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Brand Names

Antivert, Bonine, Dramamine Less Drowsy, Dramamine-N, Medivert, Meni-D , Travel Sickness, Travel-Ease

Indication Specific Dosing

For the treatment of nausea/vomiting and dizziness associated with motion sickness

Oral dosage (immediate-release, chewable, or orally disintegrating tablets)

Adults

25 to 50 mg PO 1 hour before travel. May repeat dose every 24 hours as needed. Start at the lowest dosage for geriatric patients as elderly patients are more sensitive to anticholinergic effects.

Children and Adolescents 12 years and older

25 to 50 mg PO 1 hour before travel. May repeat dose every 24 hours as needed.

For the treatment of vertigo

For the treatment of vertigo associated with nonspecific vestibular system disease

Oral dosage

Adults

25 to 100 mg/day PO in divided doses.

For the treatment of vertigo and nausea associated with Meniere disease

Oral dosage

Adults

12.5 to 25 mg PO every 8 hours as needed.

Contraindications And Precaution

Drug Interactions

The coadministration of certain medications may lead to harm and require avoidance or therapy modification; review all drug interactions prior to concomitant use of other medications.

Hypersensitivity

This medication is contraindicated in patients with a history of hypersensitivity to it or any of its components. Meclizine belongs to the piperazine class of antihistamines. Allergies to one antihistamine can sometimes lead to cross-reactivity with other chemically-related antihistamines.

glaucoma

Because of its potential anticholinergic action, use meclizine with caution in individuals with glaucoma. Older adults are more susceptible to the anticholinergic effects of meclizine, including possible precipitation of undiagnosed glaucoma.

prostatic hypertrophy

Due to the potential anticholinergic effects, use meclizine with caution in people at risk for urinary retention, especially in people with prostatic hypertrophy.

asthma, chronic obstructive pulmonary disease

Use meclizine with caution in people with breathing problems such as chronic obstructive pulmonary disease (COPD), including emphysema or chronic bronchitis. The anticholinergic activity of meclizine may result in thickened bronchial secretions in the respiratory tract, thereby aggravating COPD. While there is no special precaution for people with asthma in meclizine nonprescription (OTC) product labels at the recommended dosages, the prescription-only meclizine product labels advise using caution in people with asthma.

activities requiring coordination and concentration, driving or operating machinery

Meclizine can cause drowsiness. Advise individuals receiving meclizine to avoid driving or operating machinery and activities requiring coordination and concentration until the effects of the drug are known. Alcohol, sedatives, and other CNS depressants may increase the sedative effect of meclizine. In general, individuals should avoid the use of alcoholic beverages while taking meclizine.

CYP2D6 intermediate metabolizer, CYP2D6 poor metabolizer, CYP2D6 ultrarapid metabolizers, hepatic failure

Use meclizine with caution in people with hepatic failure, as use has not been evaluated in these individuals. Meclizine undergoes liver metabolism, and hepatic impairment may result in increased systemic exposure of the drug. Use meclizine with caution in people who are CYP2D6 poor metabolizers, CYP2D6 intermediate metabolizers, and CYP2D6 ultrarapid metabolizers. The genetic polymorphism of CYP2D6 that results in poor-, intermediate-, extensive-, and ultrarapid metabolizer phenotypes could contribute to large inter-individual variability in meclizine exposure. Monitor for adverse reactions and clinical effects in these individuals accordingly.

renal failure, renal impairment

The prescription meclizine product labels state to use caution in people with renal impairment, including renal failure, because of the potential for meclizine and metabolite accumulation. Meclizine administration in the presence of renal impairment has not been evaluated. Nonprescription (OTC) meclizine product labels do not contain a precaution for renal impairment.

geriatric

The Beers Criteria identifies first-generation antihistamines as potentially inappropriate medications (PIMs) for geriatric adults, recommending their avoidance due to their high anticholinergic properties, decreased clearance in older age, the development of tolerance when used as sleep aids, and an increased risk of anticholinergic effects and toxicity compared to younger individuals. These medications should particularly be avoided in patients with dementia or cognitive impairment (due to adverse CNS effects), those at high risk for delirium (which can worsen or trigger new-onset delirium), and men with lower urinary tract symptoms or benign prostatic hyperplasia (due to risks of urinary retention or hesitancy).

pregnancy

Data from epidemiological studies have not generally indicated a drug-associated risk of major birth defects with meclizine during human pregnancy. However, in a published study of meclizine in pregnant rats during the period of organogenesis, an increased incidence of fetal malformations was observed following oral administration at doses as low as 25 mg/kg, which is approximately 2 times the maximum recommended human dose (100 mg) on a body surface area (mg/m2) basis. Meclizine has been used to treat nausea and vomiting during pregnancy, but such use should occur under the advice and supervision of a qualified health care professional. Per guidelines, other drugs with an approved indication for this purpose (e.g., combination doxylamine; pyridoxine products) may be preferable.

breast-feeding

Use meclizine with caution during breast-feeding. There are no data on the presence of meclizine in human milk, the effects on the breastfed infant, or the effects on milk production. Consider the benefits of breast-feeding, the risk of potential infant drug exposure, and the risk of an untreated or inadequately treated maternal condition While meclizine may be excreted in breast milk, no problems have been documented in the breastfed infant. Occasional doses during breast-feeding should not pose a risk; however, prolonged use or larger doses of antihistamine-type drugs may cause effects in the infant (e.g., drowsiness), or may decrease milk production.

Pregnancy And Lactation

Data from epidemiological studies have not generally indicated a drug-associated risk of major birth defects with meclizine during human pregnancy. However, in a published study of meclizine in pregnant rats during the period of organogenesis, an increased incidence of fetal malformations was observed following oral administration at doses as low as 25 mg/kg, which is approximately 2 times the maximum recommended human dose (100 mg) on a body surface area (mg/m2) basis. Meclizine has been used to treat nausea and vomiting during pregnancy, but such use should occur under the advice and supervision of a qualified health care professional. Per guidelines, other drugs with an approved indication for this purpose (e.g., combination doxylamine; pyridoxine products) may be preferable.

Interactions

Acetaminophen; Aspirin; diphenhydrAMINE: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with

antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Acetaminophen; Caffeine; Pyrilamine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; Chlorpheniramine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; Chlorpheniramine; Dextromethorphan: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; Chlorpheniramine; Dextromethorphan; Phenylephrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; Chlorpheniramine; Dextromethorphan; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; Chlorpheniramine; Phenylephrine : (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; Dextromethorphan; Doxylamine: (Major) Meclizine is an H1-blocker

which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Acetaminophen; diphenhydrAMINE: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Acetaminophen; Pamabrom; Pyrilamine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Adagrasib: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with adagrasib. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and adagrasib is a CYP2D6 inhibitor.

Alosetron: (Moderate) Alosetron, if combined with drugs that possess anticholinergic properties like sedating H1 blockers, may seriously worsen constipation, leading to events such as GI obstruction/impaction or paralytic ileus.

ALPRAZolam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.

Amantadine: (Moderate) Medications with significant anticholinergic activity may potentiate the anticholinergic effects of amantadine, and may increase the risk of antimuscarinic-related side effects. Additive drowsiness may also occur.

Amikacin: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea secondary to vertigo).

Aminoglycosides: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea secondary to vertigo).

Amiodarone: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with amiodarone. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and amiodarone is a CYP2D6 inhibitor.

Amitriptyline: (Moderate) Additive anticholinergic and CNS effects may be seen when

tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Amivantamab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.

amLODIPine; Celecoxib: (Moderate) A dosage adjustment may be warranted for meclizine if coadministered with celecoxib due to the potential for celecoxib to enhance the exposure and toxicity of meclizine. Celecoxib is a CYP2D6 inhibitor, and meclizine is a CYP2D6 substrate.

Amobarbital: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.

Amoxapine: (Moderate) Additive anticholinergic effects may be seen when amoxapine is used concomitantly with drugs are known to possess relatively significant antimuscarinic properties, including sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature Additive sedation may also occur.

Amphetamine: (Moderate) Amphetamines may pharmacodynamically counteract the sedative properties of some antihistamines, such as the sedating H1-blockers (i.e., diphenhydramine). This effect may be clinically important if a patient is receiving an antihistamine agent for treatment of insomnia. Alternatively, if a patient is receiving an amphetamine for treatment of narcolepsy, the combination with a sedating antihistamine may reverse the action of the amphetamine.

Amphetamine; Dextroamphetamine Salts: (Moderate) Amphetamines may pharmacodynamically counteract the sedative properties of some antihistamines, such as the sedating H1-blockers (i.e., diphenhydramine). This effect may be clinically important if a patient is receiving an antihistamine agent for treatment of insomnia. Alternatively, if a patient is receiving an amphetamine for treatment of narcolepsy, the combination with a sedating antihistamine may reverse the action of the amphetamine.

