

### Medication Administration via Feeding Tubes or in Patients with Dysphagia: Drug-Specific Recommendations

NOTE: This is not a complete list of medications. Therefore, consult with a pharmacist when considering crushing tablets and/or opening capsules, in order to verify that this is appropriate.

For administration of hazardous medications, refer to PPR424.

For reproductive risk medications, precautions should be followed if pregnant, breastfeeding or actively trying to conceive. Refer to PPR424.

Medication	Issues/Comments	Recommendations/Alternative Products
5-ASA (mesalamine) (Asacol®, Pentasa®, Salofalk®, Mesasal®)	Delayed release	DO NOT CRUSH - Consider switching to a suppository or foam enema, if appropriate - Pentasa® tablets may be dispersed in water and the resulting modified release granules may be given down large bore tubes. Granules can block smaller tubes
Acetaminophen (Tylenol®)	Liquid contains sorbitol; high osmolality may cause diarrhea  ER tablets: delayed release	DO NOT CRUSH ER tablets - Crush plain acetaminophen tablet (preferred) OR - May use liquid. Dilute well for ET. Regular use may cause diarrhea and cost is greater than crushing tabs
Acetylsalicylic acid (Aspirin®)	Enteric coated Crushing exposes the drug to inactivation by the acidity of the stomach, decreasing absorption	DO NOT CRUSH EC tablets - ASA 80 mg chewable tablet (for 81 mg enteric coated) - ASA 325 mg plain tablet (for 325 mg enteric coated)
Acyclovir (Zovirax®)	Suspension is highly viscous and contains sorbitol; High osmolality may cause diarrhea J-tube administration is likely to be ineffective	- Tablets may be dispersed in a minimum of 50 mL water. - Change to alternative therapy if J or NJ tube
Alfuzosin (Xatral®)	Modified release	DO NOT CRUSH - Consider alternative, such as doxazosin
Apixaban (Eliquis®)	Unstable dosage form	- May crush and suspend in 60 mL of water or D5W immediately prior to administration
Bisacodyl tablets (Dulcolax®)	Enteric coated	DO NOT CRUSH - Consider bisacodyl suppository or alternative laxative
Budesonide capsules (Entocort®)	Modified release enteric coated granules	DO NOT CRUSH contents of capsule. - PO: Capsule may be opened and granules mixed with food. - ET: Budesonide enema is available OR consider alternate therapy

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Pharmacy & Therapeutics Committee (January 2020)

Medication	Issues/Comments	Recommendations/Alternative Products
Buprenorphine and Naloxone (Suboxone®)	Sublingual formulation. Buprenorphine undergoes hepatic first-pass metabolism, making enteral administration ineffective	MUST BE ADMINISTERED SUBLINGUALLY. DO NOT give via feeding tube
Bupropion (Wellbutrin SR®, XL®, Zyban®)	Crushing tablet destroys integrity of sustained-release formulation, which may increase the risk of seizure, especially at high doses. Bupropion is hygroscopic and degrades rapidly following exposure to moisture, therefore if crushing, it should be done immediately before administration	<ul style="list-style-type: none"> <li>- SR tablet: Crushing may increase the risk of adverse effects. Consider crushing if dose and frequency are adjusted (e.g. divide total daily dose TID). Single dose should not exceed 150 mg</li> <li>- XL tablet: Consider switching to SR tablet and adjusting dose and frequency as above</li> </ul>
Calcitriol		<ul style="list-style-type: none"> <li>- Do not open liquid capsule due to risk of administering incomplete dose</li> </ul>
Calcium carbonate or lactogluconate (Caltrate® or Calcium Sandoz Forte®)	Effervescent tabs contain phosphate, sodium and potassium. Liquid contains sucralose	<ul style="list-style-type: none"> <li>- Crush tabs and dissolve in water OR dilute liquid with water.</li> <li>- Effervescent tabs better for IJ administration due to lower osmolality</li> </ul>
Candesartan	Tablets do not readily disperse although can be crushed	<ul style="list-style-type: none"> <li>- Crush tablet or consider changing to irbesartan</li> </ul>
Cefuroxime (Ceftin®)	Suspension may be too viscous for fine bore tubes (less than 10Fr). Osmolarity of suspension is too high for intrajejunal administration.	<ul style="list-style-type: none"> <li>- Dissolve tablets in 10 mL of water (preferred). Avoid crushing due to risk of cephalosporin sensitization</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>- Liquid suspension is available at increased cost but can block tubes less than 10 Fr.</li> <li>- Use tablets for intrajejunal administration due to lower osmolality</li> </ul>
Cephalexin (Keflex®)	Absorption may be reduced by J-tube administration	<ul style="list-style-type: none"> <li>- Use liquid suspension or tablets will dissolve in 10 mL of water. Avoid crushing due to risk of cephalosporin sensitization</li> </ul>
Ciprofloxacin (Cipro®, Cipro XL®)	<p>Binds to feeds. Absorption via J-tube may be reduced (may decrease efficacy)</p> <p>Suspension contains microencapsulated drug which may clog enteral tubes</p>	<p>DO NOT CRUSH XL tablet</p> <ul style="list-style-type: none"> <li>- Can dissolve plain tablet in 20 mL</li> <li>- FEEDS MUST BE HELD FOR 1 HR BEFORE AND 2 HRS AFTER DOSE ADMINISTRATION</li> <li>- Consider using the high end of the dose range (especially if considering J-tube administration) OR consider IV route or alternative antibiotics</li> </ul>

