

PALLIATIVE PEARLS

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Approach to Rectal Administration: A Refresher March 2022

Medication administration in terminally ill patients may be challenging when the oral route is no longer an option. Many of the medications needed critically for pain and symptom management need to reach systemic circulation to be effective (i.e., bioavailable). Despite the various dosage forms marketed today, the most effective routes for systemic circulation remain oral, sublingual, and parenteral. When the sublingual route and parenteral access are not feasible, palliative care clinicians may wish to consider the rectal administration of medications.

The rectal route is an effective route of administration for many medications, including many used at the end of life. The walls of the rectum are highly vascularized and absorb many medications quickly and effectively. Medications delivered to the distal one-third of the rectum at least partially avoid the "first pass effect" through the liver, which allows for greater bioavailability of many medications compared to the oral route.

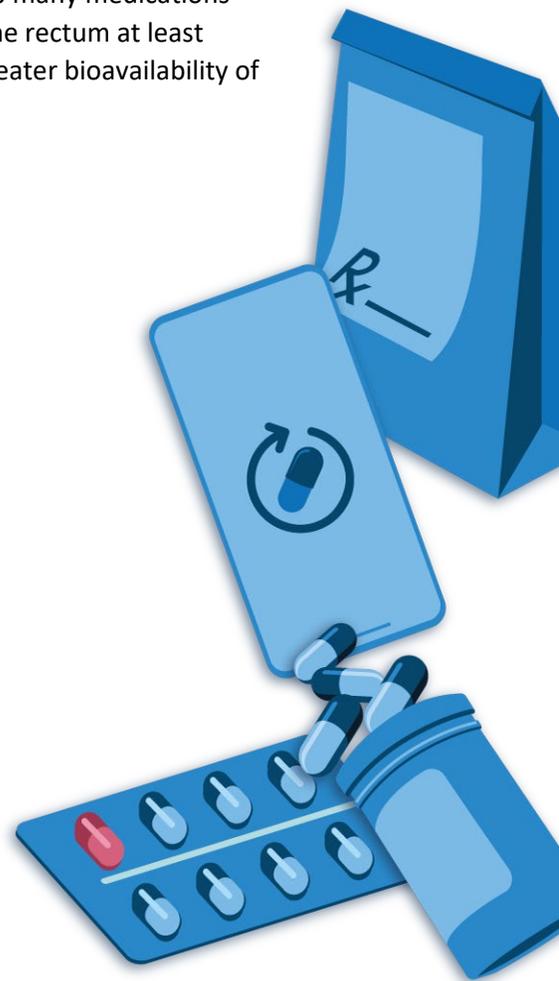
RECTAL ROUTE FOR DRUG ADMINISTRATION

When to Consider Rectal Route:¹

- Dysphagia
- Intractable nausea and vomiting
- Refusing oral medications or spitting out tablets
- Gastrointestinal obstruction
- Esophageal stricture or malignancy
- Loss of consciousness
- Decreased mental status

When to Avoid Rectal Route:^{1,2}

- Neutropenia (due to risk of infection)
- Thrombocytopenia (due to risk of bleeding)
- Impaction
- Constipation
- Diarrhea
- Anorectal disease (e.g., perianal abscess and fistulas)
- When placement of medication per rectum will cause pain (e.g., inflamed hemorrhoids, fissures or lesions of the anus or rectum)



Limitations:

- Not all drugs are absorbed rectally
- Tablets and capsules administered rectally may vary in how they dissolve. It depends on presence of stool in the rectum and hydration status.
- Suppositories may be expelled prematurely and not provide the total drug dose
- The patient and family/caregiver may have concerns regarding the patient's privacy or dignity or may be embarrassed by rectal administration
- Giving drugs rectally may cause local irritation, producing an inconvenient and uncomfortable sensation of the need to defecate¹

MEDICATIONS^{1,3}

The bioavailability of medications administered rectally is highly variable and not every medication will be effectively administered this way. Common palliative medications with literature (e.g., clinical trials, anecdotal reports) supporting acceptable rectal bioavailability include:

