

# Replacement of Neonatal Gastrointestinal Losses

## Introduction

Naso-gastric, stoma, or salivary fluid loss needs to be replaced once the volume exceeds 20ml/kg in a 24 hour period, in order to prevent complications due to dehydration, electrolyte imbalance, and failure to thrive.

IF THE PATIENT HAS PYLORIC STENOSIS, REFER TO THE SEPARATE GUIDELINE

## Aim

The aim of this guideline is to outline the principles of management for infants requiring replacement of gastrointestinal losses for nursing & medical staff on the Newborn Intensive Care (Butterfly) Ward at the Royal Children's Hospital.

## Definition of Terms

- **Stoma:** A surgically constructed opening, often in the abdominal wall, that connects a portion of a body cavity to the outside environment
- **Ileostomy:** An opening into the ileum, part of the small intestine, from the outside of the body, which provides a new path for waste material to leave the body after part of the intestine has been removed or injured
- **Colostomy:** An opening into the colon created to divert waste through the wall of the abdomen
- **Naso-gastric tube:** A tube that is passed through the nose and down through the nasopharynx and oesophagus into the stomach
- **Losses:** Fluid that drains from a stoma or naso-gastric tube

## Assessment

### Assessment of Fluid Loss

Ongoing assessment and documentation of stoma/NG fluid:

- Volume recorded as ongoing loss (ml/hr) and cumulative daily loss (ml/Kg/day)
- Colour & consistency

### Assessment of Hydration Status

Ongoing assessment of:

- body weight
- skin turgor
- fontanelle tension
- moistness of mucous membranes
- urine output (by catheter output or weighing of nappies)
- ensure accurate fluid balance chart maintained

### Patient Investigations

- At least daily serum electrolytes measurement until losses and/or fluid and electrolyte status is stable
- Weekly urinary electrolytes – sodium & potassium
- Twice weekly weight measurement – more frequent if evidence of severe dehydration/fluid loss
- Stoma fluid electrolyte composition is not routinely measured

## Management

### Starting replacement

The treatment orders should be completed:

**“When stoma/NG losses reach 20ml/kg commence replacement of losses ml for ml as per Guideline”.**

If a patient has acutely lost more than 10% bodyweight as a result of gastrointestinal fluid loss, correction of this loss should be considered in addition to replacement of ongoing fluid loss.

The standard intravenous replacement fluid is 0.9% sodium chloride with 10mmol potassium/500ml - this is administered in addition to maintenance fluids (and where indicated fluid to replace weight deficit). Losses are usually measured over a four hour period and that volume is then replaced over the next four hours.

If the serum electrolytes are not returning to normal with adequate replacement, the electrolyte composition of the replacement fluid or volume of replacement should be adjusted to reflect the fluid being lost.

Depending on the individual circumstances, gastrointestinal losses of  $>20\text{ml/Kg/day}$  may sometimes be replaced enterally using Gastrolyte. Replacement should still be ml for ml, but may be given as a bolus or in increments over 2-4 hours, depending upon the infant's feeding regime. This would be tailored to the infant's individual circumstance (e.g. depending upon the amount required and whether the infant is at risk of vomiting), and clearly documented on fluid orders by the medical staff.

Correct administration of maintenance & replacement fluids should aim to produce a urine output of  $>1\text{ml/Kg/hour}$  in most circumstances. If urine output is  $<1\text{ml/Kg/hour}$ , repeated reassessment of clinical condition and hydration status should be made and acted upon.

NB Losses from a colostomy are not normally measured. If a child with a colostomy appears dehydrated or has lost weight, an assessment of only the fluid portion of the colostomy loss & not the solid portion, may be required & replacement commenced if deemed clinically appropriate.

### **Continuing replacement**

If a patient has had replacement started and in the next 24 hours the losses are still more than  $20\text{ml/kg/day}$  the treatment order should be completed

**"Continue to replace stoma/NG losses ml:ml as per guideline"**

### **Family Centered Care**

It is the responsibility of the clinician caring for the infant requiring replacement of gastrointestinal losses to ensure that the parents understand the rationale for the procedure.

### References

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