Medication	Geriatric Dosing	Clinical Pearls	Class Clinical Pearls
Antidiarrheal Agents			
Probiotics	Varies per product	• Use for prevention of antibiotic-associated diarrhea • Start early when symptoms appear • Separate by at least 2 hours from antibiotics	Data is mixed and inconsistent due to product and study variations
Bismuth subsalicylate	Diarrhea: 524 mg every 30-60 minutes or 1,050 mg every 60 minutes as needed for up to 2 days (max 4,200 mg/day) Traveler's diarrhea prophylaxis (off-label): 524 mg four times daily with meals and at bedtime during period of risk	• 3.7X greater odds of diarrhea relief for those with infectious diarrhea compared to placebo • Available in multiple formulations • May cause darkening of tongue and stool (concern for those monitoring for gastrointestinal bleed) • Can cause tinnitus at high doses • Caution for those at risk of bleeding (i.e., on anticoagulation)	
Loperamide	Acute diarrhea: 4 mg, followed by 2 mg after each loose stool for up to 2 days (max 16 mg/day) Chronic diarrhea: Use lowest dose to control symptoms, 4-8 mg per day as single or divided doses (usually up to 10 days, only in short courses)	• Mu-opioid receptor agonist, anti-peristaltic • Do not use if diarrhea + fever or dysentery (could prolong exposure of pathogen in GI tract) • Symptom reduction is quick (within 30-60 minutes) and decreases symptoms by about one day compared to placebo • Can be used for IBS-D • Black box warning for QTc-prolongation and cardiovascular risk at high doses • Caution for opioid-related effects at higher than recommended doses (sometimes used by patients withdrawing from opioids for this reason)	Concern for opioid-like side effects and adverse outcomes (e.g., respiratory and CNS depression)
Diphenoxylate-atropine	5 mg four times daily until control achieved usually < 10 days (max 20 mg/day)	• Similar to meperidine, atropine added to prevent misuse • Opioid and anticholinergic side effects limit use • Avoid use per AGS Beers Criteria	

		• Not as effective as loperamide	
Tincture of opium	6 mg of undiluted opium tincture (10 mg/mL) four times daily	• Safety concern with dosing in mg, mL, and drops (contains 10 mg/mL of morphine) and confusion with paregoric (camphorated tincture of opium, 0.4 mg/mL of morphine)	
Eluxadoline	100 mg twice daily; decrease to 75 mg twice daily if unable to tolerate 100 mg dose 75 mg twice daily: if eGFR < 60 mL/min/1.73 m^3 or mild to moderate hepatic impairment (Child-Pugh class A or B)	• Mu- and kappa-opioid receptor agonist and delta-opioid receptor antagonist • Use in IBS-D • Concern for pancreatitis noted in post-marketing surveillance, contraindicated in patients who do not have a gallbladder, significant pancreatic disease, liver disease, alcohol use • Take with food	
Alosetron	Women only: 0.5 mg twice daily, if becomes constipated reduce to once daily Titrate to 1 mg twice daily after 4 weeks (max 2 mg/day)	• High risk for severe constipation and ischemic colitis prompted REMS program for this product • Older adults may be at higher risk of complications (constipation)	
Bulk-Forming Laxatives			
Psyllium (natural)	2.5-30 g per day in divided doses (1 tablespoon ≈ 3.5 g, 1 capsule ≈ 400-520 mg)	• Onset of action 12-72 hours • Inhalation of dust can cause sensitivity (e.g., wheezing, cough) • Mix in water or juice, capsules taken one at a time • Separate other medications by 2 hours	Side effects include bloating, flatulence Avoid in impaction, obstruction, esophageal strictures, difficulty swallowing Take with fluids
