

Medication Management of High Output Ostomies

This medication pathway may be applied to patients exhibiting high output ostomies as well as fistulas that act like an ostomy. Note that for short gut patients, loperamide dosing often exceeds the maximum daily dose.

NOTE:

- Short bowel/gut defined as less than 200 cm of small intestine remaining, putting the patient at risk for dependence on enteral tube feeding or parental nutrition (PN). Loss of gut autonomy (the ability to live off PN) occurs when less than 110-130 cm of small bowel alone remains, or 70-90 cm of small bowel with intact colon.
- High output ostomy defined as >1500mL per 24h
- All short gut patients should have a discharge referral to an intestinal rehabilitation center or GI specialist. Note that authorization must be obtained for UCSF's intestinal rehab clinic (patient's insurance must be submitted).
- The following recommendations presume other contributors to increased output have been ruled out, including infection, IBD, bowel obstruction, prokinetic medications, etc.

Medications: *Crush tablets and open capsules to maximize absorption. Avoid liquid formulations if possible as these may contain sorbitol.*

STEP I:

- FIRST LINE: Loperamide 2mg caps/tabs**
 - Dose: 2mg before meals and at bedtime (Q6h scheduled if NPO)
 - Admin: Open capsules or crush tablets into water or applesauce prior to administration. Give 30 minutes prior to meals. Please administer even if patient is NPO.
 - Titration: If output is still high after 24h, increase each dose to 4mg (16mg/day)
 - Monitoring: Caution in pts with hx cardiac arrhythmias, prolonged QTc. For short gut patients, check QTc after reaching 16mg/day
- SECOND LINE (in addition to Loperamide): Lomotil (diphenoxylate-atropine 2.5mg/0.025mg) tabs**
 - Dose: 1 tab before meals and at bedtime (Q6h scheduled if NPO)
 - Admin: Crush tablets into water or applesauce prior to administration. Give 30 minutes prior to meals. Please administer even if patient is NPO.
 - Titration: If output is still high after 24h, increase each dose to 2 tabs (20mg/day)
- IF PATIENT IS WITHIN 6 MONTHS OF BOWEL RESECTION SURGERY OR HAS OUTPUT >3000ML/24HR: Acid suppression**
 - Dose: Pantoprazole 40mg IV BID x 6 doses, followed by Lansoprazole capsules 30mg PO BID before meals
 - o If <50cm jejunum remaining, add famotidine 40mg to TPN bag
 - Admin (Lansoprazole): Open capsule into water or applesauce prior to administering. Do not crush contents. Give 30 minutes prior to meals. Please administer even if patient is NPO.
 - Titration: After 2 months of BID therapy, taper to once daily dosing and monitor for changes in output. If no change in output after 1-2 weeks, may attempt to taper off. Reassess need after 6 months of PPI treatment
 - Discharge Comments: Prescribe Omeprazole 20mg BID before meals at discharge for higher likelihood of insurance coverage
- IF ABOVE FAILS TO THICKEN OUTPUT: Soluble fiber**
 - Dose: Nutrisource Fiber 1 packet TID with meals
 - o Order under Dietary (not Medications) in APEX
 - Titration: May increase each dose to 2 packets. Discontinue if no effect on output consistency or patient refuses.
 - Discharge Comments: Do not forget to prescribe at discharge since order will not show up on medication reconciliation (Prescribe as New Order: Guar Gum Oral Packet)

STEP II:

- IF QTc <500 ON LOPERAMIDE 16MG/DAY:** Increase each dose of loperamide by 2mg every 24 hours up to 8mg (32mg/day)
 - Check QTc after reaching 32mg/day
 - Only applies to short gut patients. Do not exceed 16mg/day for non-short gut patients. For non-short gut patients, see scheduled codeine/morphine and adjuncts below.
- IF QTc >500 ON LOPERAMIDE 16MG/DAY:** Keep loperamide at highest dose deemed safe/tolerable and start scheduled codeine OR morphine
 - Codeine tabs:

- Dose: 15mg before meals and at bedtime
 - Admin: Crush tablets prior to administration. Hold for oversedation, RR<12.
 - Titration: Increase each dose by 15mg increments as tolerated up to 60mg. Titrate to minimum effective dose
 - Monitoring: Hepatic conversion to morphine is subject to CYP2D6 genetic polymorphism (response to medication more variable)
 - Morphine 2mg/ml liquid:
 - Dose: 2mg (1 mL) before meals and at bedtime
 - Titration: Increase each dose by 2mg (1 mL) increments as tolerated up to 10mg. Titrate to minimum effective dose
 - Admin: Hold for oversedation, RR<12
 - Monitoring: Avoid in renal dysfunction
 - Note that all opioids (with perhaps the exception of weak agonists such as tramadol) should theoretically have a similar effect on slowing gut, so it is not a requirement to convert to morphine or codeine if a patient's pain is well controlled on a current narcotic regimen. Avoid tincture of opium if possible since it often requires prior authorization, is difficult to source, and the active ingredient is likely morphine anyway.
- 3. Consider adjuncts:**
- IF SBP CONSISTENTLY ELEVATED:
 - Clonidine 0.1mg tabs: 0.1mg BID
 - Admin: Crush tablet prior to administering. Hold for SBP <110 or HR <60.
 - Titration: Increase to 0.2mg BID if tolerated
 - IF <100CM ILEUM RESECTED -AND- COLON IN CONTINUITY:
 - Cholestyramine Light (Sugar-Free) 4g powder packets: 4g BID with meals
 - Titration: May increase by 4g daily up to 24g/day if output improved. Discontinue if output worsens
 - Monitoring: Caution drug interactions (consult floor pharmacist)
 - IF PATIENT EXPERIENCING *INCREASE* IN OUTPUT AND HAS S/SX SIBO:
 - Rifaximin 400mg tabs: 400mg TID x 10 days
 - Administration instructions: Crush tablets prior to administration
 - S/SX SIBO: foul-smelling flatulence, bloating, abdominal cramping/discomfort (especially if jejuno-colic anatomy)
 - Improvement in symptoms expected in 1-2 weeks
 - May require monthly courses and antibiotic rotation
 - Consult floor pharmacist to help with outpatient coverage if needed