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Clindamycin		- ET: May open capsules and empty contents. Dissolve in 15 mL water. Avoid inhalation of capsule contents.
Clopidogrel (Plavix®)		- ET: May crush tablets and disperse in water. Tablets will not dissolve easily.
Colchicine	Reproductive risk	- Do not crush. Use dissolve and dose method
Dabigatran (Pradaxa®)	Breaking or opening capsules will increase absorption	DO NOT CRUSH - Use alternate anticoagulant therapy
Desvenlafaxine (Pristiq®)	Slow release	DO NOT CRUSH - Consider venlafaxine as alternative (see below)
Dexamethasone	Compounded liquid contains sorbitol	- ET: May crush tablets and disperse in at least 10 mL of water
Diclofenac/Misoprostol (Arthrotec®)	Enteric coated	- Consider alternate NSAID with misoprostol
Digoxin (Lanoxin®)	Absorption is reduced in lower GIT High-fibre feeds slows and reduces absorption (monitor levels)	- Crush tablets (preferred) and disperse in at least 10 mL of water OR liquid formulation available at increased cost - J-tube administration may result in lower plasma concentrations. Monitor levels.
Diltiazem (Cardizem®, Cardizem CD®, Tiazac®, Tiazac XC®)	Plain tablets are not described as slow release, but releases drug over 3 hours. Crushing tablet destroys integrity of slow-release formulation. SR, CD, ER, XC formulations are extended release and cannot be crushed	- May crush plain tablets if necessary. Divide total daily dose QID OR - if large-bore tube, consider diltiazem CD or ER capsules – open and flush intact beads down tube OR - consider alternate therapy with amlodipine
Dipyridamole/ASA (Aggrenox®)	Capsule contains ASA tablet and extended release dipyridamole beads. Crushing beads destroys integrity of extended-release formulation	- Change to plain dipyridamole tablet (dose divided QID) and ASA chewable tablet OR - switch to alternative antiplatelet agent OR - If large bore tube, consider opening capsule – contents include an ASA tablet that may be crushed. Flush intact dipyridamole ER beads down tube. Caution since granules could block the tube.
Donepezil (Aricept®)		- ET: Tablets can be crushed and suspended in water immediately prior to administration
Doxepin (Sinequan®)		- ET: Capsule may be opened and powder administered mixed with 15 mL water

