

# Drugs affecting the balance system

THERAPEUTIC MANAGEMENT		MOA	indications	ADRs	Contraindication	Notes	
Prevent Recurrence		Diuretics	↓ fluid retention			not loop diuretics	
		Corticosteroids	↓ Inflammation				
		<b>L-type Ca Channel Blockers.</b> E.g.: cinnarazine, flunarazine, verapamil	↑ vasodilatation				
Vestibular Suppressants	↓ Spinning	<b>Benzodiazepines</b> (Lorazepam, Clonazepam & Diazepam)	promote & facilitate central vestibular compensation via GABA modulation				
		<b>Betahistine</b>	H1 agonists , H3 antagonists, ↑ levels of neurotransmitters such as 5HT in the brainstem		Headach, Nausea, Gastric effects & ↓ appetite and weight loss	- Peptic ulcer - Pheocromocytoma - Bronchial asthma	the best medication for spinning
		<b>H<sub>1</sub> antagonist</b> ( <b>Dimenhydrinate</b> )	- Antiemetic: Block H1 receptors in CRTZ - Sedative effect: less sedative, more antiemetic than Meclizine - Weak anticholinergic effects	- vertigo <b>- MOTION SICKNESS</b>	- Sedation - Dizziness - Anticholinergic side effects	- Glaucoma - Prostatic enlargement	
	↓ Emesis	<b>Phenothiazines</b> ( <b>Prochlorperazine</b> )	- Antipsychotic - some sedation - antiemetic effects: it Blocks dopamine receptors at CRTZ	One of the <u>best</u> antiemetics in <b>vertigo</b> (sedating & has some vestibular suppressant action)	-----		Dopamine antagonists + Sedation
		<b>Dopamine Antagonists</b> ( <b>Metoclopramide</b> )	- A potent central antiemetic acting on CRTZ - some sedating action - potent <b>gastroprokinetic</b> effect	vertigo	- Restlessness or drowsiness <b>- Extrapyramidal manifestations on prolonged use</b>		Dopamine Antagonist + Gastroprokinetic
	DRUGS INDUCING VERTIGO		VESTIBULOTOXINS	FUNCTIONAL derangement	<b>Drugs altering fluid &amp; electrolyte</b> <ul style="list-style-type: none"> <li>- Diuretics</li> <li>- Antihypertensives ....</li> </ul> <b>Drugs altering vestibular firing</b> <ul style="list-style-type: none"> <li>- Anticonvulsants</li> <li>- Antidepressants</li> <li>- Sedative hypnotics</li> <li>- Alcohol</li> <li>- Cocaine</li> </ul>		
			STRUCTURAL derangement	<b>Aminoglycoside antibiotics;</b> <ul style="list-style-type: none"> <li>kanamycin, streptomycin, tobramycin, netilmycin</li> </ul> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Gentamycin → evoke free radicals → Mitochondrial Pathway → Apoptosis.</div> <div style="border: 1px solid black; padding: 2px;">Neomycin → activate caspases → Death Receptor Pathway → Apoptosis.</div> <b>Fluroquinolones, Vancomycin, Polymixin Nitrogen mustard</b> <ul style="list-style-type: none"> <li>- Quinine, chloroquine, quinidine</li> <li>- Loop diuretics</li> <li>- NSAIDs</li> <li>- Tobacco</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">Firing of impulses → ↓ local blood flow → biochemical changes → alter electromechanical transduction</div>			
MIXED OTOTOXINS			FUNCTIONAL derangement				

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