childhood-gastro-oesophageal-reflux-leaflet

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