Methylcellulose	Up to 1 tablespoon (≈ 2 g) or 2 caplets (500 mg/caplet) up to 6 times per day (max 12 caplets/day)	• Onset of action 12-72 hours • Mix in cold water	
Polycarbophil	1.25 g one to four times daily (max 8 tablets (5 g)/day)	• Onset of action 24-48 hours • Separate other medications by 2 hours • Chew tablets thoroughly before swallowing	
Wheat dextrin	1-3 tablets (1 g/caplet) or 2 teaspoons (4 g) up to three times daily	• Onset of action 24-48 hours • Mix in hot or cold beverages, soft foods	
Osmotic Laxatives			
Polyethylene glycol (PEG)	17 g dissolved in 120-240 mL beverage (water, juice, soda, coffee, tea) once daily	• Onset of action 1-4 days • Higher doses (34 g) associated with more side effects (bloating, flatulence, cramping)	Excessive use can lead to electrolyte abnormalities

		• Usually use short term (1-2 weeks)	
Lactulose	10-20 g (15-30 mL) daily (max 40 g (60 mL)/day)	• Onset of action 1-2 days • Lactulose oral solution can be mixed with fruit juice, water, milk • Use with caution in patients with diabetes (has galactose and lactose)	
Sorbitol	30-45 mL once daily		
Glycerin	1 suppository (2-3 g) once daily (retain 15 minutes)	• Onset 15-60 minutes • Can cause rectal irritation	
Magnesium hydroxide	2,400-4,800 mg daily or in divided doses	• Onset 30-180 minutes • Drink 8 ounces of water after dose • Caution in patients with renal impairment due to accumulation of magnesium • Caution for patients with neuromuscular disease (e.g., myasthenia gravis)	
Magnesium citrate	155-300 mL daily or in divided doses (can chill the solution before ingesting)		
Stimulant Laxatives			
Bisacodyl	Oral: 5-15 mg daily Rectal: 10 mg daily (retain for 5-20 minutes)	• Onset of action 6-12 hours (oral) 15-60 minutes (rectal) • Do not crush or chew oral tablet, separate 1 hour from daily and antacids	Side effects include abdominal cramps, electrolyte disturbances, nausea, vomiting
Sennosides	Oral tablet: 17.2-50 mg once or twice daily (max 34.4 mg/day) Syrup: 17.6-26.4 mg (10-15 mL) once or twice daily (max 42.8 mg/day)	• Onset of action 6-12 hours • Take at bedtime so BM in morning • Syrup can be taken with juice, milk, mixed in ice cream • Separate other medications by 2 hours • Can cause melanosis coli with chronic use	
Miscellaneous Treatments for Constipation			
Docusate	Docusate sodium: 50-360 mg once daily or in divided doses Docusate calcium: 240 mg once daily	• Available as capsule, tablet, syrup, liquid, enema • Can mix liquid in milk or fruit juice to mask taste and prevent throat irritation • Ensure adequate fluid intake	Limited evidence available supporting use Opportunity for deprescribing
Naldemedine	0.2 mg once daily	• For opioid-induced constipation • Evidence for those who have taken an opioid ≥ 4 weeks • Substrate of CYP3A4 and p-glycoprotein	Peripherally acting mu-opioid receptor antagonist Can cause GI perforation in patients at high risk May increase risk of opioid withdrawal
Naloxegol	25 mg once daily (can reduce to 12.5 mg if not tolerated)	• For opioid-induced constipation • Pegylated derivative of naloxone	

	If CrCl < 60 mL/min and ESRD initial dose 12.5 mg once daily	• Substrate of CYP3A4 and p-glycoprotein • Discontinue all laxatives before use • Avoid use in severe hepatic impairment • Tablets can be crushed and mixed with water • Administer on empty stomach	or reduced analgesia