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Duloxetine (Cymbalta®)	Extended release. Duloxetine is acid labile. Mixing capsule contents with water dissolves the gastro-resistant coating	DO NOT CRUSH. - PO: Capsule may be opened and sprinkled on soft food but not chocolate. Do not chew or crush pellets. - ET: Do not give via feeding tube. Consider switching to alternative antidepressant (e.g. venlafaxine – see below)
Dutasteride (Avodart®)	Reproductive risk. Contact with contents of opened capsules can cause oropharyngeal irritation	- Consider alternate therapy with finasteride
Erythromycin (Eryc®)	Liquid contains sorbitol; high osmolality may cause diarrhea Capsules contain enteric coated beads	DO NOT CRUSH. - PO: Twist to open capsule and sprinkle contents on soft food. Do not chew or crush pellets - ET: use suspension and dilute with 30 mL water or consider alternative antibiotic
Esomeprazole (Nexium®)	Delayed release granules contained in tablet. Crushing destroys enteric coating, exposing the drug to inactivation by the stomach and decreased absorption. No information on how J-tube administration effects the dissolution profile	DO NOT CRUSH - ET: For tubes 8Fr or larger, disperse tablet in 50 mL of water and administer via tube. May reduce volume to 25 mL for 14Fr or larger. Flush after with 25-50 mL water
Famciclovir (Famvir®)	Difficult to crush and does not disperse readily in water. May result in reduction of dose delivered	- ET: May crush and disperse in at least 15 mL water immediately prior to administration OR - consider alternative therapy with acyclovir
Felodipine (Plendil®, Renedil®)	Extended release	DO NOT CRUSH - Consider change to amlodipine and titrate dose to response
Ferrous sulfate, fumarate or gluconate	Iron may bind with enteral formula. Acidity may cause feeds to clump. Absorbed in duodenum and proximal jejunum so JT may not be effective. Liquid contains sorbitol	- Tablets are difficult to crush. - ET: Use liquid diluted with at least 30 mL water. Consider higher doses if JT necessary.
Finasteride (Proscar®)	Reproductive risk	- Use dissolve and dose method
Fluconazole (Diflucan®)	Reproductive risk	- May crush and give via ET or use dissolve-and-dose method - Liquid is available at an increased cost

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Fluoxetine (Prozac®)		- ET: May open capsule and mix with 10 mL of water OR liquid formulation is available at an increased cost
Gabapentin (Neurontin®)		- ET: Capsule may be opened and powder administered via feeding tube mixed with 15 mL water
Galantamine ER (Reminyl ER®)	Capsule contains extended release pellets	DO NOT CRUSH - PO: Open capsule carefully and sprinkle pellets on applesauce or yogurt; administer immediately - ET: Consider switching to donepezil
Gliclazide (Diamicron MR®)	Modified release	DO NOT CRUSH - Change to gliclazide immediate release tablets - NOTE: Gliclazide MR® 30 mg daily is approximately equivalent to gliclazide immediate release 80 mg
Hydralazine tablets	Drug-nutrient interaction can decrease absorption and serum concentrations	- ET: May crush and give via feeding tube. Dose adjustment may be required based on patient response.
Hydromorphone Sustained Release (Hydromorph Contin®)	Sustained release; pellets of Hydromorph Contin® may clog tube	DO NOT CRUSH. - PO: Open and sprinkle pellets onto food for oral administration - ET: consider immediate release tablets or alternative opioid
Isosorbide-5-mononitrate (Imdur®)	Extended release	DO NOT CRUSH. - Change to isosorbide dinitrate with adjusted dose and frequency, or nitroglycerin patch
Itraconazole (Sporanox®)	Requires acid environment for absorption. Not absorbed from jejunum. Capsule absorption best with food. Liquid best with empty stomach. Liquid contains sorbitol	DO NOT CRUSH - Capsules: open and give with food or suspended in water to give via large bore ET - Liquid: give undiluted; hold feeds 2 hr before and 1 hr after. May administer with cola to reduce pH and increase absorption. - Do not give via JT
Lactulose	Liquid has high viscosity	- ET: Dilute with 2-3 times the volume of water
Lansoprazole (Prevacid®)	Oral disintegrating tablet (ODT) is suitable for dysphagia and ET. Absorbed in small bowel	DO NOT CRUSH OR CHEW. - Oral: Place ODT on tongue to disintegrate or disperse in water. If using capsule: sprinkle contents on applesauce - ET: disperse ODT in 10 mL of water for tubes larger than 8Fr or consider switching to pantoprazole liquid

