

NAUSEA Didactic Table

Anti-Emetic	Receptors	Dosing	CSMC Formulary	Notes	Class Side Effects
<i>Dopamine</i>					
Haloperidol (Haldol)	dopamine (D2), highly selective	PO/IV: 0.5-2 mg q4- 12h, up to 5-20 mg/day	IV: CCP only SC/IM SL: 2mg/mL oral solution PO: 0.5mg, 1mg, 2mg, 5mg, 10mg, (+ oral solution)	PO = ½ IV Least sedating in class	EPS/TD side effects (akathisias, dystonic reactions, tremor) >May treat EPS side effects with diphenhydramine or benztropine Prolonged QTc (see pain card for relative QTc prolongation) Seizure (see pain card for relative seizure risk) Agranulocytosis, neutropenia
Prochlorperazine (Compazine)	Dopamine > histamine	PO/IV: 5-10mg q6-8h PR: 25 mg q12h	IV PR: 25mg PO: 5mg, 10mg	"preferred" dopamine-acting, IV- administered antiemetic while patients hospitalized due to stigma associated with haloperidol	
Chlorpromazine (Thorazine)	Dopamine = histamine > muscarinic	PO/IV: 12.5-25mg q4- 6h	IM only (no IV) PO: 10mg, 25mg, 100mg	Most sedating, monitor hypotension Useful in palliative sedation	
Olanzapine (Zyprexa)	Dopamine > histamine = serotonin > muscarinic	PO: 2.5-10 mg/day	IM SL (ODT): 5mg, 10mg (cannot be split) PO: 2.5mg, 5mg, 10mg	Useful in breakthrough NV(vs metoclopramide DB-RCT) May cause neutropenia Can cause metabolic syndrome; leveraged to increase appetite Useful if patient has insomnia or delirium	
Domperidone	Peripheral D2/D3 receptors	PO: 10-20 mg qAC+HS	** Not available in US	Has prokinetic action	

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<i>Serotonin</i>					
Ondansetron (Zofran)	5-HT3 (1 st gen)	PO/IV: 4-8mg q6-8h	IV/continuous gtt SL (ODT): 4mg, 8mg PO: 4mg, 8mg, oral solution (4mg/5mL)	Max dose is 16 mg IV Doses above 8mg have diminishing returns on effect Effective for preventing acute CINV, less effective for delayed CINV <i>Adjust for hepatic impairment</i>	Usually well tolerated; Headache Constipation, Diarrhea QTc prolongation *Serotonin syndrome
Granisetron (Kytril, Sancuso- patch)	5-HT3 (1 st gen)	IV: 1mg x1 PO: 1mg 1-2x/d TD: 3.1 mg/24h	Special Approval Only: IV PO: 1mg	Available as patch, oral, IV Effective for preventing acute CINV, less effective for delayed CINV	
Dolasetron (Anzemet)	5-HT3 (1 st gen)	PO: 100mg x1 IV: 12.5mg x1	Not CSMC formulary	Expensive, not usually covered by insurance plans	
Tropisetron (Navoban)	5-HT3 (1 st gen)	--	** Not available in US		
Palonosetron (Aloxi)	5-HT3 (2 nd gen)	IV: 0.25mg q24-48h	Special Approval Only: IV	Superior to other 5-HT3 antagonists for preventing acute and delayed CINV	
<i>Histamine</i>					
Promethazine (Phenergan)	Histamine > muscarinic >> dopamine	PO: 12.5-25mg q4-6h PR 25mg q12h	PO: 12.5mg, 25mg + oral syrup 12.5mg/10mL PR: 12.5mg, 25mg	QTc prolongation IV --> extravasation, never SQ Agranulocytosis, leukopenia, thrombocytopenia	Anti-cholinergic side effects (sedation, confusion, agitation dizziness, dry mouth, urinary retention, constipation, mydriasis/blurred vision); caution in the elderly or those with risk of or active delirium or falls Phototoxicity
Diphenhydramine (Benadryl)	Histamine > Muscarinic	PO/IV: 12.5-50mg q4- 6h	IV PO: 25mg + oral syrup 25mg/10mL	IV can cause dissociative effect	
Hydroxyzine (Atarax)	Histamine >> Dopamine > Muscarinic	PO: 25-50mg q6h	PO: 10mg, 25mg, 50mg, + oral syrup 10mg/5mL	Only anti-histamine with dopamine action	
Meclizine (Antivert, Bonine)	Histamine >>> Muscarinic	PO: 25-50mg q6h	PO: 12.5mg, 25mg	Can be given SL	