Methylnaltrexone	Oral: 450 mg once daily for 3 days (150 mg daily if CrCl < 60 mL/min) SubQ: 12 mg once daily for 3 days (6 mg daily if CrCl < 60 mL/min)	• For opioid-induced constipation • Quaternary ammonium cation • Can also reverse itching related to opioids • Discontinue all laxative before use • Take on an empty stomach	
Lubiprostone	OIC and CIC: 24 mcg twice daily IBS-C (females ≥ 18 only): 8 mcg twice daily	• Chloride channel activator enhances chloride-rich intestinal fluid secretion • For opioid-induced constipation, IBS-C, and chronic idiopathic constipation • Efficacy noted in subgroup analysis of older adults and anecdotally for nursing home residents • Dose adjustments for moderate to severe hepatic impairment • Nausea is predominant side effect (take with meals)	
Linaclotide	CIC: 145 mcg once daily; 72 mcg once daily based on tolerability IBS-C: 290 mcg once daily	• Guanylate cyclase-C receptor agonist, causing downstream chloride and bicarbonate secretion • pH-independent (active in small and large intestine) • Lower doses shown to be effective in older adults • For IBS-C and chronic idiopathic constipation • Take on empty stomach, avoid high-fat breakfast • Do not chew or crush, can open capsules in applesauce or water	Diarrhea is most common side effect
Plecanatide	CIC and IBS-C: 3 mg once daily	• Guanylate cyclase-C receptor agonist, causing downstream chloride and bicarbonate secretion	

		• pH-dependent (mostly in small intestine) • Data suggests well tolerated in older adults • For IBS-C and chronic idiopathic constipation • Take with or without food • Tablets can be crushed in applesauce or water	
Prucalopride	2 mg once daily (can titrate to 4 mg after 2-4 weeks) CrCl < 30 mL/min: 1 mg once daily	• Selective, 5-HT_4 receptor agonist stimulates peristaltic reflex, secretions, and GI motility • For chronic idiopathic constipation • Data shows well tolerated in older adults (some studies started at 1 mg daily dose) • Can add on laxative if no bowel movement within 3 days	Nausea, headache, and diarrhea are common side effects May cause CNS effects (dizziness, fatigue) and suicidal ideation
H2-Receptor Antagonists			
Famotidine	10 mg twice daily, can increase to 20 mg twice daily for 14 days Can also be given as needed 10-60 minutes before meals (max: 40 mg/day)	• Consider reduction in oral dose by 50% if CrCl 30-60 mL/min and 75% if CrCl < 30 mL/min • Available in multiple dosage forms (e.g., tablet, suspension, intravenous)	If CrCl < 50 mL/min, reduce dose (AGS Beers Criteria) Avoid in patients with delirium (AGS Beers Criteria) Side effects include headache and CNS effects, and thrombocytopenia Can cause vitamin B12 deficiency with prolonged therapy
Cimetidine	400 mg four times daily or 800 mg twice daily Severe renal impairment (CrCl < 10 mL/min): 300 mg twice daily	• Can cause a transient rise in serum creatinine • Watch for drug interactions (especially narrow therapeutic window	
Nizatidine	150 mg twice daily CrCl 20-50 mL/min: 150 once daily CrCl < 20 mL/min: 150 mg every other day	• Dose adjustments needed for renal impairment • Available in capsule and solution	
Proton Pump Inhibitors			
Esomeprazole	20 mg daily x 4-8 weeks	• Also available over-the-counter • Available in capsule, tablet, packet, IV solution • Dose adjustment for Child-Pugh class C	Bioavailability may be increased in older adults Treat for up to 8 weeks, may continue for additional 4-8 weeks, slow taper needed after
Dexlansoprazole	30 mg daily x 4-8 weeks	• Dual, delayed release (first in duodenum, then small intestine) so no regard to meals necessary	