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Medication	Issues/Comments	Recommendations/Alternative Products
Levodopa/Carbidopa (Sinemet CR®)	Controlled release. Bioavailability should be unaffected by J-tube delivery, but time to peak may be shorter	DO NOT CRUSH - Use immediate release tablets. MUST adjust dose and frequency. Total daily dose divided TID or more frequently. - If poor control, consider holding feeds one hour before and after administration.
Levofloxacin (Levaquin®)	Binds to feeds. J-tube may be beyond absorption site and therefore a less effective route	- Feeds must be held for 1 hr before and 2 hrs after dose administration. - Consider using the high end of the dose range OR - Consider IV route or alternative antibiotic - Do NOT administer via J-tube
Levothyroxine (Synthroid®, Eltroxin®)	May bind to tube. Absorption may be reduced with feeds.	- May be crushed. - ET: Co-administration with enteral nutrition is known to decrease bioavailability. Withholding enteral nutrition results in only limited success. A temporary increase in dose may be required. Close monitoring of thyroid is recommended with long term feeds
Linagliptin (Trajenta®)	Film coated	- ET: May be crushed and dispersed in water
Lithium carbonate		- Contents of plain capsules can be used for PO or tube administration. - DO NOT CRUSH slow release tablets - Monitor serum concentration after 5 days if switching from slow release formulation to plain capsules
Memantine (Ebixa®)	Film coated	- Film coated tablets will disperse in water after 5 minutes without crushing
Methylphenidate extended release (Concerta®, Biphentin®, Ritalin® SR)	Sustained release. Concerta® contains a nonabsorbable shell	DO NOT CRUSH - Change to plain tablets and adjust dosing to BID or TID
Metoclopramide (Maxeran®)	Liquid contains sorbitol and has high osmolality	- Crush tablets and give with 10 mL water (preferred) OR - Liquid formulation is available at increased cost
Metoprolol SR (Lopresor SR®)	Slow release	- Change to plain tablets crushed – total daily dose divided BID
Metronidazole tablets or capsule (Flagyl®)		- ET: May crush tablets or open contents of capsule for tube administration

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Levofloxacin (Levaquin®)	Binds to feeds. J-tube may be beyond absorption site and therefore a less effective route	- Feeds must be held for 1 hr before and 2 hrs after dose administration. - Consider using the high end of the dose range OR - Consider IV route or alternative antibiotic - Do NOT administer via J-tube
Levothyroxine (Synthroid®, Eltroxin®)	May bind to tube. Absorption may be reduced with feeds.	- May be crushed. - ET: Co-administration with enteral nutrition is known to decrease bioavailability. Withholding enteral nutrition results in only limited success. A temporary increase in dose may be required. Close monitoring of thyroid is recommended with long term feeds
Linagliptin (Trajenta®)	Film coated	- ET: May be crushed and dispersed in water
Lithium carbonate		- Contents of plain capsules can be used for PO or tube administration. - DO NOT CRUSH slow release tablets - Monitor serum concentration after 5 days if switching from slow release formulation to plain capsules
Memantine (Ebixa®)	Film coated	- Film coated tablets will disperse in water after 5 minutes without crushing
Methylphenidate extended release (Concerta®, Biphentin®, Ritalin® SR)	Sustained release. Concerta® contains a nonabsorbable shell	DO NOT CRUSH - Change to plain tablets and adjust dosing to BID or TID
Metoclopramide (Maxeran®)	Liquid contains sorbitol and has high osmolality	- Crush tablets and give with 10 mL water (preferred) OR - Liquid formulation is available at increased cost

