OSTOMIES AND MEDICATIONS

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Objectives

- Identify different types of ostomies
- Review potential medication concerns with ostomies
- Manage routine ostomy problems with and without medications
- Review common nutritional supplements and vitamins recommended for ostomy patients
• **Ostomy**: surgically created intestinal or urinary tract diversion done for waste elimination.
• **Colostomy**: abdominal opening from any part of the large intestine (colon) because part of the colon has been removed or bypassed.
• **Ileostomy**: abdominal opening from the last part of the small intestine (ileum) because the entire colon has been removed or bypassed.
• **Urostomy**: abdominal opening made to redirect urine away from the bladder and out of the body.
Ileostomy

- Created from the part of the small intestine called the ileum
- Bowel movements are loose or watery
- Stoma is usually located on the right lower side of the abdomen
- Created out of the ascending colon
- Bowel movements are loose or watery
- Stoma is usually located on the right side of the abdomen
• Created out of the descending colon
• Bowel movements area usually soft
• Stoma is usually located on the left side of the abdomen
• Created out of the last part of the colon
• Bowel movements can be soft or firm
• Stoma is usually located on the left side of the abdomen
Urine will flow from the kidneys, through the ureters and ileal conduit, and out of a small opening in the abdomen (stoma).
Potential Medication Concerns

- Medications that directly affect stoma output (color, quantity, pH)
- Inactive ingredients
- Absorption issues
- Side effects
### Medications vs. Stoma Output

**Common Medications that may Discolor Feces**

<table>
<thead>
<tr>
<th>Black</th>
<th>Gray</th>
<th>Green</th>
<th>Orange/Red</th>
<th>Red/Pink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohols</td>
<td>Cocoa</td>
<td>Indomethacin (NSAID)</td>
<td>Phenazopyridine</td>
<td>Anticoagulants</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>Colchicine</td>
<td>Medroxyprogesterone</td>
<td>Rifampin</td>
<td>NSAIDs</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>Some antibiotics</td>
<td>Pancrelipase</td>
<td></td>
<td>Senna</td>
</tr>
<tr>
<td>Digoxin</td>
<td></td>
<td>Senna</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron</td>
<td></td>
<td>Tetracycline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSAIDs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepto-Bismol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

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**Feces**
### Medications vs. Stoma Output

**Common Medications that may Discolor **Urine**

<table>
<thead>
<tr>
<th>Dark-Brown</th>
<th>Blue/Green</th>
<th>Orange/Yellow</th>
<th>Red/Pink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>Amitriptylline, Cimetidine</td>
<td>Heparin, Isoniazid, Niacin</td>
<td>Aspirin, Doxorubicin,</td>
</tr>
<tr>
<td>Levodopa</td>
<td>Metoclopramide, Propofol</td>
<td>Riboflavin, Phenazopyridine</td>
<td>Ibuprofen, Phenytoin</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>Triamterene</td>
<td>Rifampin, Vitamin A, Warfarin</td>
<td></td>
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<tr>
<td>Nitrofurantoin</td>
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</table>
Stoma Output: Quantity

- Average stoma daily output = 400 – 800 mL
  - Ideally should not exceed 1000 mL
- Controlling volume of stoma may require medication intervention
- Avoid laxatives and prokinetics
  - Examples of laxatives: bisacodyl, senna
  - Examples of prokinetics: Metoclopramide, Erythromycin (Rx only)
- Medications to help decrease stoma output: antimitotility drugs
  - Loperamide (Imodium A-D®) (Available over the counter)
  - Codeine (Rx only)
  - Tincture of opium (Rx only)
Excessive intake of hypotonic fluids (water, tea, coffee) to replenish the stoma losses can lead to sodium depletion and dehydration.

Recommendation: if you have high stoma output, limit intake of hypotonic fluids to 500 mL per day and take the rest of fluids (1,500 mL) with oral rehydration solution.