Amphetamine; Dextroamphetamine: (Moderate) Amphetamines may pharmacodynamically counteract the sedative properties of some antihistamines, such as the sedating H1-blockers (i.e., diphenhydramine). This effect may be clinically important if a patient is receiving an antihistamine agent for treatment of insomnia. Alternatively, if a patient is receiving an amphetamine for treatment of narcolepsy, the combination with a sedating antihistamine may reverse the action of the amphetamine.

Apomorphine: (Moderate) Apomorphine causes significant somnolence. Concomitant administration of apomorphine and meclizine could result in additive depressant effects. Careful monitoring is recommended during combined use. A dose reduction of one or both drugs may be warranted.

ARIPiprazole: (Moderate) Due to the primary CNS effects of aripiprazole, caution should be used when aripiprazole is given in combination with other centrally-acting medications including sedating H1-blockers. Additive drowsiness or other CNS effects may occur.
Asenapine: (Moderate) Using drugs that can cause CNS depression, such as sedating H1-blockers, concomitantly with asenapine may increase both the frequency and the intensity of adverse effects such as drowsiness, sedation, and dizziness.
Aspirin, ASA; Butalbital; Caffeine: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Aspirin, ASA; Caffeine; Orphenadrine: (Moderate) Additive anticholinergic effects may be seen when drugs with anticholinergic properties, like sedating H1-blockers and orphenadrine, are used concomitantly. Adverse effects may be seen not only on GI smooth muscle, but also on bladder function, the CNS, the eye, and temperature regulation. Additive drowsiness may also occur.
Aspirin, ASA; Carisoprodol; Codeine: (Moderate) Carisoprodol is metabolized to meprobamate, a significant CNS depressant. Carisoprodol can cause additive CNS depression if used concomitantly with other CNS depressants. Additive effects of sedation and dizziness, which can impair the ability to undertake tasks requiring mental alertness, may occur if carisoprodol is taken with sedating H1-blockers. Utilize appropriate caution if carisoprodol is coadministered with another CNS depressant.
Atazanavir; Cobicistat: (Moderate) The plasma concentrations of meclizine may be elevated when administered concurrently with cobicistat. Clinical monitoring for adverse effects is recommended during coadministration. Cobicistat is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate.
Atezolizumab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.
Atropine: (Moderate) Monitor for unusual drowsiness or excess sedation and for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and atropine use. Concomitant use may result in additive CNS depression or anticholinergic adverse effects.
Atropine; Difenoxin: (Moderate) An enhanced CNS depressant effect may occur when diphenoxylate/difenoxin is combined with other CNS depressants.
Diphenoxylate/difenoxin decreases GI motility. Other drugs that also decrease GI motility, such as sedating H1 blockers, may produce additive effects with diphenoxylate/difenoxin if used concomitantly. (Moderate) Monitor for unusual drowsiness or excess sedation and for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and atropine use. Concomitant use may result in additive CNS depression or anticholinergic adverse effects.

Azelastine: (Major) Avoid concomitant use of azelastine and sedating H1-blockers due to risk for additive CNS depression.
Azelastine; Fluticasone: (Major) Avoid concomitant use of azelastine and sedating H1-blockers due to risk for additive CNS depression.
Baclofen: (Moderate) An enhanced CNS depressant effect may occur when sedating H1-blockers are combined with other CNS depressants including skeletal muscle relaxants, such as baclofen.
Barbiturates: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Belladonna; Opium: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and belladonna use. Concomitant use may result in additive anticholinergic adverse effects.
Benzgalantamine: (Moderate) Concurrent use of sedating H1-blockers and galantamine should be avoided if possible. Galantamine inhibits acetylcholinesterase, the enzyme responsible for the degradation of acetylcholine, and improves the availability of acetylcholine. Sedating H1-blockers may exhibit significant anticholinergic activity, thereby interfering with the therapeutic effect of galantamine.
Benzodiazepines: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Benzoic Acid; Hyoscyamine; Methenamine; Methylene Blue; Phenyl Salicylate: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and hyoscyamine use. Concomitant use may result in additive anticholinergic adverse effects.
Benzphetamine: (Moderate) Amphetamines may pharmacodynamically counteract the sedative properties of some antihistamines, such as the sedating H1-blockers. This effect may be clinically important if a patient is receiving an antihistamine agent for treatment of insomnia. Alternatively, if a patient is receiving an amphetamine for treatment of narcolepsy, the combination with a sedating antihistamine may reverse the action of the amphetamine.
Benztropine: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and benztropine use. Concomitant use may result in additive anticholinergic adverse effects.
Berotralstat: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with berotralstat. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and berotralstat is a CYP2D6 inhibitor.
Brompheniramine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-

blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Brompheniramine; Dextromethorphan; Phenylephrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Brompheniramine; Phenylephrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Brompheniramine; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Brompheniramine; Pseudoephedrine; Dextromethorphan: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Budesonide; Glycopyrrolate; Formoterol: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and glycopyrrolate use. Concomitant use may result in additive anticholinergic adverse effects.

Buprenorphine: (Moderate) If concurrent use of sedating H1-blockers and buprenorphine is necessary, consider a dose reduction of one or both drugs because of the potential for additive pharmacological effects. Hypotension, profound sedation, coma, respiratory depression, or death may occur during co-administration of buprenorphine and other CNS depressants. Prior to concurrent use of buprenorphine in patients taking a CNS depressant, assess the level of tolerance to CNS depression that has developed, the duration of use, and the patient's overall response to treatment. Evaluate the patient's use of alcohol or illicit drugs. It is recommended that the injectable buprenorphine dose be halved for patients who receive other drugs with CNS depressant effects; for the buprenorphine transdermal patch, start with the 5 mcg/hour

patch. Monitor patients for sedation or respiratory depression.
Buprenorphine; Naloxone: (Moderate) If concurrent use of sedating H1-blockers and buprenorphine is necessary, consider a dose reduction of one or both drugs because of the potential for additive pharmacological effects. Hypotension, profound sedation, coma, respiratory depression, or death may occur during co-administration of buprenorphine and other CNS depressants. Prior to concurrent use of buprenorphine in patients taking a CNS depressant, assess the level of tolerance to CNS depression that has developed, the duration of use, and the patient's overall response to treatment. Evaluate the patient's use of alcohol or illicit drugs. It is recommended that the injectable buprenorphine dose be halved for patients who receive other drugs with CNS depressant effects; for the buprenorphine transdermal patch, start with the 5 mcg/hour patch. Monitor patients for sedation or respiratory depression.
Butalbital; Acetaminophen: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Butalbital; Acetaminophen; Caffeine: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Butalbital; Acetaminophen; Caffeine; Codeine: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Butalbital; Aspirin; Caffeine; Codeine: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Butorphanol: (Moderate) Concomitant use of butorphanol with sedating H1-blockers can potentiate the effects of butorphanol on CNS and/or respiratory depression. Use together with caution. If a CNS depressant needs to be used with butorphanol, use the smallest effective dose and the longest dosing frequency of butorphanol.
Cannabidiol: (Moderate) Monitor for excessive sedation and somnolence during coadministration of cannabidiol and sedating H1-blockers. CNS depressants can potentiate the effects of cannabidiol.
Capivasertib: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with capivasertib. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and capivasertib is a CYP2D6 inhibitor.
Capsaicin; Metaxalone: (Moderate) Concomitant administration of metaxalone with other CNS depressants can potentiate the sedative effects of either agent.
Carbidopa; Levodopa; Entacapone: (Moderate) COMT inhibitors should be given cautiously with other agents that cause CNS depression, including sedating H1-blockers, due to the possibility of additive sedation. COMT inhibitors have also been associated with sudden sleep onset during activities of daily living such as driving, which has resulted in accidents in some cases. Prescribers should re-assess patients for drowsiness or sleepiness regularly throughout treatment, especially since events may occur well after the start of treatment. Patients should be advised to avoid driving or

other tasks requiring mental alertness until they know how the combination affects them.

Carbinoxamine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Carisoprodol: (Moderate) Carisoprodol is metabolized to meprobamate, a significant CNS depressant. Carisoprodol can cause additive CNS depression if used concomitantly with other CNS depressants. Additive effects of sedation and dizziness, which can impair the ability to undertake tasks requiring mental alertness, may occur if carisoprodol is taken with sedating H1-blockers. Utilize appropriate caution if carisoprodol is coadministered with another CNS depressant.

