Gastroschisis Quick Reference Guide

Delivery Room Management

1. Assemble neonatal team and alert neonatal surgical registrar if time allows
    a. In working hours bleep surgical reg: **77 001, 9103**
    b. Out of hours bleep 77 001, 9107 surgical FY to give you contact details of the surgical reg
2. Read Neonatal Management plan on maternal Trak
3. Encourage delayed cord clamping to assist with transition
4. Keep umbilical cord long when clamped – at least 10cm, preferably longer
5. Place baby into plastic bag
6. Nurse on a right sided tilt to avoid traction on the bowel and blood vessels
7. Avoid positive pressure ventilation if possible (this includes mask PEEP)
8. Pass a large bore NG (size 8 if late preterm or 10 if baby term) and decompress the stomach regularly
9. If clinical condition of the baby allows, facilitate a delivery room cuddle

Immediate NICU Management

Prior to NICU admission (or whilst team is in Labour Ward):

- Inform neonatal consultant so they can attend
- Prepare the Giraffe Omni bed incubator if available (lid comes off, making procedures (eg, silo application and PICC line much easier)
- Prepare a canula trolley
- Read and follow the neonatal management plan on maternal Trak
- Phone surgical registrar – see above
- Obtain the 'gastroschisis box' from the clean utility
- Ensure a copy of IV Paracetamol monograph is available (can print from perinatal website)

1. **Immediate priorities on admission to ICU:**

General	
Weigh Place in incubator Standard NICU monitoring Remain in plastic bag until Silo application Nurse right sided tilt- roll under left side might be helpful Blood gas* (see notes below)	
Nursing	**Medical**
• Prepare IV paracetamol using West of Scotland monograph • Draw up 10ml/kg bolus of 0.9% sodium chloride • Prepare Vitamin K • Run through maintenance fluids • Aspirate NG tube 6 hourly • NG on free drainage • Prepare and give antibiotics (if appropriate) • Strict fluid balance	• Obtain peripheral venous access ○ Do not use long line veins • Obtain bloods ○ Day 1 blood spot ○ Group and save ○ Baseline FBC ○ Blood cultures • Create baby on Trak and Badger ○ Ensure the diagnosis of gastroschisis is entered on Badger • Prescribe medications ○ IV paracetamol (as a one off dose on front of kardex) ○ Vitamin K ○ PRN buccal sucrose ○ Antibiotics • Prescribe fluids ○ 10ml/kg fluid bolus (0.9% sodium chloride)[1] ○ Maintenance fluids (10% glucose)[2] ○ Replacement fluids[3]

* Early blood gas assesses

- Blood glucose - many babies will be late preterm and/or small, so are at risk of hypoglycaemia
- Lactate – can be helpful for a trend if the bowel appears dusky
- CO_2
    - **If any concerns about respiratory insufficiency, low threshold for intubation and ventilation**
        - Non-invasive ventilation is not ideal, and generally contraindicated in babies with gastroschisis due to risk of intestinal gaseous distension and resultant compromise to the blood flow to the bowel.

[1] Fluid bolus: 0.9% Sodium Chloride, 10ml/kg over 30 minutes

- Can be repeated if necessary
- Fluid losses are common in gastroschisis; anticipate and treat accordingly
    - NG losses – aspirate 6 hourly and keep NG on free drainage
    - Insensible losses from exposed bowel

[2] Commence maintenance IV fluids. 10% glucose will be sufficient for most babies as an initial fluid

[3] Replacement fluid should be 500ml bag of 0.9% Sodium Chloride with 10 mmol KCl and replacement of NG losses and silo losses should be ml for ml until surgical team inform us otherwise.

2. Assisting the Paediatric Surgical Consultant with silo application

The silo is a preformed silicone bag, which protects exposed bowel while it is being slowly reduced into the abdomen. There is therefore a closed environment for the intestines with minimal leak from the abdominal defect. The silo is placed soon after birth usually by the Paediatric Surgical Consultant, without the need for general anaesthesia. Analgesia with paracetamol is usually sufficient. Silo placement is suitable for almost all cases of gastroschisis.

Silo placement not appropriate if:

- active bleeding from bowel or mesentery
- perforation of bowel

In these instances, surgical management would be required in theatre.

Occasionally when there is no distension or oedema of the bowel primary reduction on the ward may be possible without silo placement. The same considerations with regard to necessary equipment, analgesia and personnel apply.

A rectal washout or PR examination may be undertaken prior to silo placement. This would be done by the surgical team and the purpose is to empty the rectum and sigmoid of meconium. The procedure of silo placement or reduction may potentially compromise ventilation and require the initiation of ventilatory support.

Important points to consider:

- Immediately report changes in colour of bowel
- CPAP is contraindicated in patients with gastroschisis as can cause abdominal distension

Equipment needed for Silo application:

- Ensure Gastroschisis box is at the appropriate cot side (see Appendix 1)
    - All the equipment needed for silo application should be in this box, or the surgical team will bring with them what they require
- When surgical team arrive, prepare gowns and appropriate size gloves
- Consent forms

Prepare baby:

- Thermal care (air boost, plastic bag, increase incubator temperature)
- Standard NICU monitoring
- Aspirate NG tube and leave on free drainage
- Ensure baby has had appropriate analgesia (see above)
    - One dose of IV paracetamol as a minimum, at least 30 minutes prior to silo placement
    - Buccal sucrose at the time of Silo placement (or buccal colostrum if available)
    - **Consider** the need for one dose of morphine
        - Suggest low dose of 50 micrograms/kg IV morphine

- Avoid large doses of morphine which may cause apnoea and result in the baby needing intubation and ventilation

If the silo cannot be placed following one dose of paracetamol (and one low dose of morphine), consider transfer to theatre for continuation of silo application. This decision should be made by the NICU consultant and the Paediatric Surgical Consultant.

3. Post silo management

Successful silo application:

- Silo application on the NICU is successful in most cases.
- Management of the baby includes strict fluid balance monitoring, especially of NG losses and fluid loss around the silo.
- These losses should be calculated every 6 hours (or every 3 hours if losses are large) and ml for ml replacement for ALL losses with 0.9% sodium chloride and added potassium chloride.
- Ensure the silo application is documented on Badger under Procedures > Gastroschisis Surgery.

Unsuccessful silo application or bowel compromised – baby will need to go to the operating theatre for definitive surgical management under general anaesthesia

- Neonatal consultant to be informed, if not already present
- Prepare transport shuttle
- Site second IV canula
- Update parents, ideally with surgical team

Appendix 1: Contents of the Gastroschisis box

- Standard surgical procedure tray from theatre
- Silo pouch of various sizes; 3,3.5,4, 4.5, 5
- Silcone adhesive dressing (part of sterile silo pack)
- Large sterile drape
- Warmed sterile saline (to clean bowel)
- Betadine skin prep
- Tegaderm dressings x4
- Sterile gloves and gowns
- 2/0 Silk tie Cord clamp cutter
- White tape for hanging silo – this must not be attached to the lid

For rectal washout

- Normal saline (warmed, approx 100ml)

- Foil bowl
- Jacques catheter (size 10 or 12 –available in theatre)
- Catheter tip syringe