Oral Rehydration Solution:
- Gatorade
- PowerAde
- Pedialyte

1 cup = 237 mL
Urostomy Output: Acidic vs. Alkaline

- Unless advised by the doctor otherwise, urostomy patients should keep their urine in an acid state.
- Acidic urine helps prevent urinary tract infections.
- Alkaline or “basic” urine can lead to urinary crystal formation on the stoma.
- Cranberry juice helps acidify urine.
- Avoid orange juice or other citrus juices.
Urostomy Output: Acidic vs. Alkaline

Medications that make urine acidic

- Vitamin C
- Methenamine

Medications that can make urine alkaline

- Acetazolamide
- Sodium bicarbonate
- Thiazide diuretics (Hydrochlorothiazide, metolazone)
- Potassium or Sodium Citrate
Potential Medication Concerns

- Medications that directly affect stoma output (quantity, color, etc)
- Inactive ingredients
- Absorption issues
- Side effects
Inactive Ingredients

■ 55% of oral medications contain at least one FODMAP
  - *Fermentable Oligo, Di, Mono-saccharides And Polyols*
    - Carbs and other chemicals found in foods associated with digestive issues

■ Some common inactive ingredients can be harmful to ostomates, especially patients with ileostomies

■ Polyols: some have osmotic laxative properties (can cause diarrhea)
  - Sorbitol
  - Mannitol
  - Maltitol
  - Xylitol

■ Common over the counter medications that may contain sorbitol
  - Tylenol Suspension, Robitussin, Delsym, Nyquil, and other cough products
Reading Medication Labels

ROBITUSSIN LONG-ACTING COUGH LIQUID GELS

Dayquil™ Cold & Flu Relief Liquid
Potential Medication Concerns

- Medications that directly affect stoma output (quantity, color, etc)
- Inactive ingredients
- Absorption issues
- Side effects
Absorption Concern

- Location of stoma
  - Greater reduction in absorption if more ileum is resected/bypassed
  - Quality of small bowel tissue remaining
  - Descending/sigmoid colostomies have the same medication absorption as patients without stomas.

https://en.wikipedia.org/wiki/Colostomy
Medication Concern: Absorption

■ Controlled-release medications
  - Extended Release, Delayed Release, Sustained Release

<table>
<thead>
<tr>
<th>Common Medical Abbreviations for Controlled Release Medications</th>
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<tbody>
<tr>
<td>ER</td>
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<tr>
<td>DR</td>
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</table>

■ Enteric Coated tablets
  - Example: Aspirin EC, Pantoprazole EC

■ Oral Contraceptives or hormone-replacement therapy
  - May need alternative routes
Non-oral Hormonal Contraceptives

- Injectable: Depo-Provera (medroxyprogesterone)
- Patch: Xulane (norelgestromin/ethinyl estradiol)
- Vaginal ring: NuvaRing (etonogestrel/ethinyl estradiol)
- Intrauterine devices (IUD)
- Transdermal Implant: Nexplanon
Medication Concern: Absorption

- Other medications well documented to have reduced absorption in ostomates
  - Levothyroxine (Synthroid)
  - Mesalamine
  - Digoxin

- Preferred medication dosage forms for ostomy patients
  - Immediate Release tablets/capsules
  - Quick dissolution formulations: chewables, gummies, liquids, or lozenges
  - Non-oral route of administration: injection, nasal spray, topical application
    - Example: Vitamin B-12

https://www.pinterest.com/pin/139541288433196394/?lp=true
Potential Medication Concerns

- Medications that directly affect stoma output (quantity, color, etc)
- Inactive ingredients
- Absorption issues
- Side effects
Side effects

**Antibiotics:** diarrhea, gas, dehydration, secondary fungal infections

**Sulfa antibiotics:** urine crystallization in the urostomy patients

**Certain over the counter analgesics:** gastric bleeding, irritation, dark ostomy output

**Narcotic Pain Medications:** constipation

**Antacids:** constipation or diarrhea depending on the agent used

**Diuretics:** dehydration and electrolyte abnormalities
Preventing Side Effects: Antibiotics

- **Diarrhea**
  - Probiotic supplementation
  - Eat yogurt or buttermilk

- **Secondary fungal infections**
  - Closely monitor area around and behind the faceplate of stoma.
  - If a rash develops, antifungal powder or cream is usually enough
  - If rash is severe or fever is also present, contact physician immediately