STEP III:

1. **IF QTc <500 ON LOPERAMIDE 32MG/DAY:** Increase each dose of loperamide by 2mg every 24 hours up to 16mg by mouth before meals and at bedtime (64mg/day)
 - Check QTc prior to discharge
 - Only applies to short gut patients. Do not exceed 16mg/day for non-short gut patients.
2. **IF QTc >500 ON LOPERAMIDE 32MG/DAY -OR- IF NO FURTHER RESPONSE WITH UPTITRATION OF LOPERAMIDE:** See Codeine/Morphine in STEP II

STEP IV:

1. **Ocreotide injection**
 - Dose: 50mcg SQ Q8h scheduled
 - Titration: Increase to 100mcg SQ Q8h scheduled. Discontinue if no improvement after 3 days.
 - Discharge comments: Consult floor pharmacist to help with outpatient coverage if needed.

AVS DISCHARGE INSTRUCTIONS: **[[PLEASE TAILOR TO PATIENT. Steal dotphrase HIGHOSTOMYOUTPUTAVS from Nancy Hung]]**

MEDICATIONS FOR MANAGING OSTOMY OUTPUT

You have been started on medications to help control your ostomy output. It is important that you keep a diary of your daily ostomy and urine output and work with an intestinal rehabilitation clinic or gastrointestinal (GI) specialist to adjust these medications. Note that your goal output is less than _____ ML per day.

In order to maximize absorption of these medications, please open all capsules and crush all tablets into water, applesauce, or yogurt before taking, unless otherwise instructed. In general, avoid liquid formulations of these medications as they may contain ingredients that can worsen output.

LOPERAMIDE CAPSULES OR TABLETS

- This medication helps to slow down your gut.
- It is available over-the-counter and does not require a prescription.
- Take 30 minutes before meals and at bedtime if you are allowed to eat. Take every 6 hours if you are NOT allowed to eat.
- If your output increases above your goal output, you may increase each dose by 2mg (for example, if you were taking 8mg before meals and at bedtime, you may increase to 10mg before meals and at bedtime). If your output is still high after 2 days, you may increase each dose by an additional 2mg. If your output is still high despite these changes, consult your GI provider.

LOMOTIL TABLETS (DIPHENOXYLATE-ATROPINE)

- This medication helps to slow down your gut.
- Take 30 minutes before meals and at bedtime if you are allowed to eat. Take every 6 hours if you are NOT allowed to eat.

OMEPRAZOLE CAPSULES (OR SIMILAR ACID REDUCER)

- This medication helps reduce stomach acid.
- It will be prescribed for you, but if it is not covered by your insurance you may purchase it over-the-counter without a prescription.
- Open capsules into water or applesauce prior to taking. Do not crush the pellets inside. Avoid tablets as they have a special coating that cannot be crushed.
- After 2 months, you may reduce your twice daily dosing to just once daily and see if this affects your output. If there is no significant change to your output, you may try stopping this medication after 1-2 weeks. If you are not able to stop this medication, stay on the lowest dose of the medication that manages your output and you may try again every couple of months.
- Ask your GI provider about this medication if you are still on it after 6 months.

SOLUBLE FIBER

- This medication helps thicken your output.
- It may be purchased over-the-counter without a prescription. Look for “soluble” fiber (e.g. guar gum or pectin based).
- Take with meals if you feel it is helping to thicken your output.

CODEINE TABLETS

- This medication helps slow down your gut.
- May cause drowsiness, dizziness, and confusion. Avoid driving or alcohol. Addiction may occur with narcotic medications.

MORPHINE LIQUID

- This medication helps slow down your gut.
- May cause drowsiness, dizziness, and confusion. Avoid driving or alcohol. Addiction may occur with narcotic medications.

CLONIDINE TABLETS

- This medication helps decrease output, but it may also affect your blood pressure and heart rate.
- Do not take if you are feeling dizzy or faint.

CHOLESTYRAMINE LIGHT (SUGAR-FREE) POWDER

- This medication helps you absorb nutrients better and reduce output.
- Mix powder in half a cup of water or other noncarbonated beverage, or applesauce. Take with meals.
- This medication may interact with other drugs. Let your doctor know if you start any new medications.

RIFAXIMIN (XIFAXAN) TABLETS

- This antibiotic helps reduce output.
- Complete the entire course prescribed to you.

OCTREOTIDE FOR INJECTION

- This medication helps reduce output.
- Inject under the skin as instructed.
- Give your pharmacy 7 days notice prior to picking up refills.
- Store in refrigerator in a light-proof bag or container until ready for use.