Oral Acid Suppression - Comparison Chart [1,2,3,4]

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Generic/TRADE/Pregnancy Category	Comments / Drug Interactions (DI) / Side Effects (SE)	Dose (Adult) [5,6], Use, ~Duration	$ / 30d
H2-Receptor Antagonists (H2RA's) : particularly effective for nocturnal acid suppression (have been used daily at HS in patients on a daytime PPI regimen)			
Cimetidine TAGAMET B 200✗▼,300,400,600,800✗▼mg tab;60mg/ml soln	•few significant differences between H2RA's: **ranitidine** (or cimetidine) may be preferred H2RA's due to comparable safety, efficacy and lower cost - **may avoid cimetidine** in patients who are **elderly** or at ↑**risk of DI's** •**DI's**: Cimetidine ☞ inhibition of CYP_{450} system e.g. warfarin, phenytoin, theophylline, etc. (Ranitidine has minor effect on the CYP_{450} system; nizatidine/famotidine little or no effect on CYP_{450} system). - space **antacid** administration 30-60 minutes apart from H2RA's •**SE:** Uncommon: diarrhea, constipation, headache, fatigue, confusion (risk increased in elderly and in patients with decreased renal function) **SE: Cimetidine** ☞ slightly higher side effect risk seen with higher doses for a prolonged time; reversible gynecomastia (< 1%); weak antiandrogenic effect; may cause transient ↑ in SCr & LFTs •↓ **dosage** in patients with ↓ **renal fx, ↓ hepatic fx, or elderly** •higher dosages may be suitable for some patients/conditions	**800mg po HS** –GU acute x 8wk, DU acute x 4-8wk 600mg po BID –GERD	**15** 17
Famotidine PEPCID B 20, 40mg tab {20mg, 40mg Vial}		**40mg po HS** –GU acute x 8wk, DU acute x 4-8wk 20mg po HS –PUD maint.† 20mg po BID –GERD 20mg **IV** q12h	**37** 24 40 250
Nizatidine AXID B 150, 300mg cap		**300mg po HS** –GU acute x 8wk, DU acute x 4-8wk 150mg po HS –PUD maint.† 150mg po BID –GERD	**41** 24 39
Ranitidine ZANTAC B 150, 300mg tab; 15mg/ml oral solution {50mg Vial}		**150mg po bid or 300mg po HS** –GU acute x 8wk, DU acute x 4-8wk 150mg po HS –PUD maint.† 150mg po BID –GERD 50mg **IV** q12h *or* 150mg **oral** solution BID	27 or **26** 17 27 120
Proton Pump Inhibitors (PPI's): DI's: levels ↓ for drugs dependent on low pH for absorption→[itraconazole/ketoconazole, calcium carbonate, iron]; can be given with antacids. GERD: often **od** rather than bid dose needed. [6] **Long term** use: serum B12 levels can be decreased especially in the elderly. More effective than H2RA's for daytime/meal related acid secretion.			
Esomeprazole NEXIUM B 20, 40mg Delayed Release tab	•**S-isomer of omeprazole**:↑ bioavailability, 40mg has ↑ efficacy vs omeprazole 20mg (control of intragastric pH/healing rates in GERD); similar SE's [7]	**40mg po OD** –GERD acute x 2-8wk 20mg po OD –GERD maint.	☎⊗ **82** 82
Lansoprazole PREVACID B 15, 30mg Delayed Release cap can mix in applesauce for swallowing difficulties	•**DI:** ↓ theophylline levels by 10%; also some inhibition of CYP2D6 •**SE:** diarrhea 4.1%, HA 2.9%, nausea 2.6%, rash.•Long-term safety established •effective in hypersecretory conditions e.g. ZES: dose range 30-90mg po BID •may provides more rapid symptom relief (compared to omeprazole) but healing rates/outcomes similar •may give contents via **NG tube** in apple juice	≤30mg po OD –GU acute x 4-8wk **15mg po OD** –DU acute x 2-4wk 30mg po OD –PUD[refract] x8-12wk, GERD acute x2-8wk ≥15mg po OD –GERD maint.	79 **79** ☎✆ 79 79
Omeprazole LOSEC,APO not interchangeable C 10, 20mg Delayed Release tab Losec **MUPS** (micropellets):available "hospital only"	•**DI:** inhibition of CYP2C19 (↑ levels of phenytoin, diazepam, warfarin) •**SE:** HA 2.4%; diarrhea 1.9%; nausea 0.9%, rash •Long-term safety established •effective in hypersecretory conditions eg. ZES: dose range: 60_{mg} OD–120_{mg} TID • **NG tube**: use • **MUPS** or Susp [compounded] or mix tab with sodium bicarbonate	≤40mg po OD –GU acute x 4-8wk **20mg po OD** –DU acute x2-4wk, GERD acute x2-8 wk 40mg po OD –PUD[refract] x 8-12 wk ≥10mg po OD –GERD maint.	**106**[APO],165 **57**✚[APO], **86** ☎✆ 165 70
Pantoprazole PANTOLOC B 40mg Enteric tab, 20mg✗▼ tab; 40mg Vial}	•rapid onset / similar outcomes vs omeprazole **SE:** HA; diarrhea; nausea; pruritus •**less DI's** as less CYP450 effect •**IV** 40mg IV od or GI bleed [80mg bolus; 8mg/hr x72hr] •effective in hypersecretory conditions e.g. ZES: Dose range 40-120mg po BID	**40mg po OD** –GU acute x4-8wk,DU acute x2-4wk,GERD acute x2-8 wk ≥20mg po OD –GERD maint. 40mg **IV** OD	☎✆ **75** 63 430
Rabeprazole PARIET B 10mg ☎ ▼, 20mg ✗⊗ Enteric coated tab	•**SE**: HA 2.4%, rash, diarrhea NIHB **full formulary** status •(currently **lowest cost** PPI if 10mg tablet strength used)	**20mg**[(2x10mg)] **po OD** –GU & DU acute, GERD x 4-8 wk 10mg po OD –GERD maint	☎▼ **54**✚ **30**