- **Sulfa antibiotics:**
  - Should be avoided in urostomy patients
  - If used, patient should drink plenty of fluids to dilute the urine
Probiotics

- Microorganisms that function like good bacteria in the gut
- Help repopulate the beneficial bacteria, overwhelming the bad bacteria in the gut
- Probiotics are found in: yogurt, cheddar cheese, cottage cheese, and pickled vegetables

Prebiotics

- Carbohydrates that act as food for the good bacteria in the gut
- These carbs travel undigested to the colon, where they ferment and produce small chain fatty acids that feed the gut flora.
- Prebiotics are found in: onions, honey, garlic, bananas
Probiotics: Selecting the Right One

- High CFU (Colony Forming Unit) count
  - *Formulas with greater than 40 billion CFUs are preferred*
- Multiple bacterial strains
  - *Formulas with at least 9 bacterial strains*
  - *Common Names: lactobacillus, Bifidobacterium, saccharomyces boulardii*
- Lists the substrains
- Contains prebiotics
- Does not require refrigeration
- Watch out for inactive ingredients
- Price
Preventing Side Effects: NSAIDs

- Avoid using over the counter Non-Steroidal Anti-inflammatory Drugs (NSAIDs)
  - *Example: ibuprofen, naproxen*
- If use approved by prescriber, ensure that these medications are used short-term
- Take with food to minimize risk of stomach irritation
- Closely monitor color of ostomy output
  - *Black tarry color indicative of bleeding*
- Acetaminophen (Tylenol®) recommended as alternative for pain and/or fever control
- Ask your pharmacist!
**Active ingredient (in each capsule)**

Solubilized ibuprofen equal to 200 mg ibuprofen (NSAID)*
(*nonsteroidal anti-inflammatory drug)

**Purpose**
Pain reliever/Fever reducer (present as the free acid and potassium salt)

**Uses**
- temporarily relieves minor aches and pains due to:
  - headache
  - toothache
  - backache
  - menstrual cramps
  - the common cold
  - muscular aches
  - minor pain of arthritis
  - temporarily reduces fever
Preventing Side Effects: Opioids

- Slow contractions of the bowel and frequently lead to constipation
- Stoppage of fecal excretion or a reduced flow or volume of excretion through the stoma as well as GI discomfort
- Stool softeners may help in preventing constipation
  - Colace® (docusate)
- Bulk-forming laxatives and drinking plenty of fluids promote regularity and normal stool formation
  - Metamucil® (psyllium)
- Avoid harsh stimulant laxatives (can cause electrolyte disorders and dehydration)
  - Dulcolax® (bisacodyl)
Preventing Side effects: Antacids

<table>
<thead>
<tr>
<th>Type of Antacid</th>
<th>Precautions/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum based antacids</td>
<td>cause constipation</td>
</tr>
<tr>
<td>• Mylanta, Gaviscon</td>
<td></td>
</tr>
<tr>
<td>Magnesium based antacids</td>
<td>cause diarrhea (avoid especially in ileostomy patients)</td>
</tr>
<tr>
<td>• Maalox, Milk of Magnesia</td>
<td></td>
</tr>
<tr>
<td>Calcium based antacids</td>
<td>(avoid in urostomy patients)</td>
</tr>
<tr>
<td>• Calcium Carbonate (Tums, Rolaid)</td>
<td>Risk for kidney stones</td>
</tr>
<tr>
<td>Proton Pump Inhibitors</td>
<td>not recommended to be used long-term. Associated with vitamin malabsorption, and infectious diarrhea</td>
</tr>
<tr>
<td>• Omeprazole (Prilosec), esomeprazole (Nexium), lansoprazole (Prevacid)</td>
<td></td>
</tr>
<tr>
<td>Preferred agents: H-2 Receptor antagonists</td>
<td></td>
</tr>
<tr>
<td>• Famotidine (Pepcid), ranitidine (Zantac)</td>
<td></td>
</tr>
</tbody>
</table>
Preventing Side effects: Diuretics

Common diuretics:
- Hydrochlorothiazide (HCTZ)
- Furosemide
- Bumetanide
- Torsemide
- Spironolactone
- Triamterene
- Metolazone