Celecoxib: (Moderate) A dosage adjustment may be warranted for meclizine if coadministered with celecoxib due to the potential for celecoxib to enhance the exposure and toxicity of meclizine. Celecoxib is a CYP2D6 inhibitor, and meclizine is a CYP2D6 substrate.

Celecoxib; Tramadol: (Moderate) A dosage adjustment may be warranted for meclizine if coadministered with celecoxib due to the potential for celecoxib to enhance the exposure and toxicity of meclizine. Celecoxib is a CYP2D6 inhibitor, and meclizine is a CYP2D6 substrate.

Cenobamate: (Moderate) Monitor for excessive sedation and somnolence during coadministration of cenobamate and sedating H1-blockers. Concurrent use may result in additive CNS depression.

Cetirizine: (Moderate) Monitor for unusual drowsiness and sedation, urinary retention, and reduced gastric motility during coadministration of cetirizine and sedating H1-blockers. Concomitant use may result in additive CNS depression or anticholinergic effects.

Cetirizine; Pseudoephedrine: (Moderate) Monitor for unusual drowsiness and sedation, urinary retention, and reduced gastric motility during coadministration of cetirizine and sedating H1-blockers. Concomitant use may result in additive CNS depression or anticholinergic effects.

Chlophedianol; Dexchlorpheniramine; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Chlorcyclizine: (Major) Meclizine is an H1-blocker which exhibits significant

anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
chlordiazePOXIDE: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
chlordiazePOXIDE; Amitriptyline: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
chlordiazePOXIDE; Clidinium: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Chlorpheniramine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Codeine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Dextromethorphan: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Dextromethorphan; Phenylephrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the

eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Dextromethorphan; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; HYDROcodone: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Ibuprofen; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Phenylephrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Chlorpheniramine; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
chlorproMAZINE: (Moderate) Additive anticholinergic and sedative effects may be seen when chlorpromazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.
Chlorzoxazone: (Moderate) Additive CNS depression is possible if chlorzoxazone is used concomitantly with other CNS depressants including sedating H1-blockers. Additive effects of sedation and dizziness can occur, which can impair the ability to undertake tasks requiring mental alertness. Dosage adjustments of one or both medications may be necessary.

Cinacalcet: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with cinacalcet. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and cinacalcet is a CYP2D6 inhibitor.

Clemastine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

cloBAZam: (Moderate) Clobazam, a benzodiazepine, may cause drowsiness or other CNS effects. Additive drowsiness may occur when clobazam is combined with CNS depressants such as sedating H1-blockers. In addition, caution is recommended when administering clobazam with medications extensively metabolized by CYP2D6 such as diphenhydramine because clobazam has been shown to inhibit CYP2D6 in vivo and may increase concentrations of drugs metabolized by this enzyme.

clomiPRAMINE: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

clonazePAM: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.

Clorazepate: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.

cloZAPine: (Moderate) Clozapine exhibits clinically significant anticholinergic effects and sedation that may be additive with other medications that may cause anticholinergic effects and sedation, including antihistamines such as meclizine. Patients should be informed to read non-prescription cough and cold product labels carefully for additional interacting antihistamines and to avoid tasks requiring mental alertness until they are aware of the effects of the combination.

Cobicistat: (Moderate) The plasma concentrations of meclizine may be elevated when administered concurrently with cobicistat. Clinical monitoring for adverse effects is recommended during coadministration. Cobicistat is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate.

Codeine; Phenylephrine; Promethazine: (Moderate) Additive anticholinergic and sedative effects may be seen when promethazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Codeine; Promethazine: (Moderate) Additive anticholinergic and sedative effects may be seen when promethazine is used with meclizine. Patients should be informed to read

non-prescription product labels carefully for additional interacting motion sickness medications.

COMT inhibitors: (Moderate) COMT inhibitors should be given cautiously with other agents that cause CNS depression, including sedating H1-blockers, due to the possibility of additive sedation. COMT inhibitors have also been associated with sudden sleep onset during activities of daily living such as driving, which has resulted in accidents in some cases. Prescribers should re-assess patients for drowsiness or sleepiness regularly throughout treatment, especially since events may occur well after the start of treatment. Patients should be advised to avoid driving or other tasks requiring mental alertness until they know how the combination affects them.

Cyclobenzaprine: (Moderate) Cyclobenzaprine and sedating antihistamines such as meclizine both exhibit anticholinergic activity, and anticholinergic side effects can be additive. Monitor for anticholinergic-related effects such as constipation and urinary retention. Additive CNS depression causing sedation and/or dizziness is also possible. Dosage adjustments of either or both drugs may be necessary.

Cyproheptadine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Dantrolene: (Moderate) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect (e.g., drowsiness) may occur when dantrolene is combined with other CNS depressants.

Daratumumab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.

Darunavir; Cobicistat: (Moderate) The plasma concentrations of meclizine may be elevated when administered concurrently with cobicistat. Clinical monitoring for adverse effects is recommended during coadministration. Cobicistat is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate.

Darunavir; Cobicistat; Emtricitabine; Tenofovir alafenamide: (Moderate) The plasma concentrations of meclizine may be elevated when administered concurrently with cobicistat. Clinical monitoring for adverse effects is recommended during coadministration. Cobicistat is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate.

Desflurane: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when they are combined with general anesthetics.

Desipramine: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers.

Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Desloratadine: (Minor) Although desloratadine is considered a 'non-sedating' antihistamine, dose-related sedation has been noted. For this reason, it would be prudent to monitor for drowsiness during concurrent use of desloratadine with CNS depressants such as other H1-blockers.

Desloratadine; Pseudoephedrine: (Minor) Although desloratadine is considered a 'non-sedating' antihistamine, dose-related sedation has been noted. For this reason, it would be prudent to monitor for drowsiness during concurrent use of desloratadine with CNS depressants such as other H1-blockers.

Deutetrabenazine: (Moderate) Concurrent use of deutetrabenazine and drugs that can cause CNS depression, such as meclizine, may have additive effects and worsen drowsiness or sedation. Advise patients about worsened somnolence and not to drive or perform other tasks requiring mental alertness until they know how deutetrabenazine affects them.

Dexchlorpheniramine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Dexchlorpheniramine; Dextromethorphan; Pseudoephedrine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

dexmedeTOMIDine: (Moderate) Consider a dosage reduction for dexmedetomidine or the sedating antihistamine during concomitant use due to the risk of additive CNS effects.

Dextroamphetamine: (Moderate) Amphetamines may pharmacodynamically counteract the sedative properties of some antihistamines, such as the sedating H1-blockers (i.e., diphenhydramine). This effect may be clinically important if a patient is receiving an antihistamine agent for treatment of insomnia. Alternatively, if a patient is receiving an amphetamine for treatment of narcolepsy, the combination with a sedating antihistamine may reverse the action of the amphetamine.

Dextromethorphan; diphenhydrAMINE; Phenylephrine: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle,

but also on bladder function, the eye, and temperature regulation.
diazePAM: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Dicyclomine: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and dicyclomine use. Concomitant use may result in additive anticholinergic adverse effects.
Difelikefalin: (Moderate) Monitor for dizziness, somnolence, mental status changes, and gait disturbances if concomitant use of difelikefalin with CNS depressants is necessary. Concomitant use may increase the risk for these adverse reactions.
Digoxin: (Moderate) Patients receiving oral digoxin therapy should be monitored for increased digoxin effects when receiving drugs with substantial anticholinergic activity. Meclizine can theoretically increase the absorption of digoxin by decreasing gastrointestinal motility. Anticholinergics, because of their ability to cause tachycardia, can also antagonize the beneficial actions of digoxin in atrial fibrillation/flutter.
dimenhyDRINATE: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
diphenhydrAMINE: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
diphenhydrAMINE; Ibuprofen: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
diphenhydrAMINE; Naproxen: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
diphenhydrAMINE; Phenylephrine: (Major) The anticholinergic and sedative effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating antihistamines (H1-blockers). Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Diphenoxylate; Atropine: (Moderate) An enhanced CNS depressant effect may occur when diphenoxylate/difenoxin is combined with other CNS depressants. Diphenoxylate/difenoxin decreases GI motility. Other drugs that also decrease GI motility, such as sedating H1 blockers, may produce additive effects with diphenoxylate/difenoxin if used concomitantly. (Moderate) Monitor for unusual drowsiness or excess sedation and for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and atropine use. Concomitant use may result in additive CNS depression or anticholinergic adverse effects.
Disopyramide: (Moderate) The anticholinergic effects of sedating H1-blockers may be enhanced when combined with other drugs with moderate to significant anticholinergic effects including disopyramide. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
Donepezil: (Moderate) Concurrent use of sedating H1-blockers and donepezil should be avoided if possible. Donepezil inhibits acetylcholinesterase, the enzyme responsible for the degradation of acetylcholine, and improves the availability of acetylcholine. Sedating H1-blockers may exhibit significant anticholinergic activity, thereby interfering with the therapeutic effect of donepezil.
Donepezil; Memantine: (Moderate) Concurrent use of sedating H1-blockers and donepezil should be avoided if possible. Donepezil inhibits acetylcholinesterase, the enzyme responsible for the degradation of acetylcholine, and improves the availability of acetylcholine. Sedating H1-blockers may exhibit significant anticholinergic activity, thereby interfering with the therapeutic effect of donepezil.
Doxepin: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
Doxylamine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Doxylamine; Pyridoxine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
droNABinol: (Moderate) Use caution if coadministration of dronabinol with