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Medication	Issues/Comments	Recommendations/Alternative Products
Metoprolol SR (Lopresor SR®)	Slow release	- Change to plain tablets crushed – total daily dose divided BID
Metronidazole tablets or capsule (Flagyl®)		- ET: May crush tablets or open contents of capsule for tube administration
Morphine SR (M-Eslon®, MS Contin®, Kadian®)	Extended release	DO NOT CRUSH - PO: M-Eslon® capsules may be opened and sprinkled on food. Granules should not be crushed or chewed. - ET: open M-Eslon® capsule and insert granules directly into the tube cup for tubes 12Fr or greater. Do not mix the granules with water first because the granules will stick to the syringe. Then flush granules through the tube with water (at least 40 mL). Immediate release tablets are also available (total daily dose divided Q4H)
Moxifloxacin (Avelox®)	Binds to feeds	- Tablets can be crushed - ET: Hold feed 1 hr before and 2 hr after dose. Consider using high end of dose range, or give IV
Nifedipine XL (Adalat XL®)	Sustained release in nonabsorbable shell	DO NOT CRUSH - Alternate dihydropyridine calcium channel blocker (e.g. amlodipine)
Nimodipine (Nimotop®)	Extremely light sensitive. If added to water, it will recrystallize and bioavailability will be reduced	- Avoid crushing tablet. - If absolutely necessary, tablets should be crushed at bedside and administered immediately
Olanzapine plain or ODT tablets (Zyprexa®, Zyprexa Zydis®)		- Crush plain tablets or use ODT formulation - ET: Disperse ODT in water
Ondansetron (Zofran®)		- Tablets can be crushed - Reserve oral disintegrating tablets and liquid formulation for paediatric patients
Oseltamivir (Tamiflu®)		- Disperse contents of capsule in 10-20 mL water. - Reserve suspension for paediatric patients or ET patients

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Oxybutynin XL (Ditropan XL®)	Extended release in nonabsorbable shell	DO NOT CRUSH - Change to plain oxybutynin tablets. Divide total daily dose BID
Oxycodone (OxyNEO®)	Slow release	DO NOT CRUSH - ET: Change to plain oxycodone tablet crushed (preferred); Total daily dose divided Q4H. Oral syrup also available
Pantoprazole (Pantoloc®)	Enteric coated. Crushing exposes the drug to inactivation by the acidity of the stomach	- Use lansoprazole oral disintegrating tablets for adult patients not concomitantly taking clopidogrel - Use pantoprazole suspension prepared by pharmacy for adult patients concomitantly taking clopidogrel or paediatric patients. -
Pentoxyfylline (Trental®)	Sustained release	DO NOT CRUSH - Reassess need
Potassium chloride (Slow-K®)	Extended release. Some liquid formulations contain sorbitol	DO NOT CRUSH - ET: Dilute liquid well with at least 30 mL of water (to reduce osmotic and irritant effects) OR consider IV route
Ranitidine (Zantac®)	Primarily absorbed post-pyloric. Osmolality of the liquid may be too high for intra-jejunal administration	- Tablet can be easily crushed (preferred) - Liquid formulation is available at an increased cost, however, DO NOT administer liquid formulation via J-tube due to high osmolality.
Risedronate (Actonel®, Actonel DR®)	Food decreases absorption. Causes esophageal irritation. Use with caution in delayed gastric emptying and patients unable to sit or stand upright.	DO NOT CRUSH - Weekly formulation may be dissolved in 10 mL water. Flush with at least 50 mL water. Hold feeds 2 hr before and 2 hr after - Patient must remain sitting upright or standing for 30 minutes after dose
Rivaroxaban (Xarelto®)	Reduced absorption if given distal to stomach	- Tablets may be crushed and mixed with 50 mL water. - Not recommended for tubes that exit beyond the stomach due to risk of decreased efficacy
Senna (Senokot®)	High osmolality which adds to laxative effect	- May crush tablets or give liquid - ET: crush tablets or dilute liquid in 30 mL water

