

Clinical Guideline

MANAGEMENT OF HIGH OUTPUT STOMAS (HOS) AND ENTEROCUTANEOUS FISTULAE IN THE ACUTE SETTING

SETTING	All adult inpatient areas across the Trust
FOR STAFF	All staff involved in the care of patients with ileostomies or enterocutaneous fistulae, particularly those with a potential for, or already identified high output
PATIENTS	All patients with surgically formed ileostomy or spontaneously occurring enterocutaneous fistula(e)

GUIDANCE

All patients immediately post-operatively will experience alterations in their digestion, absorption and excretion. Ileostomy patients are particularly prone and should be encouraged to follow the advice of the stoma care nurse specialists (SCNS) and eat a low fibre, low residue, high starch diet, frequently in small volumes. They should be instructed to drink isotonic fluids such as full sugar squash rather hypotonic fluids such as water.

- A diet sheet is available to guide these patients and it should be made clear that after a few weeks of following this they can begin to introduce a more varied diet.
- Despite this, some patients still experience short or long term high output from their stoma or small bowel fistula. This can be usual for newly formed ileostomies immediately post-op, or following a period of paralytic ileus as this resolves, and should be monitored but may resolve within 24 hours.
- High output is hard to assess as there is no recognised definition with different centres creating their own parameters. For the purpose of this guideline and the benefit of patient safety and early detection, and intervention, of the deteriorating patient we will set a guideline as:

“High output equates to more than one litre in 24hrs of watery consistency from ileostomy or enterocutaneous fistula.”

Complications and longer term health issues

High output stoma/fistula function, even over the shorter term (0 – 24 hours), can cause severe complications and impact negatively on recovery and longer term health such as:

- **Dehydration:** signs and symptoms include unquenchable thirst, headache, cramps/tingling, lethargy, sallow dry skin, low volumes of dark (often strong smelling) urine, confusion often with aggression leading to:
 - **Acute kidney injury (AKI):** Stages 1, 2 and 3 with mortality at stage 3 being 36%. Treatment of AKI is predicted to cost the NHS £434 – 620 million per annum (leading in some patients to Chronic Kidney Disease). **PLEASE REFER TO AKI BUNDLE IF PATIENT DEVELOPES AKI OR AKI PROGRESSES.**
- **Malnutrition:** as the gut insufficiently absorbs nutrients the patient's ability to recover, to mobilise, heal and fight infection decreases also.
- **Psychological:** loss of confidence as the primary experience of having a stoma will be of uncontrollable output and weakness/lethargy.
- **Excoriation of peri-stomal skin:** high watery output can increase leakage risk and level of enzymes in output can mean erosion of skin very rapidly.

Management of high output stomas (HOS)

Careful monitoring from the start is essential to detect and treat a continuing high output and/or offer patients the appropriate advice to assist early resolution.

- Fluid balance charts are key, along with accurate completion and assessment by a qualified nurse.
- Dietary advice from the high output diet sheet and early SCNS involvement are also important.

If the HOS continues, doctors should be informed and should be encouraged to exclude potential causes such as:

- Resolving paralytic ileus
- Intra-abdominal sepsis
- Other sources of sepsis (UTI, Chest, etc.)
- Medication either inappropriate (i.e. continuing laxatives) or missed doses

Management of HOS (24-48 hours)

1. Contact stoma care nurse specialists (x [REDACTED] /bleep [REDACTED]).
2. Accurate fluid balance chart recording: all intake and losses paying attention to urine colour as well as volume. All staff aware of the value and importance of reporting balances demonstrating high anomalies to senior staff.
3. Daily bloods: particularly urea and electrolytes.
4. Daily weight: most accurately performed at the same time of day and wearing similar clothing type.
5. Oral intake: encourage isotonic (same osmolarity as cells of the gut) fluids such as squash NOT hypotonic (lower osmolarity than cells of gut) such as water.
 - Consuming hypotonic fluids (water) leads to drawing of sodium from the cells of the bowel into the lumen and water follows the sodium hence the high output. This drive is worsened by the resultant hyponatraemia (low blood sodium) which causes thirst.
 - To break the cycle isotonic fluids must be consumed (which encourage the sodium from the fluid back into the cells of the bowel and into the body, hence increasing both the sodium blood concentrate and the fluid reabsorption, ending the cycle of high output and dehydration.
 - Sodium and potassium concentration levels are vital for the health and function of all organs most especially the kidneys and heart (whilst not truly isotonic squash is a better alternative to water for ALL ileostomy patients as experience has demonstrated compliance and lower incidence of high output).
6. Diet: advise eating low fibre, low residue, high carbohydrate and high starch foods. Consume small volumes more frequently. Seek dietary leaflet from SCNS.
7. Consider IV fluids: to maintain hydration and replace losses, aim to keep in neutral balance (importance of fluid balance chart)
8. Review Medications: check for continuing "historic" such as laxatives, beware oral magnesium can drive output, if magnesium depleted consider IV replacement where possible. Remember do not prescribe slow release or enteric coated medications which will not absorb.

