

Initial management of pyloric stenosis

Author: Mr S Paramalingam / Miss R Hallows / Ms J Sheth / Dr M Lazner / Mr C Chadwick. Approved by the Medicines Governance Group October 2019
 Publication date: October 2019
 Review date: October 2022

To skip straight to the post-op feeding plan, [click here](#)

Key points

1. Correction of fluid deficit, electrolyte and acid base abnormalities is the priority
2. Following fluid resuscitation (if required) 0.9% Sodium Chloride with 5% glucose and 10mmol / 500mls Potassium Chloride should be used for replacement of deficit and ongoing fluid maintenance.
3. Surgical correction should be delayed until correction of fluid deficit, electrolyte and acid base abnormalities.

Background

- Pyloric stenosis usually presents between 2 and 6 weeks of chronological age with progressive non-bilious vomiting.
- There may be a parental history of PS (especially if mother affected)

Assessment

History:

- ✓ Vomiting
 - Recurrent and progressively more forceful. May be projectile.
 - Soon after feeding
 - Non-bilious
 - Blood stained in up to 10% of cases
- ✓ Often hungry afterwards
- ✓ Weight loss or inadequate weight gain

Examination:

- ✓ Dehydration-
 - Assess degree of dehydration (see *medical dehydration guideline*)
- ✓ Visible Gastric peristalsis (may be more obvious following a feed)
- ✓ Pyloric mass
 - Located at the lateral edge of the rectus abdominis muscle in the right upper quadrant
 - Best felt from the left side with the infant settled and supine.
 - May be difficult to palpate. May require repeated examinations or to wait for several minutes with hand on abdomen to feel.

Investigations:

- Capillary blood gas with electrolytes and glucose
 - **Hypochloraemic hypokalaemic metabolic alkalosis** may be seen.
 - The degree of abnormality is proportionate to the duration of symptoms prior to presentation.
- If diagnosis is not established clinically, **abdominal ultrasound** should be used.

Management

Fluid Management (pre-correction)

- Stop oral feeds
- Gain IV access
- Insert a nasogastric tube

Purpose	Fluid	Volume to be given	Notes
Resuscitation	0.9% Sodium Chloride		Not always required
Maintenance + Deficit (pre-correction)	0.9% Sodium Chloride + 5% Dextrose + 10mmol potassium chloride /500mls	150mls/kg/24hrs	Check U&E and blood gases daily
+			
ml for ml replacement of gastric losses	0.9% Sodium Chloride +/- 10mmol potassium chloride/500mls		Check potassium on U&E and replace accordingly

- Repeat blood gas more frequently if significant abnormalities on initial samples
- Usually aim to fully correct fluid and electrolyte deficits within 48 hours.
 - Correction is achieved when:
 - ✓ Cl >100 mmols/L and
 - ✓ HCO3 < 28 mmols/L and
 - ✓ K >3.5 mmols/L

On achieving the above, convert to maintenance fluids (100 ml/kg/day) and book for emergency theatre.

Appendix 1.**Post-operative Pyloric feeding regime**

NB: Do not use this protocol if an intra-operative perforation has occurred

Immediately post op:

- Leave NG tube in situ
- IV fluids at 2/3 maintenance volume

Breast- fed babies:

- Babies can feed 2-4 hours post op if awake
- Offer a small feed initially, say 5 minutes and slowly increase to normal feeds depending on tolerance
- Advise mother to express some milk prior to first feed to avoid over-feeding.

Bottle fed babies:

- Commence feeds 2-4 hours post op if awake
- Feeds can be offered 2 hourly, calculate the appropriate amount for a single feed:
 - 50mls/kg/day full strength milk feed
 - 75mls/kg/day full strength milk feed
 - 100mls/kg/day full strength milk feed
 - 150mls/kg/day full strength milk feed

- Increase the amount as tolerated
- Quantity of feed can be repeated if vomited or not completed
- Consider 3 hourly feeds if the baby is settled
- Reduce the intravenous fluids when the baby has tolerated the 75mls/kg/day amount
- NG tube can be removed at the discretion of the nursing staff
- Remember that these babies may continue to vomit post-operatively. This is usually self- limiting and not harmful.

Author Lorelei Scott/Ruth Hallows. Updated July 2019