		• Avoid use for Child-Pugh class C	prolonged therapy (≈ 6 months) to prevent rebound symptoms Per AGS Beers Criteria, avoid use for > 8 weeks unless high-risk Consider genetic polymorphisms with CYP2C19 and drug interactions (e.g., clopidogrel) See slide for side effects and long-term use consequences
Lansoprazole	Mild: 15 mg daily x 4-8 weeks, can increase to 30 mg daily Severe: 30 mg daily x 8 weeks	• Dose adjustment for Child-Pugh class C (15 mg daily) • Available in capsule and oral disintegrating tablet	
Omeprazole	Mild: 10 mg once daily, increase to 20 mg after 4-8 weeks Severe: 20-40 mg daily x 4-8 weeks OTC: 20 mg daily x 14 days (can repeat every 4 months)	• Also available over-the-counter • Hepatic impairment consider max dose of 20 mg/day • Available in capsule, packet, tablet • Bioavailability increased in patients of Asian descent (may need dose reduction)	
Pantoprazole	Mild: 20 mg daily, can increase to 40 mg daily after 4-8 weeks Severe: 40 mg daily x 8 weeks (max 80 mg daily)	• No hepatic dose adjustment (doses > 40 mg daily not studied) • Available in tablet, packet, IV solution • Minor interactions with CYP2C19, 2D6, 3A4	
Rabeprazole	Mild: 10-20 mg daily x4-8 weeks Severe: 20 mg daily x 8 weeks (max 40 mg/day)	• Minor CYP2C19, 3A4 interactions • Avoid use in severe hepatic impairment • Available as sprinkle capsule, tablet • In older adults, AUC values doubled (C_{max} increased by 60%)	
Potassium Competitive Acid Blockers (PCAB)			
Vonoprazan	For treatment of erosive GERD: 20 mg daily for 8 weeks For maintenance healing: 10 mg daily up to 6 months	• Also indicated for treatment of *H. pylori* in combination with antibiotics • If eGFR ≤ 30 mL/min: erosive GERD, reduce dose to 10 mg daily; not recommended for *H. pylori* • Dose adjustments for Child-Pugh class B and C (10 mg)	Generally well-tolerated Major substrate of CYP3A4, minor 2B6, 2C19, 2C9, 2D6 and weak inhibitor of 2C19 and 3A4
Antiemetics			
Anticholinergics	Scopolamine 1 patch (1 mg/3 days) for 72 hours (or 24 hours after surgery); (max 2 patches)	Recommended to avoid in order adults (AGS Beers Criteria)	Side effects include CNS effects, visual disturbances, dry mouth
Antihistamines	Diphenhydramine 25 mg q4-6 hours Dimenhydrinate 50-100 mg q4-6 hours (max 400 mg/day) Meclizine 12.5-25 mg q6-8h (max 100 mg/day)		

NK1 Antagonists	Aprepitant, fosaprepitant, netupitant, rolapitant	• Dose based on emetogenicity of chemotherapy regimen • Prevent acute and delayed CINV • Work best in combination with serotonin antagonists • Rolapitant is a CYP2D6 inhibitor	CYP3A4 inhibitors (drug interactions)
Cannabinoids	Dronabinol 2.1-2.5 mg/m^2 1-3 hours before chemotherapy, then every 2-4 hours after (total 4-6 doses/day)	• Consider side effect profile (xerostomia, hypotension, dysphoria) • Available in oral solution, capsules • Take on empty stomach • Risk of falls for patients with dementia	Caution in uncontrolled cardiovascular disease, can cause paradoxical GI effects, seizures
D_2 Antagonists			
Phenothiazines	Prochlorperazine 5-10 mg q6-8 hours (max 40 mg/day) Chlorpromazine 10-25 mg q4-8 hours (max 150 mg/day) Perphenazine	• Available in oral, IV, IM, rectal • Can cause hypotension, neuroleptic malignant syndrome • Black box warning for patients with dementia • Prochlorperazine may preferred if QTc prolongation is a concern	Use the lowest dose possible and increase slowly Anticholinergic and CNS side effects limit use Contraindicated in Parkinson's disease
Butyrophenones	Haloperidol 0.5-2 mg q6-8 hours (max 20 mg/day) Droperidol 2.5 mg IV x1	• Available in oral, IV, subq • Risk for QTc prolongation	