antihistamines is necessary. Concurrent use of dronabinol, THC with antihistamines may result in additive drowsiness, hypertension, tachycardia, and possibly cardiotoxicity.
droPERidol: (Moderate) Sedating H1-blockers have additive or potentiating sedative and other CNS effects with droperidol. Following administration of droperidol, lower doses of the other CNS depressant may need to be used.
Efgartigimod Alfa; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.
Elvitegravir; Cobicistat; Emtricitabine; Tenofovir Alafenamide: (Moderate) The plasma concentrations of meclizine may be elevated when administered concurrently with cobicistat. Clinical monitoring for adverse effects is recommended during coadministration. Cobicistat is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate.
Elvitegravir; Cobicistat; Emtricitabine; Tenofovir Disoproxil Fumarate: (Moderate) The plasma concentrations of meclizine may be elevated when administered concurrently with cobicistat. Clinical monitoring for adverse effects is recommended during coadministration. Cobicistat is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate.
Enasidenib: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with enasidenib. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and enasidenib is a CYP2D6 inhibitor.
Entacapone: (Moderate) COMT inhibitors should be given cautiously with other agents that cause CNS depression, including sedating H1-blockers, due to the possibility of additive sedation. COMT inhibitors have also been associated with sudden sleep onset during activities of daily living such as driving, which has resulted in accidents in some cases. Prescribers should re-assess patients for drowsiness or sleepiness regularly throughout treatment, especially since events may occur well after the start of treatment. Patients should be advised to avoid driving or other tasks requiring mental alertness until they know how the combination affects them.
Esketamine: (Moderate) Closely monitor patients receiving esketamine and meclizine for sedation and other CNS depressant effects. Instruct patients who receive a dose of esketamine not to drive or engage in other activities requiring alertness until the next day after a restful sleep.
Estazolam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Eszopiclone: (Moderate) A reduction in the dose of eszopiclone and concomitantly administered CNS depressants, such as sedating H1-blockers, should be considered to minimize additive sedative effects. In addition, the risk of next-day psychomotor impairment is increased during co-administration of eszopiclone and other CNS depressants, which may decrease the ability to perform tasks requiring full mental

alertness such as driving.
Ethanol: (Major) Advise patients to avoid alcohol consumption while taking CNS depressants. Alcohol consumption may result in additive CNS depression.
Etomidate: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when they are combined with general anesthetics.
Everolimus: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with everolimus. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and everolimus is a CYP2D6 inhibitor.
Fenfluramine: (Moderate) Monitor for excessive sedation and somnolence during coadministration of fenfluramine and meclizine. Concurrent use may result in additive CNS depression.
flavoxATE: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and flavoxate use. Concomitant use may result in additive anticholinergic adverse effects.
Flibanserin: (Moderate) The concomitant use of flibanserin with CNS depressants, such as sedating H1-blockers, may increase the risk of CNS depression (e.g., dizziness, somnolence) compared to the use of flibanserin alone. Patients should avoid activities requiring full alertness (e.g., operating machinery or driving) until at least 6 hours after each dose and until they know how flibanserin affects them.
FLUoxetine: (Moderate) Meclizine is metabolized by CYP2D6, fluoxetine is a CYP2D6 inhibitor. Concomitant use may increase meclizine plasma concentrations which may intensify its sedative and anticholinergic effects.
fluPHENAZine: (Moderate) Additive sedative effects may be seen when fluphenazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.
Flurazepam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Food: (Major) Advise patients to avoid cannabis use while taking CNS depressants due to the risk for additive CNS depression and potential for other cognitive adverse reactions.
Gabapentin: (Moderate) Monitor for excessive sedation and somnolence during coadministration of meclizine and gabapentin. Concurrent use may result in additive CNS depression.
Galantamine: (Moderate) Concurrent use of sedating H1-blockers and galantamine should be avoided if possible. Galantamine inhibits acetylcholinesterase, the enzyme responsible for the degradation of acetylcholine, and improves the availability of acetylcholine. Sedating H1-blockers may exhibit significant anticholinergic activity, thereby interfering with the therapeutic effect of galantamine.
Gentamicin: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea

secondary to vertigo).
Glycopyrrolate: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and glycopyrrolate use. Concomitant use may result in additive anticholinergic adverse effects.
Glycopyrrolate; Formoterol: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and glycopyrrolate use. Concomitant use may result in additive anticholinergic adverse effects.
Halogenated Anesthetics: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when they are combined with general anesthetics.
Haloperidol: (Moderate) Haloperidol can potentiate the actions of other CNS depressants such as the sedating H1-blockers. Additive anticholinergic effects may occur. Clinicians should note that antimuscarinic effects may be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive drowsiness or CNS effects may also occur.
Heparin: (Minor) Antihistamines may partially counteract the anticoagulant actions of heparin, according to the product labels. However, this interaction is not likely of clinical significance since heparin therapy is adjusted to the partial thromboplastin time (aPTT) and other clinical parameters of the patient.
Homatropine; HYDROcodone: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and homatropine use. Concomitant use may result in additive anticholinergic adverse effects.
Hyaluronidase, Recombinant; Immune Globulin: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.
Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.
hydrOXYzine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Hyoscyamine: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and hyoscyamine use. Concomitant use may result in additive anticholinergic adverse effects.
Hyoscyamine; Methenamine; Methylene Blue; Phenyl Salicylate; Sodium Biphosphate:

(Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and hyoscyamine use. Concomitant use may result in additive anticholinergic adverse effects.

Iloperidone: (Moderate) Drugs that can cause CNS depression, if used concomitantly with iloperidone, may increase both the frequency and the intensity of adverse effects such as drowsiness, sedation, and dizziness. Caution should be used when iloperidone is given in combination with other centrally-acting medications, such as sedating H1-blockers.

Imipramine: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Indacaterol; Glycopyrrolate: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and glycopyrrolate use. Concomitant use may result in additive anticholinergic adverse effects.

Isocarboxazid: (Contraindicated) Concomitant use of monoamine oxidase inhibitors and sedating H1-blockers is contraindicated due to increased anticholinergic effects.

Isoflurane: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when they are combined with general anesthetics.

Ketamine: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when they are combined with general anesthetics.

Lasmiditan: (Moderate) Monitor for excessive sedation and somnolence during coadministration of lasmiditan and sedating H1-blockers. Concurrent use may result in additive CNS depression.

Lemborexant: (Moderate) Monitor for excessive sedation and somnolence during coadministration of lemborexant and sedating antihistamines (H1-blockers). Dosage adjustments of lemborexant and sedating H1-blockers may be necessary when administered together because of potentially additive CNS effects. The risk of next-day impairment, including impaired driving, is increased if lemborexant is taken with other CNS depressants. Patients should generally avoid nonprescription antihistamine products that are marketed as sleep-aids concurrently with lemborexant.

Levocetirizine: (Moderate) Monitor for unusual drowsiness and sedation, urinary retention, and reduced gastric motility during coadministration of cetirizine and sedating H1-blockers. Concomitant use may result in additive CNS depression or anticholinergic effects.

Lithium: (Moderate) Because lithium has the potential to impair cognitive and motor skills, caution is advisable during concurrent use of other medications with centrally-acting effects including meclizine.