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Sitagliptin (Januvia®, Janumet XR®)		DO NOT CRUSH XR product - IR tablets may be crushed and mixed with water.
Sucralfate suspension (Sulcrate®)	Binds to feeds. Requires stomach and duodenal acid to work	- Do not give via post pyloric tubes. - Consider alternative. - If must use, dilute 1:1 with water, or disperse tablet in 10-15 mL water.
Sulfasalazine EN tablets (Salazopyrin EN®)	Enteric coated	DO NOT CRUSH - Use sulfasalazine regular tablets
Tamsulosin CR, SR (Flomax® CR, SR)	Controlled release tablet Sustained release capsule	DO NOT CRUSH CR tablets; Not for tube administration  Tamsulosin SR capsules can be opened and contents mixed with acidic solution (e.g. apple or orange juice) and administer PO or via tube - Do NOT mix with water as this causes clumping and may block tube
Theophylline SR (TheoDur®, Uniphyll®)	Sustained release	DO NOT CRUSH - ET: Reassess need or change to theophylline liquid in 30 mL water divided QID. - Consider monitoring levels
Medication	Issues/Comments	Recommendations/Alternative Products
Venlafaxine (Effexor XR®)	Sustained release	- PO: Open capsule and add pellets to food and swallow immediately - ET: administer beads via feeding tube if size 14Fr or greater. Irrigate the tube with water 2-3 times.
Verapamil SR (Isoptin SR®, Chronovera®)	Slow release	DO NOT CRUSH SR tablets - Consider plain verapamil tablets crushed – total daily dose divided TID
Warfarin (Coumadin®)	Reproductive risk. Binds to soya protein in feeds. Feeds may contain vitamin K	- Crush and suspend in water OR use dissolve and dose - Monitor INR for potential drug-enteral feed interactions

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Morphine SR (M-Eslon <sup>®</sup> , MS Contin <sup>®</sup> , Kadian <sup>®</sup> )	Extended release	DO NOT CRUSH <ul style="list-style-type: none"> <li>- PO: M-Eslon<sup>®</sup> capsules may be opened and sprinkled on food. Granules should not be crushed or chewed.</li> <li>- ET: open M-Eslon<sup>®</sup> capsule and insert granules directly into the tube cup for tubes 12Fr or greater. Do not mix the granules with water first because the granules will stick to the syringe. Then flush granules through the tube with water (at least 40 mL). Immediate release tablets are also available (total daily dose divided Q4H)</li> </ul>
Moxifloxacin (Avelox <sup>®</sup> )	Binds to feeds	<ul style="list-style-type: none"> <li>- Tablets can be crushed</li> <li>- ET: Hold feed 1 hr before and 2 hr after dose. Consider using high end of dose range, or give IV</li> </ul>
Nifedipine XL (Adalat XL <sup>®</sup> )	Sustained release in nonabsorbable shell	DO NOT CRUSH <ul style="list-style-type: none"> <li>- Alternate dihydropyridine calcium channel blocker (e.g. amlodipine)</li> </ul>
Nimodipine (Nimotop <sup>®</sup> )	Extremely light sensitive. If added to water, it will recrystallize and bioavailability will be reduced	<ul style="list-style-type: none"> <li>- Avoid crushing tablet.</li> <li>- If absolutely necessary, tablets should be crushed at bedside and administered immediately</li> </ul>
Olanzapine plain or ODT tablets (Zyprexa <sup>®</sup> , Zyprexa Zydis <sup>®</sup> )		<ul style="list-style-type: none"> <li>- Crush plain tablets or use ODT formulation</li> <li>- ET: Disperse ODT in water</li> </ul>
Ondansetron (Zofran <sup>®</sup> )		<ul style="list-style-type: none"> <li>- Tablets can be crushed</li> <li>- Reserve oral disintegrating tablets and liquid formulation for paediatric patients</li> </ul>
Oseltamivir (Tamiflu <sup>®</sup> )		<ul style="list-style-type: none"> <li>- Disperse contents of capsule in 10-20 mL water.</li> <li>- Reserve suspension for paediatric patients or ET patients</li> </ul>
Oxybutynin XL (Ditropan XL <sup>®</sup> )	Extended release in nonabsorbable shell	DO NOT CRUSH <ul style="list-style-type: none"> <li>- Change to plain oxybutynin tablets. Divide total daily dose BID</li> </ul>