- Acetaminophen ⁴
- Baclofen ⁵
- Carbamazepine ^{1,3,6}
- Dexamethasone ^{1,7}
- Diazepam ^{1,4,8}
- Doxepin ^{2,9}
- Haloperidol ^{1,3}
- Hydromorphone ^{1,4,6}
- Ibuprofen ^{1,3,6,10}
- Lamotrigine ^{1,3,11,12}
- Levetiracetam ^{6,13}
- Lorazepam ^{1,6,10,14-16}
- Methadone ^{1,17-19}
- Metoclopramide ^{1,4,5}
- Morphine ^{1,3,4,6,20-24}
- Naproxen ^{1, 3,10}
- Ondansetron ^{1,3,6,25}
- Oxycodone ^{1,3,26,27}
- Phenobarbital ^{1,28-30}
- Levothyroxine ³¹⁻³⁴
- Valproic acid ^{1,3,15}

TIPS FOR RECTAL MEDICATION ADMINISTRATION^{1,3}

- Prior to insertion of medication, the rectum should be emptied - stool interferes with absorption
- For solid dosage forms (e.g., suppositories, tablets, capsules):
 - Consider the size of the medication inserted to predict successful retention and avoid expulsion:
 - For suppositories, retention is best when the base (blunt end) is inserted first
 - Multiple small-sized tablets can be administered within a single "00" size empty gelatin capsule
 - For lubrication, use a water-soluble lubricant (e.g., K-Y Jelly®), not petroleum jelly (it inhibits absorption)
 - Insert the medication about a finger's length into the rectum and place against the rectal wall
- For liquid medications (e.g., solutions, suspensions, syrups):
 - Administer with a small, lubricated syringe
 - A catheter tip syringe can be useful as well as an enema bulb
 - A urinary catheter or nasal prong oxygen tubing cut to 6 inches and attached to a syringe can facilitate correct placement of the medication in the rectum

- To assist in dissolution of medication, especially in dehydrated patients:
 - Instill 10 ml warm water rectally via syringe - up to 25 mL of liquid is usually easily retained
 - Keep volume of preparation less than 60 ml to avoid spontaneous expulsion before it can be absorbed

The Macy Catheter® is a device that incorporates many of the best practice principles above. Read on for a summary on this device.

THE MACY CATHETER³⁵

The Macy Catheter® is a prescription device to be placed by a clinician. It can be purchased from www.Hospicorp.com or online medical supply websites like www.medline.com. Once in place, it can be used for repeat administration of liquid medications in solution or suspension form. The Macy Catheter is comprised of a dual port, dual lumen ballooned tube that is inserted in the rectum just past the rectal sphincter, where the retention balloon is inflated to hold the device in place.

The Macy Catheter® medication port is specifically designed to be compatible with oral/enteral connectors only, reducing the chance of connection errors. The medication port also features a valve to prevent leakage and is designed to be non-clogging. The Macy Catheter® is also designed to expel with defecation, or it can be easily removed prior to a bowel movement. The balloon is smaller and softer than typical stool in the rectum.

Solid forms can be crushed, mixed with water, and delivered in a suspension or solution with an enteral syringe. Commercially available liquid or suspension forms of medications are injected directly into the catheter.

Liquipill System

The Liquipill System™ can be purchased along with the Macy Catheter® as part of the Bedside Care Kit and is used to prepare mini-enema suspensions from oral tablets. The kit contains a Liquipill Assembly, Water Reservoir Assembly, and 3 ml, 10 ml, and 20 ml Luer Lock Enteral/Oral Syringes. The Liquipill Assembly is a grinder attached to a reservoir for grinding tablets. The powdered tablets fall into the reservoir and 5-10 ml of tap water is added using the enteral syringe. The mixture is shaken or swirled to create a suspension and the contents are withdrawn and administered through the Macy Catheter® followed by an additional 3 ml flush.

Advantages of The Macy Catheter®

- Saves expense and time required for a specialty pharmacy to compound suppositories
- Can be used up to 28 days
- Once placed, The Macy Catheter® minimizes the need to repeatedly access the patient's rectum, which can be distressing
- Lessens the need to reposition the patient for rectal administration, which can be uncomfortable for patients
- Mini-enema suspensions appear to enhance absorption. Dissolving the tablet in this manner increases surface area compared to inserting a whole tablet and has faster onset and peak levels compared to suppositories.

Limitations of The Macy Catheter®

- Cannot be used in patients with diarrhea; liquid stool in the rectal vault may interfere with adequate drug absorption.
- Cannot be used to administer long-acting medications that otherwise can't be crushed or opened

For additional information on this topic, please review these references:

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