Lofexidine: (Moderate) Monitor for excessive hypotension and sedation during coadministration of lofexidine and meclizine. Lofexidine can potentiate the effects of

CNS depressants.
Lopinavir; Ritonavir: (Moderate) Concurrent administration of meclizine with ritonavir may result in elevated meclizine plasma concentrations. Meclizine is metabolized by the hepatic isoenzyme CYP2D6; ritonavir is an inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are administered together.
Loratadine: (Minor) Although loratadine is considered a 'non-sedating' antihistamine, dose-related sedation has been noted. For this reason, it would be prudent to monitor for drowsiness during concurrent use of loratadine with CNS depressants such as other H1-blockers.
Loratadine; Pseudoephedrine: (Minor) Although loratadine is considered a 'non-sedating' antihistamine, dose-related sedation has been noted. For this reason, it would be prudent to monitor for drowsiness during concurrent use of loratadine with CNS depressants such as other H1-blockers.
LORazepam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Loxapine: (Moderate) Sedating H1-blockers are associated with anticholinergic effects and sedation; therefore, additive effects may be seen during concurrent use with other drugs having anticholinergic activity and CNS depressant properties such as traditional antipsychotic agents, including loxapine. Clinicians should note that antimuscarinic effects may be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive drowsiness or other CNS effects may also occur.
Lumateperone: (Moderate) Monitor for excessive sedation and somnolence during coadministration of lumateperone and meclizine. Concurrent use may result in additive CNS depression.
Lurasidone: (Moderate) Due to the CNS effects of lurasidone, caution should be used when lurasidone is given in combination with other centrally acting medications. Sedating H1-blockers are associated with sedation; therefore, additive effects may be seen during concurrent use with other drugs having CNS depressant properties such as antipsychotics. Additive drowsiness or other CNS effects may occur.
Maprotiline: (Moderate) Additive anticholinergic effects may be seen when maprotiline is used concomitantly with other commonly used drugs with moderate to significant anticholinergic effects, such as meclizine.
Mavorixafor: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with mavorixafor. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and mavorixafor is a CYP2D6 inhibitor.
Melatonin: (Moderate) Monitor for unusual drowsiness and sedation during coadministration of melatonin and sedating H1-blockers due to the risk for additive CNS depression.

Meprobamate: (Moderate) The CNS-depressant effects of meprobamate can be potentiated with concomitant administration of other drugs known to cause CNS depression including sedating H1-blockers.
Metaxalone: (Moderate) Concomitant administration of metaxalone with other CNS depressants can potentiate the sedative effects of either agent.
Methadone: (Moderate) Concomitant use of methadone with another CNS depressant can lead to additive respiratory depression, hypotension, profound sedation, or coma; examples include sedating H1-blockers. Prior to concurrent use of methadone in patients taking a CNS depressant, assess the level of tolerance to CNS depression that has developed, the duration of use, and the patient's overall response to treatment. Consider the patient's use of alcohol or illicit drugs. Methadone should be used with caution and in reduced dosages if used concurrently with a CNS depressant; in opioid-naive adults, use an initial methadone dose of 2.5 mg every 12 hours. Also consider a using a lower dose of the CNS depressant. Monitor patients for sedation and respiratory depression.
Methamphetamine: (Moderate) Amphetamines may pharmacodynamically counteract the sedative properties of sedating H1-blockers. This effect may be clinically important if a patient is receiving an antihistamine agent for treatment of insomnia. Alternatively, if a patient is receiving an amphetamine for treatment of narcolepsy, the combination with a sedating antihistamine may reverse the action of the amphetamine. Coadminister with caution and monitor for altered response to drug therapy.
Methenamine; Sodium Acid Phosphate; Methylene Blue; Hyoscyamine: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and hyoscyamine use. Concomitant use may result in additive anticholinergic adverse effects.
Methocarbamol: (Moderate) Methocarbamol may cause additive CNS depression if used concomitantly with other CNS depressants such as sedating H1-blockers. Combination therapy can cause additive effects of sedation and dizziness, which can impair the patient's ability to undertake tasks requiring mental alertness. Dosage adjustments of either or both medications may be necessary.
Methohexital: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.
Methscopolamine: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and methscopolamine use. Concomitant use may result in additive anticholinergic adverse effects.
Metoclopramide: (Minor) Combined use of metoclopramide and other CNS depressants, such as anxiolytics, sedatives, and hypnotics, can increase possible sedation.
metyraPONE: (Moderate) Metyrapone may cause dizziness and/or drowsiness. Other drugs that may also cause drowsiness, such as sedating H1-blockers, should be used with caution. Additive drowsiness and/or dizziness is possible.

metyroSINE: (Moderate) The concomitant administration of metyrosine with sedating H1-blockers can result in additive sedative effects.
Midazolam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
Minocycline: (Minor) Injectable minocycline contains magnesium sulfate heptahydrate. Because of the CNS-depressant effects of magnesium sulfate, additive central-depressant effects can occur following concurrent administration with CNS depressants, such as sedating H1-blockers. Caution should be exercised when using these agents concurrently.
Mirabegron: (Moderate) Mirabegron is a moderate CYP2D6 inhibitor. Exposure of drugs metabolized by CYP2D6 such as meclizine may be increased when co-administered with mirabegron. Meclizine has been shown to be a CYP2D6 substrate in vitro. Appropriate monitoring and dose adjustment may be necessary.
Mirtazapine: (Moderate) Consistent with the CNS depressant effects of mirtazapine, additive effects may occur with other CNS depressants such as meclizine. Mirtazapine should be administered cautiously with such agents because the CNS effects on cognitive performance and motor skills can be additive.
Mitotane: (Moderate) Mitotane can cause sedation, lethargy, vertigo, and other CNS side effects. Concomitant administration of mitotane and CNS depressants, including sedating h1-blockers, may cause additive CNS effects.
Molindone: (Moderate) An enhanced CNS depressant effect may occur when sedating h1-blockers are combined with other CNS depressants including molindone.
Monoamine oxidase inhibitors: (Contraindicated) Concomitant use of monoamine oxidase inhibitors and sedating H1-blockers is contraindicated due to increased anticholinergic effects.
Nalbuphine: (Moderate) Concomitant use of nalbuphine with other CNS depressants, such as sedating H1-blockers, can potentiate the effects of nalbuphine on respiratory depression, CNS depression, and sedation.
Nefazodone: (Moderate) An enhanced CNS depressant effect may occur when sedating H1-blockers are combined with other CNS depressants including nefazodone.
Neostigmine; Glycopyrrolate: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and glycopyrrolate use. Concomitant use may result in additive anticholinergic adverse effects.
NiCARdipine: (Moderate) Meclizine is metabolized by CYP2D6, nicardipine is a CYP2D6 inhibitor. Concomitant use may increase meclizine plasma concentrations which may intensify its sedative and anticholinergic effects.
Nirmatrelvir; Ritonavir: (Moderate) Concurrent administration of meclizine with ritonavir may result in elevated meclizine plasma concentrations. Meclizine is metabolized by the hepatic isoenzyme CYP2D6; ritonavir is an inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are administered together.

Nivolumab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.
Nortriptyline: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
Ocrelizumab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.
OLANZapine: (Moderate) Olanzapine exhibits anticholinergic effects that may be clinically significant. Clinicians should keep this in mind when using antimuscarinics and other medications with anticholinergic activity in combination with olanzapine. Some medications exhibit additive anticholinergic effects include sedating H1-blockers. Olanzapine may also cause additive sedation with many of these drugs.
OLANZapine; FLUoxetine: (Moderate) Meclizine is metabolized by CYP2D6, fluoxetine is a CYP2D6 inhibitor. Concomitant use may increase meclizine plasma concentrations which may intensify its sedative and anticholinergic effects. (Moderate) Olanzapine exhibits anticholinergic effects that may be clinically significant. Clinicians should keep this in mind when using antimuscarinics and other medications with anticholinergic activity in combination with olanzapine. Some medications exhibit additive anticholinergic effects include sedating H1-blockers. Olanzapine may also cause additive sedation with many of these drugs.
OLANZapine; Samidorphan: (Moderate) Olanzapine exhibits anticholinergic effects that may be clinically significant. Clinicians should keep this in mind when using antimuscarinics and other medications with anticholinergic activity in combination with olanzapine. Some medications exhibit additive anticholinergic effects include sedating H1-blockers. Olanzapine may also cause additive sedation with many of these drugs.
Oliceridine: (Moderate) Concomitant use of oliceridine with meclizine may cause excessive sedation and somnolence. Limit the use of oliceridine with meclizine to only patients for whom alternative treatment options are inadequate. If concurrent use is necessary, use the lowest effective doses and minimum treatment durations needed to achieve the desired clinical effect.
Opicapone: (Moderate) COMT inhibitors should be given cautiously with other agents that cause CNS depression, including sedating H1-blockers, due to the possibility of additive sedation. COMT inhibitors have also been associated with sudden sleep onset during activities of daily living such as driving, which has resulted in accidents in some cases. Prescribers should re-assess patients for drowsiness or sleepiness regularly

throughout treatment, especially since events may occur well after the start of treatment. Patients should be advised to avoid driving or other tasks requiring mental alertness until they know how the combination affects them.

Oritavancin: (Moderate) Meclizine is metabolized by CYP2D6; oritavancin is a weak CYP2D6 inducer. Plasma concentrations and efficacy of meclizine may be reduced if these drugs are administered concurrently.

