Symptom Management

Drug Classes and Medications for Treatment of Nausea and Vomiting

Class	Mechanism	Indications	Drugs	Side Effects	Cost
Antidopaminergic Therapies	• Block emetic pathways originating from the GI and CTZ • Antidopaminergic (D2) • Direct pro-kinetic effect (metoclopramide)	Opioids, chemotherapy, toxins, or drugs associated nausea and vomiting	• Prochlorperazine • Promethazine • Metoclopramide • Haloperidol	• Extra-pyramidal effects • Sedation • Hypotension • Contraindicated in bowel obstruction	Low
Serotonin receptor antagonists	Block emetic pathways occurring through vagal stimulation, 5-HT3 receptors in the GI tract, and/or the CTZ	Chemotherapy, toxins (CTZ, GI tract) associated nausea and vomiting	• Ondansetron • Granisetron • Dolasetron • Tropisetron • Palonosetron (second generation)	• Constipation • Headache	Moderate
Antihistamines	Uncertain action at the vomiting center	Inner ear pathology, adjuvant to other agents	• Diphenhydramine • Hydroxyzine • Meclizine • Doxepin	• Sedation • Constipation • Confusion • Orthostatic hypotension • Dry mouth	Low
Anxiolytics – Benzodiazepines	Works via the cerebral cortex Pathway	• Anxiety, PTSD post-chemotherapy • Useful as an adjunct	• Lorazepam • Oxazepam • Diazepam	• Sedation • Confusion • Falls and fractures	Low
Corticosteroids	• May relieve cancer associated nausea through effects on reducing inflammatory mediators, tumor edema, pressure on GI tract, and reducing intracranial pressure from tumor mass • The exact mechanism in nausea and vomiting is unknown	• Bone pain • Stimulate appetite	• Dexamethasone • Methylprednisolone • Prednisone	• Fluid retention • Increased blood pressure • Mood swings • Weight gain • Increased risk of infections • Thinning bones (osteoporosis) and fractures	Low
Cannabinoids	Cannabinoid receptors are widespread in the central nervous system and the mechanism of action is unknown	• Nausea unresponsive to conventional treatment • May be used in combination with other antiemetic therapies • Combination antiemetic therapy with dronabinol and prochlorperazine may result in synergistic antiemetic effects and minimize the toxicities	• Dronabinol • Nabilone	• Tachycardia • Low blood pressure • Blood shot eyes • Muscle relaxation • Slowed digestion • Dizziness • Depression • Hallucinations • Paranoia	Moderate

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Medical Marijuana	THC or tetrahydrocannabinols is the psychoactive compound in marijuana. CBD or cannabidiol is another compound in marijuana that is not psychoactive	• Three randomly controlled trials involving 43 subjects demonstrated cannabis to be an effective antiemetic	• THC • CBD	• Headaches • Dry mouth and dry eyes • Lightheadedness and dizziness • Drowsiness • Fatigue	Moderate
Neurokinin-1 receptor (NK-1) antagonists	Prevent both central and peripheral stimulation of vomiting centers	• Added to the standard antiemetic regimen (the combination of 5HT3 + steroid) for high dose chemotherapy or highly emetogenic chemotherapy	• Aprepitant • Rolapitant	• Many drug-drug interactions • Anemia • Dizziness • Urinary tract infection • Indigestion • Decreased appetite • Hiccups • Abdominal pain • Headache	High