Management of HOS (48 hours+)

Follow steps 1-8 above with the addition:

1. IV fluids: sodium depletion is high risk with HOS, ileostomy/fistula output sodium concentration is 100-150mmol/litre and it is difficult to absorb more than 200mmol of sodium daily orally. IV fluids should be selected for their sodium concentration; NaCl has 154mmol sodium/litre, Hartmann's 131mmol/ litre whereas for example dextrose saline has only 30mmol sodium/litre.

2. Signs and symptoms of sodium deficiency:

- Apathy;
- Poor skin tone;
- Dark ringed eyes;
- Low volume pulse- tachycardia;
- Dizziness on standing due to hypotension;
- Muscle cramps;
- Unquenchable thirst.

3. Daily Bloods: (addition of urinary sodium daily at clinicians discretion).

4. Loperamide prescription: 4-12mg QDS (up to 48mg daily in severe, prolonged HOS).

PLEASE NOTE; the prescription must read TABLETS or syrup only as capsules are dispensed routinely but will not dissolve in the small bowel and these are not licensed when the capsule is opened.

5. Consider Codeine: however use with extreme caution particularly in the older patient as levels of confusion and irritation may rise and unlike loperamide codeine crosses the blood/brain barrier.

6. Consider fluid restriction: reduce oral intake to 1 litre daily of appropriate fluids i.e. isotonic NOT hypotonic.

7. Consider introduction ING/St Mark's isotonic rehydration solution: compliance is often an issue as the taste is strong. Patients can be encouraged to add squash flavouring to make this more palatable and the daily litre dose can be divided into 4 x 250mls and stored in the fridge to chill for palatability.

Management of HOS (SEVERE unresolved despite above measures or unable to maintain hydration or U's & E's).

As above with the addition:

- Consider PPI: advise high dose 40mg BD omeprazole (continue for 7-10 days and stop if no discernible impact)
- Consider referral to specialist nutrition team, at this stage the patient will be nutritionally compromised and healing/recovery will be compromised.
- Consider referral to gastroenterologists for advice and ongoing management of symptoms, short bowel syndrome (see definition below).

Octreotide is a somatostatin analogue which can reduce gastrointestinal, biliary and pancreatic secretions and can decrease gastrointestinal motility. This is given as a subcutaneous (SC) injection of

50 micrograms TDS with dose increasing until symptoms controlled to a maximum of 100 micrograms TDS.

NOTE Higher doses are used for other indications but rarely needed in HOS.

See SPC for cautions, contraindications and monitoring associated with treatment Octreotide 100 micrograms/1ml Solution for Injection - Summary of Product Characteristics (SmPC) - (emc) (medicines.org.uk)

Specialist pharmacist advice must be sought early for patients likely to need long-term treatment with somatostatin analogues.

Octreotide is the final phase of management and should be the first intervention to be removed once output starts to resolve/decrease.

Definition of SHORT BOWEL SYNDROME.

This can be defined as ACTUAL reduction in length of small bowel due to surgical resection, trauma or disease and is usually recognised as being less than 200cm remaining. Short bowel can also be functional when the physical length of bowel is adequate but the bowel works insufficiently to absorb fluid and nutrients and can become a long term condition requiring management after discharge and beyond. If discharging a patient with longer term short bowel syndrome then be aware there is a patient information leaflet available from the SCNS.

Some patients may continue to have higher output but with intervention and monitoring can still be discharged home. Discharge would be dependent on close monitoring, regular intervention and patient confidence and compliance and would need to be under the advice/care of medical gastro and specialist nutrition teams and would not be in the acute post-op phase.

Effective management of HOS requires a multi-disciplinary and collaborative approach. Patients must hear consistent advice in order that they comply immediately. Early intervention to prevent complications means we can avoid problems. Effective management means less delay to

discharge, prevention of falls, prevention of AKI and prevention of readmission and of course a safer more satisfactory patient journey.

SAFETY

To ensure that patients who undergo colorectal surgical procedures, or develop fistulae, are kept safe from dehydration.

Close, accurate monitoring – patients are prevented from developing Acute Kidney Injury (AKI) or deteriorating kidney function.

Staff are confident in the detection, monitoring and prevention of deterioration in relation to dehydration and complications from high output.

QUERIES

Stoma Care Nurse Specialist – extension [REDACTED] or bleep [REDACTED]