Orphenadrine: (Moderate) Additive anticholinergic effects may be seen when drugs with anticholinergic properties, like sedating H1-blockers and orphenadrine, are used concomitantly. Adverse effects may be seen not only on GI smooth muscle, but also on bladder function, the CNS, the eye, and temperature regulation. Additive drowsiness may also occur.

Oxazepam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.

oxyBUTYnin: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and oxybutynin use. Concomitant use may result in additive anticholinergic adverse effects.

Paliperidone: (Moderate) Coadministration of drugs with CNS depressant effects, including paliperidone and meclizine, can increase both the frequency and the intensity of adverse effects such as drowsiness, sedation, and dizziness. Monitor for signs and symptoms of CNS depression and advise patients to avoid driving or engaging in other activities requiring mental alertness until they know how this combination affects them.

Paromomycin: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea secondary to vertigo).

PARoxetine: (Moderate) Of the selective serotonin reuptake inhibiting antidepressants (SSRIs), paroxetine is considered the most anticholinergic. Additive anticholinergic effects may be seen when paroxetine is used with other medications having anticholinergic properties such as meclizine. Patients should be informed to read non-prescription cough and cold product labels carefully for additional interacting antihistamines.

Peginterferon Alfa-2b: (Moderate) Monitor for adverse effects associated with increased exposure to meclizine if peginterferon alfa-2b is coadministered. Peginterferon alfa-2b is a CYP2D6 inhibitor, while meclizine is a CYP2D6 substrate in vitro.

Pembrolizumab; berahyaluronidase alfa: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.

Pentazocine; Naloxone: (Moderate) Use pentazocine with caution in any patient receiving medication with CNS depressant and/or anticholinergic activity. Coadministration of pentazocine with sedating H1-blockers may result in additive

respiratory and CNS depression and anticholinergic effects, such as urinary retention and constipation.

PENTobarbital: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.

Perampanel: (Moderate) Co-administration of perampanel with CNS depressants, including ethanol, may increase CNS depression. The combination of perampanel (particularly at high doses) with ethanol has led to decreased mental alertness and ability to perform complex tasks (such as driving), as well as increased levels of anger, confusion, and depression; similar reactions should be expected with concomitant use of other CNS depressants, such as sedating H1-blockers.

Perphenazine: (Moderate) Additive anticholinergic and sedative effects may be seen when perphenazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Perphenazine; Amitriptyline: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. (Moderate) Additive anticholinergic and sedative effects may be seen when perphenazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Pertuzumab; Trastuzumab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.

Phenelzine: (Contraindicated) Concomitant use of monoamine oxidase inhibitors and sedating H1-blockers is contraindicated due to increased anticholinergic effects.

PHENobarbital: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.

PHENobarbital; Hyoscyamine; Atropine; Scopolamine: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine. (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and hyoscyamine use. Concomitant use may result in additive anticholinergic adverse effects. (Moderate) Monitor for unusual drowsiness or excess sedation and for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and atropine use. Concomitant use may result in additive CNS depression or anticholinergic adverse effects. (Moderate) Monitor for unusual drowsiness or excess sedation and for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and scopolamine use. Concomitant use may result in additive CNS depression or anticholinergic adverse effects.

Pimozide: (Moderate) Due to the effects of pimozide on cognition, it should be used cautiously with other CNS depressants including sedating antihistamines. Sedating H1-blockers are associated with anticholinergic effects and sedation; therefore, additive effects may be seen during concurrent use with pimozide. Additive drowsiness or other CNS effects may occur.

Pitolisant: (Major) Avoid coadministration of pitolisant with meclizine as the effect of pitolisant may be decreased. Pitolisant increases histamine concentrations in the brain; therefore, H1-receptor antagonists like meclizine, may reduce pitolisant efficacy.

Plazomicin: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea secondary to vertigo).

Pramipexole: (Moderate) Concomitant use of pramipexole with other CNS depressants, such as sedating H1-blockers, can potentiate the sedation effects of pramipexole.

Pregabalin: (Moderate) Monitor for excessive sedation and somnolence during coadministration of meclizine and pregabalin. Concurrent use may result in additive CNS depression.

Primidone: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.

Procarbazine: (Moderate) Use procarbazine and sedating H1-blockers together with caution; additive central nervous system depression may occur.

Prochlorperazine: (Moderate) Additive anticholinergic and sedative effects may be seen when prochlorperazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Promethazine: (Moderate) Additive anticholinergic and sedative effects may be seen when promethazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Promethazine; Dextromethorphan: (Moderate) Additive anticholinergic and sedative effects may be seen when promethazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Promethazine; Phenylephrine: (Moderate) Additive anticholinergic and sedative effects may be seen when promethazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Propantheline: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and propantheline use. Concomitant use may result in additive anticholinergic adverse effects.

Propofol: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS

depressant effect may occur when they are combined with general anesthetics.
Protriptyline: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.
Pseudoephedrine; Triprolidine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.
Quazepam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
QUEtiapine: (Moderate) Somnolence is a commonly reported adverse effect of quetiapine. Co-administration of quetiapine with sedating H1-blockers may result in additive effects. Additive drowsiness or other CNS effects may occur.
Ramelteon: (Moderate) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when it is combined with other CNS depressants including anxiolytics, sedatives, and hypnotics, such as ramelteon.
Rasagiline: (Moderate) Concurrent use of monoamine oxidase inhibitors (MAOIs) and sedating H1-blockers (sedating antihistamines) may result in additive sedation, anticholinergic effects, or hypotensive reactions. Rasagiline may be less likely to produce these interactions than other MAOIs, due to MAO-B selectivity. However, consider alternatives therapy to antihistamines where possible. If alternative combinations are not available, these medications may be used together with close monitoring. Many non-prescription products for coughs, colds, allergy, hay fever or insomnia contain sedating antihistamines. Patients receiving rasagiline should be counseled that it is essential to consult their healthcare provider or pharmacist prior to the use of any non-prescription products. Patients should also be advised against driving or engaging in other activities requiring mental alertness until they know how this combination affects them.
Remimazolam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.
risperiDONE: (Moderate) Due to the primary CNS effects of risperidone, caution should be used when risperidone is given in combination with other centrally acting medications including meclizine. Additive drowsiness or other CNS effects may occur.
Ritonavir: (Moderate) Concurrent administration of meclizine with ritonavir may result in elevated meclizine plasma concentrations. Meclizine is metabolized by the hepatic isoenzyme CYP2D6; ritonavir is an inhibitor of this enzyme. Caution and close monitoring are advised if these drugs are administered together.

riTUXimab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.

Rivastigmine: (Moderate) Concurrent use of sedating H1-blockers and rivastigmine should be avoided if possible. Rivastigmine inhibits acetylcholinesterase, the enzyme responsible for the degradation of acetylcholine, and improves the availability of acetylcholine. Sedating H1-blockers may exhibit significant anticholinergic activity, thereby interfering with the therapeutic effect of rivastigmine.

Rolapitant: (Major) Use caution if meclizine and rolapitant are used concurrently, and monitor for meclizine-related adverse effects. Meclizine is a substrate of CYP2D6 and rolapitant is an inhibitor of CYP2D6; the inhibitory effect of rolapitant is expected to persist beyond 28 days for an unknown duration. Exposure to another CYP2D6 substrate, following a single dose of rolapitant increased about 3-fold on Days 8 and Day 22. The inhibition of CYP2D6 persisted on Day 28 with a 2.3-fold increase in the CYP2D6 substrate concentrations, the last time point measured.

rOPINIRole: (Moderate) Concomitant use of ropinirole with other CNS depressants, such as sedating H1-blockers, can potentiate the sedation effects of ropinirole.

Safinamide: (Moderate) Dopaminergic medications, including safinamide, may cause a sudden onset of somnolence which sometimes has resulted in motor vehicle accidents. Patients may not perceive warning signs, such as excessive drowsiness, or they may report feeling alert immediately prior to the event. Because of possible additive effects, advise patients about the potential for increased somnolence during concurrent use of other sedating medications, such as sedating H1-blockers.

Scopolamine: (Moderate) Monitor for unusual drowsiness or excess sedation and for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and scopolamine use. Concomitant use may result in additive CNS depression or anticholinergic adverse effects.

Secobarbital: (Moderate) Additive CNS depression may occur if barbiturates are used concomitantly with meclizine.

Sevoflurane: (Minor) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when they are combined with general anesthetics.

Sincalide: (Moderate) Sincalide-induced gallbladder ejection fraction may be affected by concurrent medications, including H1-blockers. False study results are possible; thorough patient history is important in the interpretation of procedure results.

Solifenacin: (Moderate) Additive anticholinergic effects may be seen when drugs with antimuscarinic properties like solifenacin are used concomitantly with other antimuscarinics, such as meclizine.