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Oxycodone (OxyNEO®)	Slow release	DO NOT CRUSH - ET: Change to plain oxycodone tablet crushed (preferred); Total daily dose divided Q4H. Oral syrup also available
Pantoprazole (Pantoloc®)	Enteric coated. Crushing exposes the drug to inactivation by the acidity of the stomach	- Use lansoprazole oral disintegrating tablets for adult patients not concomitantly taking clopidogrel - Use pantoprazole suspension prepared by pharmacy for adult patients concomitantly taking clopidogrel or paediatric patients. -
Pentoxyfylline (Trental®)	Sustained release	DO NOT CRUSH - Reassess need
Potassium chloride (Slow-K®)	Extended release. Some liquid formulations contain sorbitol	DO NOT CRUSH - ET: Dilute liquid well with at least 30 mL of water (to reduce osmotic and irritant effects) OR consider IV route
Ranitidine (Zantac®)	Primarily absorbed post-pyloric. Osmolality of the liquid may be too high for intra-junal administration	- Tablet can be easily crushed (preferred) - Liquid formulation is available at an increased cost, however, DO NOT administer liquid formulation via J-tube due to high osmolality.
Risedronate (Actonel®, Actonel DR®)	Food decreases absorption. Causes esophageal irritation. Use with caution in delayed gastric emptying and patients unable to sit or stand upright.	DO NOT CRUSH - Weekly formulation may be dissolved in 10 mL water. Flush with at least 50 mL water. Hold feeds 2 hr before and 2 hr after - Patient must remain sitting upright or standing for 30 minutes after dose
Rivaroxaban (Xarelto®)	Reduced absorption if given distal to stomach	- Tablets may be crushed and mixed with 50 mL water. - Not recommended for tubes that exit beyond the stomach due to risk of decreased efficacy
Senna (Senokot®)	High osmolality which adds to laxative effect	- May crush tablets or give liquid - ET: crush tablets or dilute liquid in 30 mL water
Sitagliptin (Januvia®, Janumet XR®)		DO NOT CRUSH XR product - IR tablets may be crushed and mixed with water.

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Medication	Issues/Comments	Recommendations/Alternative Products
Sucralfate suspension (Sulcrate®)	Binds to feeds. Requires stomach and duodenal acid to work	<ul style="list-style-type: none"> <li>- Do not give via post pyloric tubes.</li> <li>- Consider alternative.</li> <li>- If must use, dilute 1:1 with water, or disperse tablet in 10-15 mL water.</li> </ul>
Sulfasalazine EN tablets (Salazopyrin EN®)	Enteric coated	<p>DO NOT CRUSH</p> <ul style="list-style-type: none"> <li>- Use sulfasalazine regular tablets</li> </ul>
Tamsulosin CR, SR (Flomax® CR, SR)	Controlled release tablet Sustained release capsule	<p>DO NOT CRUSH CR tablets; Not for tube administration</p> <p>Tamsulosin SR capsules can be opened and contents mixed with acidic solution (e.g. apple or orange juice) and administer PO or via tube</p> <ul style="list-style-type: none"> <li>- Do NOT mix with water as this causes clumping and may block tube</li> </ul>
Theophylline SR (TheoDur®, Uniphyll®)	Sustained release	<p>DO NOT CRUSH</p> <ul style="list-style-type: none"> <li>- ET: Reassess need or change to theophylline liquid in 30 mL water divided QID.</li> <li>- Consider monitoring levels</li> </ul>
Venlafaxine (Effexor XR®)	Sustained release	<ul style="list-style-type: none"> <li>- PO: Open capsule and add pellets to food and swallow immediately</li> <li>- ET: administer beads via feeding tube if size 14Fr or greater. Irrigate the tube with water 2-3 times.</li> </ul>
Verapamil SR (Isoptin SR®, Chronovera®)	Slow release	<p>DO NOT CRUSH SR tablets</p> <ul style="list-style-type: none"> <li>- Consider plain verapamil tablets crushed – total daily dose divided TID</li> </ul>
Warfarin (Coumadin®)	Reproductive risk. Binds to soya protein in feeds. Feeds may contain vitamin K	<ul style="list-style-type: none"> <li>- Crush and suspend in water OR use dissolve and dose</li> <li>- Monitor INR for potential drug-enteral feed interactions</li> </ul>

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