

## PUD Drugs

Drugs	MOA	Pharmacological action	Uses	Side effects
<b>Anti-secretory drugs</b> <b>1. H2 blocker</b>  <b>Cimetidine</b> <b>Ranitidine</b> <b>Famotidine</b> <b>Nizatidine</b>	They <b>competitively &amp; reversibly</b> bind to H <sub>2</sub> -receptors on the <b>parietal cells</b> → ↓ production of acid.	↓ basal & food-stimulated gastric secretion. ↓ acid secretion stimulated by histamine, as well as by gastrin & cholinergic drugs. ↓ pepsin activity. <b>Block 90% of nocturnal acid secretion</b> → better to take at night.	<b>GERD</b> (heartburn/ dyspepsia). <b>PUD</b> : effective in nocturnal acid suppression & ulcer healing in moderate cases. <b>Zollinger Ellison Syndrome</b> (large doses). Prevention of bleeding from stress-related gastritis. <b>↓ the heartburn by NSAIDs.</b>	<b>1. CNS effects:</b> Headache, confusion, hallucination & agitation due to H <sub>2</sub> antagonists ( <b>Cimetidine</b> ). <b>2. Endocrine effects (Cimetidine)</b> ↑ Serum prolactin ( <b>Galactorrhea</b> in women) & Inhibits binding of dihydro-testosterone to androgen receptors ( <b>gynecomastia - impotence</b> ). 3. All <b>cross</b> placenta & breast milk, should not be given in pregnancy. 4. <b>Leukopenia &amp; thrombocytopenia</b> & headache ( <b>Ranitidine</b> ).
<b>2. Proton pump inhibitor</b>  <b>Omeprazole</b> <b>Lansoprazole</b> <b>Pantoprazole</b> <b>Raprazole</b>	<b>Irreversible</b> inhibition of proton pump (H <sup>+</sup> / K <sup>+</sup> ATPase).	<b>Prodrugs</b> (need acid to be activated). <b>Orally.</b> <b>Esomeprazole &amp; pantoprazole</b> are also available in <b>IV</b> . They are rapidly absorbed from the intestine & converted to active form.	Gastric & duodenal ulcer (H.pylori Eradication). <b>Zolinger Elison syndrome.</b> <b>GERD.</b> <b>NSAIDs.</b>	Headache, diarrhea, nausea ↓ gastric acid secretion lead to <b>hypergastermeia</b> (G cell hyperplasia) & mucosal hyperplasia if used for <b>long period</b> . Prolonged acid suppression leads to: <b>↓ B12 levels.</b> Risk of <b>hip fracture</b> if taking PPIs over a <b>long period</b> . Colonization & infection of the stomach & intestine from ingested bacteria → ↑ risk of both community-acquired respiratory infections & nosocomial <b>pneumonia</b> .

	CIMETIDINE	RANITIDINE	FAMOTIDINE	NIZATIDINE
<b>Efficacy</b>	+++	+++	+++	+++
<b>Potency</b>	+	++	+++	++
<b>Dose</b>	400 mg bid	150 mg bid	<b>20mg</b> bid	150 mg bid
<b>Route</b>	orally, IV	orally, IV	orally, IV	orally
<b>T 1/2</b>	short (2 h)	longer (3h)	longer (3h)	shortest (1
<b>Duration</b>	5-6 h	10 h	12 h	11 h
<b>CYT P 450</b>	++	-	-	-
<b>Antiandrogenic</b>	++	-	-	-
<b>Drug interactions</b>	many	No	No	No

✓ **Eradication of H.Pylori:**  
 PPIs bid (H<sub>2</sub> blockers 2<sup>nd</sup> choice).  
 Clarithromycin, 500 mg bid.  
 Amoxicillin, 1 g bid.