Stiripentol: (Moderate) Monitor for excessive sedation and somnolence during coadministration of stiripentol and meclizine. CNS depressants can potentiate the

effects of stiripentol.

Streptomycin: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea secondary to vertigo).

Suvorexant: (Moderate) Monitor for excessive sedation and somnolence during coadministration of suvorexant and sedating antihistamines (H1-blockers). Dosage adjustments of suvorexant and sedating H1-blockers may be necessary when administered together because of potentially additive CNS effects. The risk of next-day impairment, including impaired driving, is increased if suvorexant is taken with other CNS depressants. Patients should generally avoid nonprescription antihistamine products that are marketed as sleep-aids concurrently with suvorexant.

Tasimelteon: (Moderate) Because sedating H1-blockers cause sedation, an enhanced CNS depressant effect may occur when it is combined with other CNS depressants including anxiolytics, sedatives, and hypnotics, such as tasimelteon.

Temazepam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.

Terbinafine: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with terbinafine. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and terbinafine is a CYP2D6 inhibitor.

Thalidomide: (Major) Avoid the concomitant use of thalidomide with opiate agonists; antihistamines; antipsychotics; anxiolytics, sedatives, and hypnotics; and other central nervous system depressants due to the potential for additive sedative effects.

Thioridazine: (Moderate) Additive anticholinergic and sedative effects may be seen when thioridazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Thiothixene: (Moderate) Additive anticholinergic effects may be seen when antipsychotics, such as thiothixene, are used concomitantly with other drugs such as sedating H1-blockers. Additive drowsiness or other CNS effects may also occur.

tiZANidine: (Moderate) Concurrent use of tizanidine and CNS depressants like sedating h1-blockers can cause additive CNS depression.

Tobramycin: (Minor) Meclizine and other antiemetics should be used carefully with aminoglycosides because they can mask symptoms of ototoxicity (e.g., nausea secondary to vertigo).

Tolcapone: (Moderate) COMT inhibitors should be given cautiously with other agents that cause CNS depression, including sedating H1-blockers, due to the possibility of additive sedation. COMT inhibitors have also been associated with sudden sleep onset during activities of daily living such as driving, which has resulted in accidents in some cases. Prescribers should re-assess patients for drowsiness or sleepiness regularly

throughout treatment, especially since events may occur well after the start of treatment. Patients should be advised to avoid driving or other tasks requiring mental alertness until they know how the combination affects them.

Tranylcypromine: (Contraindicated) Concomitant use of monoamine oxidase inhibitors and sedating H1-blockers is contraindicated due to increased anticholinergic effects.

Trastuzumab; Hyaluronidase: (Minor) H1-blockers (antihistamines), when given in large systemic doses, may render tissues partially resistant to the action of hyaluronidase. Patients receiving these medications may require larger amounts of hyaluronidase for equivalent dispersing effect.

traZODone: (Moderate) Antihistamines that may cause sedation, such as meclizine, should be used cautiously in patients receiving trazodone because of additive CNS-depressant effects.

Triazolam: (Moderate) Coadministration can potentiate the CNS effects (e.g., increased sedation or respiratory depression) of either agent. Use caution with this combination.

Tricyclic antidepressants: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Trifluoperazine: (Moderate) Additive anticholinergic and sedative effects may be seen when trifluoperazine is used with meclizine. Patients should be informed to read non-prescription product labels carefully for additional interacting motion sickness medications.

Trihexyphenidyl: (Moderate) Monitor for signs or symptoms of anticholinergic toxicity during concomitant sedating H1-blocker and trihexyphenidyl use. Concomitant use may result in additive anticholinergic adverse effects.

Trimethobenzamide: (Moderate) The concurrent use of trimethobenzamide with other medications that cause CNS depression, like the sedating h1-blockers, may potentiate the effects of either trimethobenzamide or the sedating h1-blocker.

Trimipramine: (Moderate) Additive anticholinergic and CNS effects may be seen when tricyclic antidepressants are used concomitantly with sedating H1-blockers. Antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation.

Triprolidine: (Major) Meclizine is an H1-blocker which exhibits significant anticholinergic effects. The anticholinergic effects of meclizine may be enhanced when combined with other drugs with antimuscarinic activity, including other sedating H1-blockers. Clinicians should note that antimuscarinic effects might be seen not only on GI smooth muscle, but also on bladder function, the eye, and temperature regulation. Additive sedation may also occur.

Trospium: (Moderate) Additive anticholinergic effects may be seen when trospium is used concomitantly with drugs that are known to possess relatively significant

antimuscarinic properties, including sedating H1-blockers. Clinicians should note that additive antimuscarinic effects may be seen not only on GI smooth muscle, but also on bladder function and temperature regulation. While CNS-related side effects such as drowsiness and blurred vision are not typically noted with trospium, they may occur in some patients.

Vigabatrin: (Moderate) Vigabatrin may cause somnolence and fatigue. Drugs that can cause CNS depression, if used concomitantly with vigabatrin, may increase both the frequency and the intensity of adverse effects such as drowsiness, sedation, and dizziness. Caution should be used when vigabatrin is given with sedating H1-blockers.

Vilazodone: (Moderate) Due to the CNS effects of vilazodone, caution should be used when vilazodone is given in combination with other centrally acting medications such as anxiolytics, sedatives, and hypnotics. Also, Cyproheptadine is an antagonist of serotonin in the CNS, a property which may oppose some of the pharmacologic effects of vilazodone. Cyproheptadine has been used for the management of orgasm dysfunction caused by the serotonergic antidepressants and for the adjunctive treatment of serotonin syndrome; however, a reversal of antidepressant effects may occur when cyproheptadine is given in a routine manner along with the antidepressant. Clinically, cyproheptadine reportedly has interfered with the antidepressant and anti-bulimia actions of fluoxetine, but more data are needed to confirm a direct drug-drug interaction.

Viloxazine: (Moderate) Monitor for meclizine-related adverse effects, such as drowsiness and anticholinergic effects, when coadministered with viloxazine. Concomitant use may increase the exposure to meclizine. Meclizine is a CYP2D6 substrate and viloxazine is a CYP2D6 inhibitor.

Xanomeline; Trospium: (Moderate) Additive anticholinergic effects may be seen when trospium is used concomitantly with drugs that are known to possess relatively significant antimuscarinic properties, including sedating H1-blockers. Clinicians should note that additive antimuscarinic effects may be seen not only on GI smooth muscle, but also on bladder function and temperature regulation. While CNS-related side effects such as drowsiness and blurred vision are not typically noted with trospium, they may occur in some patients.

Zaleplon: (Moderate) Monitor for unusual drowsiness and sedation during coadministration of sedating H1-blockers and zaleplon due to the risk for additive CNS depression and next-day psychomotor impairment; dose adjustments may be necessary.

Ziconotide: (Moderate) Sedating H1-blockers are CNS depressant medications that may increase drowsiness, dizziness, and confusion that are associated with ziconotide.

Ziprasidone: (Moderate) Sedating H1-blockers are associated with sedation; therefore, additive effects may be seen during concurrent use with other drugs having CNS depressant properties such as antipsychotics. Additive drowsiness or other CNS effects

may occur with ziprasidone.
Zolpidem: (Moderate) Monitor for unusual drowsiness and sedation during coadministration of sedating H1-blockers and zolpidem due to the risk for additive CNS depression and next-day psychomotor impairment; dose adjustments may be necessary. Limit the dose of Intermezzo sublingual tablets to 1.75 mg/day.
Zuranolone: (Major) Avoid the use of multiple sedating agents due to the risk for additive CNS depression. If use is necessary, consider a downward dosage adjustment of either or both medications, especially in patients with additional risk factors for sedation-related harm.

