

## 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

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### 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
    - ✓ HCO<sub>3</sub> < 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.

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Author Lorelei Scott/Ruth Hallows. Updated July 2019