Can cause dehydration and electrolyte imbalances

Important to drink enough water or oral-hydration solutions

Urostomy patients: bags may need to be emptied more frequently
MANAGING COLOSTOMY PROBLEMS
Common Colostomy Problems

- Gas (Flatulence)
- Odor Control
- Blockage (obstruction)
- Diarrhea
Ostomy Care: Gas

Foods that may cause gas: eggs, cabbage, broccoli, onions, beans, fish, milk, cheese, carbonated drinks, and alcohol

- Eating regularly will help prevent gas
- Eating smaller amounts of food 4 to 5 times a day
- Do NOT skip meals to avoid gas or output

Medications to prevent/manage gas

- Simethicone (Gas-X)
- Alpha-galactosidase (Beano)
  - Take four times a day (with each meal and at bedtime)
Ostomy Care: Odor

<table>
<thead>
<tr>
<th>Foods that can produce odor: eggs, cabbage, cheese, cucumbers, garlic, fish, dairy foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use an odor-resistant pouch</td>
</tr>
<tr>
<td>Place special deodorant liquids and/or tablets in the pouch: Hollister m9 Odor Eliminator drops</td>
</tr>
<tr>
<td>Oral medications to help neutralize odor:</td>
</tr>
<tr>
<td>• Bismuth subgallate 1-2 capsules or chewable tablets up to 4 times daily</td>
</tr>
<tr>
<td>• Chlorophyll tablets: 100-300 mg/day in divided doses (2-3 times per day)</td>
</tr>
</tbody>
</table>
Ostomy Care: Blockage

- Normal for ostomy to not have output for a short period of time
- If stoma is not active for 4 to 6 hours and you have cramps, pain, and/or nausea
  - *Intestinal blockage (obstruction)*
  - *Contact doctor or ostomy nurse right away*
  - *If they cannot be reached and you are having pain and cramping with no stoma output for more than 2 hours, go to emergency room.*

- **DO NOT** take a laxative

- Avoid foods high in fiber: cabbage, greens, celery, pineapple, nuts, coconut, corn
Ostomy Care: Diarrhea

- Goal ileostomy output: less than 1 L per day
- Control intake of offending foods
  - *Common foods that may cause diarrhea:*
    - Fruits, vegetables, milk, fruit juice, prune juice, unfiltered water
- Common offending medications: Antibiotics (as previously discussed)
- Partial blockage (smelly discharge, cramps, forceful liquid output, and a lot of noises from the stoma) - Contact your doctor if this happens
Ostomy Care: Diarrhea

Fiber Supplements
- Guar gum - NutriSource
- Wheat Dextrin - Benefiber
- Pectin

Anti-motility agents:
- Loperamide (Imodium®) OTC
- Diphenoxylate/Atropine (Lomotil) [Rx Only]
- Codeine [Rx Only]
- Tincture of Opium [Rx Only]
VITAMINS AND SUPPLEMENTS
Potential Vitamin Deficiencies with Ostomy Patients

- Fat Soluble Vitamins:
  - Vitamin A, D, E, K
- Water Soluble Vitamins
  - B-1, B-12, B-9 (Folic acid), C
- Minerals and Trace Elements
  - Calcium, Iron, Magnesium, Zinc
- Speak with your doctor about vitamin lab panel to assess for deficiencies
Fiber Supplements

- **Benefiber® - wheat dextrin (100% natural prebiotic fiber)**
  - Dose: 2 teaspoons added to 4-8 ounces of liquid or soft food 3 times daily

- **NutriSource® – guar gum**
  - Dose: 3 grams (1 packet) added to 4-8 ounces of liquid 4 times daily (some patients may need up to 6 times a day)

- **Apple Pectin**
  - Dose: 2 capsules 1-2 times daily with 8 ounces of liquid
Other Supplements:

- Glutamine: may decrease diarrhea symptoms in ostomy and short bowel patients since it helps in the reabsorption of sodium and water
  - *Theoretical not proven in clinical trials yet*

- Common Glutamine supplements:
  - *Glutasolve, GlutaMent, GlutImmune*
    - Dose: 10 g three times a day
References

- Caring for Your Ileostomy or Colostomy. Available at www.mskcc.org. Accessed on Sep 15, 2019
Questions?