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<i>Acetylcholine Antagonists</i>					
Scopolamine (Trans-Scop)	Muscarinic	TD: 1.5 mg q72h	TD: 1.5mg	Takes 12-24hrs for appreciable effect; do not cut the patch	Anti-cholinergic side effects - as above Tachycardia, palpitations (atropine)
Hyoscyamine (Levsin)	Muscarinic	PO/SL: 125-250mcg q4-6h	PO/SL: 125mcg	Less expensive, and available SL	
Atropine (Isopto Atropine) 1%	Muscarinic	SL: 1-2 gtt SL q4-6h	Not CSMC formulary	Oph soln used SL common in hospice	
Glycopyrrolate (Robinul)	Muscarinic	PO: 1-2mg 2-4x/day	IV: CCP only PO: 1mg	Expensive, poor PO absorption	
<i>NK-1 Antagonists</i>					
Aprepitant (Cinvanti)	Neurokinin	PO: 125mg day 1, 80mg days 2-3	Special Approval Only PO: 40mg, 80mg, 125mg	Meta-analysis (7 randomized trials) in patients with HEC: NK-1 antagonists significant protection from delayed CINV, no change with acute CINV; Drug-drug interactions ALT elevation	Hypotension Abdominal pain, constipation, diarrhea, indigestion, loss of appetite Asthenia, dizziness, headache Fatigue Neutropenia
Fosaprepitant (Emend)	Neurokinin	IV: 150mg once	Special Approval Only IV: 150mg	Non-inferior to standard regimen with 3-day oral aprepitant in randomized study Associated with higher rates of significant infections	
Netupitant + Palonosetron (Akynzeo)	Neurokinin	PO: netupitant 300 mg/ palonosetron 0.5 mg once	Not CSMC formulary	PO version of Akynzeo	
Fosnetupitant + Palonosetron (Akynzeo)	Neurokinin	IV: fosnetupitant 235 mg/ palonosetron 0.25 mg once	Not CSMC formulary	IV version of Akynzeo	
Rolapitant (Varubi)	Neurokinin	PO: 180mg once IV: 166.5mg once	Not CSMC formulary	Expensive, no compelling indication at this time	

CCP = comfort care protocol

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<i>Prokinetic</i>					
Metoclopramide (Reglan)	Dopamine > Serotonin	PO/IV: 5-40mg qAC+HS	IV PO: 5mg, 10mg + oral solution 5mg/mL	Dose with Benadryl if >20 mg/dose At low doses, prokinetic >> anti-emetic, Serotonin at higher doses (240 mg/day)	Asthenia, headache, somnolence, fatigue, EPS side effects-as above
Erythromycin	Motilin	PO: 250mg qAC+HS IVPB: 50mg qAC+HS	IV PO: 250mg, 333mg, 500mg + oral solution 200mg/5mL	Note lower dose for IV administration; tends to cause more abdominal discomfort/cramping Drug-drug interactions	Abdominal pain, diarrhea, loss of appetite, N/V, QTc prolongation, c. diff, seizure, decreased liver function
<i>Cannabinoids</i>					
Dronabinol (Marinol)	CB1	PO 2.5-10 mg BID	PO: 2.5mg	Approved for CINV; RCT (dronabinol vs ondansetron vs dronabinol+ondansetron vs placebo); dronabinol = ondansetron = combo	Palpitations, tachyarrhythmia, vasodilation, hypotension, flushing Abdominal pain, dry mouth Amnesia, ataxia, confusion,
Nabilone (Cesamet)	CB1	PO 1-2 mg BID	Not CSMC formulary	Not as effective as 5-HT3 antagonists	dizziness, somnolence Anxiety, depersonalization
<i>Other</i>					
Dexamethasone (Decadron)	Unknown	PO/IV 4-16 mg/day	IV PO: 0.5mg, 1mg, 2mg, 4mg + oral solution 1mg/mL	Useful for bowel obstruction Included in pre-chemotherapy regimens for prevention of CINV	HTN, Cushing's, depression, euphoria, cardiomyopathy, edema, hyperglycemia, leukocytosis, osteoporosis, myopathy
Lorazepam (Ativan)	GABA	PO/IV 0.5-2 q4-8	IV SL/PO: 0.25mg, 0.5mg, 1mg	Useful for anticipatory nausea	Asthenia, dizziness, sedation, gait disturbance, depression, delirium
Trimethobenzamide (Tigan)	Dopamine = Muscarinic	PO: 300mg q6-8h IM: 200mg q6-8h	IM: 200mg PO: 300mg	No Qtc prolongation	Dizziness, somnolence, blurred vision, hepatotoxicity, depression