Benzamides	Metoclopramide 5-20 mg x1, may repeat in 4-6 hours; reduce IV dose 50% if CrCl < 60 mL/min Trimethylbenzamide 300 mg three or four times daily; reduce dose or increase interval for CrCl ≤ 70 mL/min Domperidone 10 mg three times daily (max 30 mg/day)	• Available oral, IV, subq, nasal • Can cause tardive dyskinesia • Risk for QTc prolongation. prolactinemia • Trimethylbenzamide associated with hepatotoxicity • Domperidone contraindicated in moderate to severe hepatic impairment	CNS side effects limit use Contraindicated in Parkinson's disease
5-HT_3 Antagonists	Ondansetron 4 mg x 1 (max 24 mg/day) Granisetron (dose based on emetogenicity of chemotherapy regimen) Dolasetron (dose based on emetogenicity of chemotherapy regimen)	• Available in oral, IV, IM • Caution for QTc prolongation (stay under 16 mg/day for ondansetron)	Risk for serotonin syndrome, QTc prolongation Side effects include constipation, headache

	Palonosetron (dose based on emetogenicity of chemotherapy regimen)		
Olanzapine	5-10 mg on day of chemotherapy, followed by 5-10 mg on days 2-4	• Available in oral, oral disintegrating tablet, IM • Black box warning for use in patients with dementia • Use lowest dose possible	Side effects include anticholinergic, extrapyramidal, blood dyscrasias, hypotension, delirium, QTc prolongation
Treatments for Anemia			
Oral iron	Ferrous sulfate 65 mg elemental Fe once every other day or three times a week Ferrous fumarate 29-150 mg elemental Fe once every other day or three times a week Ferrous gluconate 27-38 mg elemental Fe once every other day or three times a week Polysaccharide-iron complex 50-200 mg elemental Fe once every other day or three times a week	• Low cost, available, low adverse event potential • GI side effects are sometimes not tolerated and may affect adherence • May need to take for many months • To improve adherence, can change to daily dosing	
IV iron	Ferric carboxymaltose: ≥ 50 kg 1-2 doses of 750 mg given 1 week apart; < 50 kg 1-2 doses of 15 mg/kg given 1 week apart Ferumoxytol 1020 mg x 1 or 2 doses of 510 mg, given 3-7 days apart Ferric gluconate 125-250 mg daily, give multiple doses Iron sucrose 100-300 mg daily, give multiple doses Iron dextran 1000 mg x 1 or multiple doses of 100 mg	• Effective, rapid correction • Can give large doses, but need to be given in infusion center/inpatient • Little to no side GI side effects • Some require test doses due to allergenic potential and infusion-related reactions	
Vitamin B12	Cyanocobalamin 1000 mcg IV weekly until deficiency corrected then once per month Oral 1000 mcg daily; if impaired absorption 1000-2000 mcg daily	• Contains cyanide moiety • Available in IM, deep subq, oral, sublingual formulations • Intranasal not recommended due to variable efficacy	Rare hypersensitivity reaction and acneiform eruptions have been reported
Folic acid	1-5 mg daily	• Well tolerated • Response should be seen within 2-4 weeks	

		• Supplementation can mask hematologic signs of B12 deficiency	
ESA	Epoetin alfa 50-100 units/kg weekly Darbepoetin alfa 0.45 mcg/kg once monthly	• Use the lowest dose sufficient to reduce the need for blood transfusions • Treat iron deficiency first before considering ESA • Hgb < 12 to start, adjustments made if Hgb does not increase > 1 g/dL in 4 weeks (increase 25%), if Hgb increased > 1 g/dL in 2-weeks (reduce 25%)	Boxed warnings for cardiovascular death, MI, stroke, VTE, thrombosis Side effects include hypertension, headache, nausea, vomiting