



Peptic Ulcer
(GU & DU)

- It is caused by imbalance between:
 - Protective Factors
 - (Mucus & Bicharbonate).
 - Daming Factors
 - (HCL & pepsin).
- So, it is caused by either ↑ DF or ↓ PF.



❖ Drugs Affecting Gastric (HCL) Acid										
	DRUGS	PHARMACOKINETIC				ACTION	USES	SIDE EFFECT		
Antacid	AL(OH)₃	<ul style="list-style-type: none"> Weak bases (-OH). Taken 30 min in empty stomach. Taken 2 hrs after meal. Relieve heart burn immediatly. 				1) Neutralize already secreted acid. 2) Inhibit formation of pepsin	Slowly Fast Fast & sustained	Used for symptomatic relife of dyspepsia	<ul style="list-style-type: none"> Constipation. In renal failure, <ul style="list-style-type: none"> ↳ Aluminum toxicity ↳ Encephalopathy 	
	MG(OH)₂	<ul style="list-style-type: none"> If it take with other drugs, <ul style="list-style-type: none"> ↳ It form insoluble com;ex that adsorb on GIT wall not absorb. So, it take 2 hrs after or before other druds 							<ul style="list-style-type: none"> Diarrhoea 	
	Combination								<ul style="list-style-type: none"> Constipation + Diarrhoea = nothing 	
Additives	Simethicone	<ul style="list-style-type: none"> They are added to antacid either it combined or no. 				<ul style="list-style-type: none"> ↓ surface tension <ul style="list-style-type: none"> ↳ So, reduce bubble formation. Form a layer of foam on the top of gastric content. 	<ul style="list-style-type: none"> Anti-flatulent. To prevent reflux. 			
	Alginates								<ul style="list-style-type: none"> Reduce reflux 	
H ₂ antagonist (blokera) Extremely save drugs		Potency	T _{1/2}	Duration (hrs)	Inhibition of Cyto-450	Cyto-450 is an enzyme that metabolizes drugs.		H ₂ antagonist cross placenta & are also secreted in breast milk.		
	Cimetidine	1	1.5 – 2.3	6	1				Not used by elderly male because it is anti-androgenic	<ul style="list-style-type: none"> Gynecomastia. Galactorrhea. Inhibition of Cyto-450 <ul style="list-style-type: none"> ↳ So, ↑conc. of Theophyline & Warfine.
	Ranitidine	5 -10	1– 2.4	8	0.1					
	Famotidine	32	2.5 - 4	12	0					
Omeprazole	<ul style="list-style-type: none"> Average T_{1/2}= 1.5 hrs. Need acidic media, So <ul style="list-style-type: none"> ↳ Taken 1 hr befor meal. ↳ Don't take with other acid suppressing agent. 				Irreversible inhibitors for H ⁺ /K ⁺ ATPase					
Lansoprazole										
Anti-muscarinic	Pirenzepine					Inhibit gastric acid by blocking M ₃ receptor	<ul style="list-style-type: none"> Used in refractory cases that is not responding to other drugs. Used in nocturnal pain. 			



PHARMACOLOGY - Treatment of Peptic Ulcer

❖ Muocosal protective Agents					
	DRUGS	PHARMACOKINETIC	ACTION	USES	SIDE EFFECT
	Sucralfate	<ul style="list-style-type: none"> It is salt of (sucrose + $Al(OH)_3$). Taken 1 hr before meal. Work in acidic pH ↳ Not used with antacid or H_2 antagonist. 	<ol style="list-style-type: none"> In acidic pH, it become viscous gell & protect ulcer. Stimulate PG production. 		
	Misoprostol	It is a PGE_1 analogue	<ol style="list-style-type: none"> Gastric acid inhibition. Stimulate secretion of mucus & bicarbonate. Enhance mucosal blood flow. 	Used with NSAID to prevent peptic ulcer	<ul style="list-style-type: none"> Diarrhoea Abdominal pain. Abortion?
	Bismuth subsalicylate		<ol style="list-style-type: none"> Coat the ulcer stimulate secretion of mucus & bicarbonate. ↑ PG synthesis. 		<ul style="list-style-type: none"> Stain stools & tongue with black color. Cause bismuth toxicity with long used.
	Bismuth sobcitate				
❖ Drugs eradicate Helicobacter pylori					
	DRUGS	PHARMACOKINETIC	ACTION	USES	SIDE EFFECT
Triple Therapy	Omeprazole Or Lansoprazole (PPI)	<ul style="list-style-type: none"> It is combination of ONE acid suppressant + 2 antibiotics. Given for 14 days. Then, followed by PPI for 4 - 6 wks. 			
	Clarithromycin				
	Amoxycillin or Metronidazole				
Quadruple Therapy	Omeprazole Or Lansoprazole (PPI)	<ul style="list-style-type: none"> It is combination of ONE acid suppressant + 3 antibiotics. Given when triple therapy fails. 			
	Bismuth Subsalicylate				
	Metronidazole				
	Tetracycline				