Adverse Reaction

anaphylactoid reactions, asthenia, ataxia, confusion, dizziness, drowsiness, dyskinesia, dystonic reaction, fatigue, hallucinations, headache, impaired cognition, insomnia, palpitations, psychosis, restlessness, seizures, tardive dyskinesia, tremor, weakness

Drowsiness is common during therapy with meclizine. One study assessed the efficacy of meclizine for the prevention of nausea associated with emergency contraceptive use; at a dose of 50 mg meclizine (1 hour before the first of 2 doses of emergency contraceptive), about twice as many women receiving meclizine reported drowsiness vs. placebo or no pretreatment (31%, 13%, 16%, respectively; p less than 0.01). Dizziness may also be reported in some patients. Other less frequently occurring CNS effects of sedating antihistamines (H1-blockers) include asthenia/weakness, confusion, dysarthria (slurred speech), fatigue, or headache. There is considerable individual patient response to sedative effects, so patients should be warned of the possibility of impaired cognition. These side effects may disappear after a few days of medication use. Geriatric patients may be more predisposed to adverse CNS depressant effects. Ethanol intake will increase the risk of sedation. Sedating antihistamines can also cause a paradoxical CNS stimulation; although, this is more likely to occur in children. Symptoms may include excitability, insomnia, irritability, restlessness, palpitations, nervousness, and in severe cases, seizures. Antihistamine overdose has been linked to coma; stimulatory CNS effects such as dyskinesia, dystonic reaction, tardive dyskinesia, tremor and seizures; and neuropsychiatric effects such as hallucinations or psychosis. Rarely, ataxia and delirium are also seen. Fatalities have been reported with antihistamine overdose. In addition, the manufacturer reports anaphylactoid reactions among possible adverse events associated with meclizine use.

abdominal pain, anorexia, appetite stimulation, blurred vision, constipation, mydriasis, ocular hypertension, urinary retention, xerophthalmia, xerostomia

Most side effects reported with meclizine are attributable to the anticholinergic properties of this drug, and are similar to other sedating antihistamines (H1-blockers). Thus, all classic anticholinergic effects are possible. The most frequently reported adverse reactions to meclizine are xerostomia (dry mouth), drowsiness, and fatigue. One study compared transdermal scopolamine, oral meclizine, and placebo in the treatment of motion sickness in 36 healthy young adult volunteers (mean age 26 years). The reported incidence of dry mouth associated with each trial regimen was 58.3% for transdermal scopolamine, 22.2% for placebo, and 16.7% for oral meclizine. The manufacturer reports that blurred vision may rarely occur. Other anticholinergic effects that can occur rarely during sedating antihistamine therapy, but have not been specifically reported by the manufacturer, include thickening of bronchial secretions, urinary retention, xerophthalmia, and mydriasis. The anticholinergic effect may result in increased intraocular pressure (ocular hypertension) in susceptible patients, such as those with glaucoma. Elderly persons usually have the greatest risk of experiencing anticholinergic-related side effects. Sedating antihistamines may also generally cause adverse GI effects including constipation, appetite stimulation, anorexia, or abdominal pain.

arrhythmia exacerbation, hypotension, sinus tachycardia

The manufacturer does not specifically report adverse cardiac events due to meclizine in product literature. Such events would be considered rare with recommended short-term use. Adverse cardiovascular responses can be associated with the anticholinergic properties or the quinidine-like anesthetic effects of sedating antihistamines (such as meclizine). These responses include sinus tachycardia, palpitations, and cardiac arrhythmias/arrhythmia exacerbation. Alpha-adrenergic blockade can lead to hypotension. Hypertension may also occur but is usually not clinically significant.

Description

Meclizine is a piperazine-derivative sedating antihistamine (H1-blocker) that is structurally and pharmacologically similar to hydroxyzine. It is used as an antivertigo/antiemetic agent, specifically in the prevention and treatment of nausea, vomiting, and dizziness associated with motion sickness. Additionally, meclizine has been used in the management of vertigo in diseases affecting the vestibular apparatus. While prophylactic use of meclizine is most effective in the treatment of motion sickness, other factors such as patient age and type, severity, and duration of motion influence the effectiveness. Meclizine may cause fewer anticholinergic effects than scopolamine. Meclizine was first marketed in the U.S. in 1953.

Mechanism Of Action

Meclizine is a sedating antihistamine and an antagonist at H1-receptors. It also possesses anticholinergic, central nervous system depressant, and local anesthetic effects. Although the mechanism by which meclizine exerts its antiemetic and antivertigo effects has not been fully elucidated, its central anticholinergic properties are partially responsible. The drug depresses labyrinth excitability and vestibular stimulation, and it may affect the medullary chemoreceptor trigger zone.

Pharmacokinetics

Meclizine is administered orally. Distribution has not been fully characterized. The drug is metabolized in the liver, predominantly by CYP2D6. The plasma half-life in humans is about 5 to 6 hours. Meclizine is excreted in the urine as metabolites and in the feces as unchanged drug.

Affected cytochrome P450 isoenzymes and drug transporters: CYP2D6
In an in vitro metabolic study using human hepatic microsome and recombinant CYP enzyme, CYP2D6 was found to be the dominant enzyme for metabolism of meclizine.

Route-Specific Pharmacokinetics

- **Oral Route**

Meclizine is a sedating antihistamine (H1-blocker). In general, meclizine is well absorbed after oral administration. Maximum plasma concentrations are attained at a median of 3 hours an oral post-dose (range: 1.5 to 6 hours). The onset of action of meclizine is about 1 hour, with effects lasting between 8 to 24 hours.

- **Hepatic Impairment**

The effect of hepatic impairment on the pharmacokinetics of meclizine has not been evaluated. As meclizine undergoes hepatic metabolism, hepatic impairment may result in increased systemic exposure of the drug.

- **Renal Impairment**

The effect of renal impairment on the pharmacokinetics of meclizine has not been evaluated. Drug and metabolite accumulation is possible.

- **Pediatrics**

The pharmacokinetics of meclizine in pediatric patients have not been evaluated.

- **Other**

Poor Metabolizers of CYP2D6
The genetic polymorphism of CYP2D6 that results in poor and intermediate phenotypes

could contribute to large inter-individual variability in meclizine exposure. Monitor for adverse reactions and clinical effect in these patients accordingly.

Administration

For storage information, see the specific product information within the How Supplied section.

Oral Administration

Oral Solid Formulations

Tablets
Swallow the tablet whole.

Chewable tablets
Must be chewed or crushed before swallowing. Do not swallow the chewable tablets whole.

Oral disintegrating tablets (ODT)
Place the ODT or "fast melt" on the tongue. Once dissolved, swallow with saliva.
To prevent motion sickness, administer the dose at least 1 hour before traveling.

Maximum Dosage Limits

- **Adults**
  100 mg/day PO for vertigo; 50 mg/day PO for nausea, vomiting, or dizziness associated with motion sickness.
- **Geriatric**
  100 mg/day PO for vertigo; 50 mg/day PO for nausea, vomiting, or dizziness associated with motion sickness.
- **Adolescents**
  50 mg/day PO for nausea, vomiting, or dizziness associated with motion sickness.
- **Children**
  12 years: 50 mg/day PO for nausea, vomiting, or dizziness associated with motion sickness.
  Less than 12 years: Safety and efficacy have not been established.
- **Infants**
  Safety and efficacy have not been established.
- **Neonates**

Safety and efficacy have not been established.

Dosage Forms

- Antivert 12.5mg Tablet
- Antivert 25mg Chewable Tablet
- Antivert 25mg Tablet
- Antivert 50mg Tablet
- Bonine 25mg Chewable Tablet
- CVS Motion Sickness II 25mg Tablet
- CVS Motion Sickness Less Drowsy Formula 25mg Tablet
- CVS Motion Sickness Relief 25mg Chewable Tablet
- Dramamine Less Drowsy 25mg Chewable Tablet (Raspberry Cream)
- Dramamine Less Drowsy Formula 25mg Tablet
- Dramamine-N 25mg Tablet
- Foster & Thrive Motion Sickness 25mg Chewable Tablet (Raspberry)
- Foster & Thrive Motion Sickness Less Drowsy Formula 25mg Tablet
- GNP Motion Sickness 25mg Tablet
- GNP Motion Sickness Relief 25mg Chewable Tablet (Raspberry)
- GNP Motion Sickness Relief 25mg Tablet
- Leader Motion Sickness Relief Less Drowsy Formula 25mg Tablet
- Meclizine Hydrochloride 12.5mg Oral tablet
- Meclizine Hydrochloride 25mg Chewable tablet
- Meclizine Hydrochloride 25mg Oral tablet
- Meclizine Hydrochloride 50mg Oral tablet
- Meclizine Hydrochloride Bulk powder
- Motion-Time 25mg Chewable Tablet
- Premier Value Motion Sickness Relief II 25mg Tablet
- Quality Choice Travel Ease 25mg Chewable Tablet
- RITE AID Motion Sickness Relief 25mg Chewable Tablet
- RITE AID Motion Sickness Relief 25mg Tablet
- Today's Health Motion Relief 25mg Tablet
- Travel-Ease 25mg Tablet
- Wal-Dram II Tablet
- Walgreens Motion Sickness Relief 25mg Chewable Tablet

Dosage Adjustment Guidelines

Hepatic Impairment

Specific guidelines for dosage adjustments in hepatic impairment are not available; however, hepatic impairment may result in increased systemic exposure of the drug; use caution.

Renal Impairment

Specific guidelines for dosage adjustments in renal impairment are not available; however, drug and metabolite accumulation is possible in the presence of renal impairment; use caution.

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