= ↓dose for renal dysfx **Cost** =total cost in Sask.; Considerations of cost should be given to the potential for shorter duration of therapy & ↑ efficacy of PPIs vs H2RAs. ▼=covered by NIHB ⊗=not covered by NIHB ✚=Max. allowable cost ☎ =Exception Drug Status in SK. ✗ =non-formulary in SK. ✆=prior approval required for NIHB coverage **CYP** =cytochrome P_{450} enzymes **DI** =drug interaction **DU**=duodenal ulcer **GERD**=gastroesophageal reflux disease **GI**=gastrointestinal **GU**=gastric ulcer **HA**=headache **LFTs**=liver function tests **PUD**=peptic ulcer disease **SCr**=serum creatinine **SE**=side effect **ZES**=Zollinger-Ellison Syndrome † =*H. pylori* eradication preferable to long-term acid suppression in PUD; **PREVENT NSAID induced ulcers** in high GI risk patients: **usual dose PPI**[17] or misoprostol X 200ug TID $38 (range BID-QID)

OTC H2-Receptor Antagonists

Famotidine✱	**PEPCID AC** coated / chewtab	10mg Tab	x30/ ≥ $12
Ranitidine	**ZANTAC-75**	75mg Tab	x30/ ≥ $12

Generic versions of famotidine/ranitidine available; cost of 30 tablets/ <$10

Special Considerations [8,9]

•**Pregnancy**: H2RAs ☑-all B; **ranitidine** preferred.[9] PPIs ⊠: lansoprazole & pantoprazole are B; omeprazole C

•**Lactation**:H2RAs ☑-famotidine may be preferred. PPIs ⊠- avoid due to lack of data & potential adverse effects

•**Pediatrics**: H2RAs -caution in children <12 years; PPIs -caution, not well established; omeprazole ☑ (1 study)[10]

✱ Pepcid Complete Formula (famotidine/calcium carbonate/magnesium hydroxide; 10 tabs ≅ $9) ☑=may use if benefit outweighs risk ⊠=avoid if possible

B = Risk Factor B: no evidence of risk (in animal studies or uncontrolled human studies) C = Risk Factor C: possible risk to fetus (evident in animal studies)

NSAID ulcer Risk Factors[4]: (x= ↑ in odds ratio risk) History of ulcer complications x13.5, Multiple NSAIDS x9, High dose NSAIDS x7, Concomitant anticoagulant use x6.4, Age≥70 x5.6, Age ≥60 x3.1, Concomitant steroids x2.2, History of heart Disease x1.8

◆ **Lifestyle changes for DIET, EXERCISE, moderate alcohol use & stop SMOKING!**

Acid Suppression - Comparison Chart Supplement
***The Rx Files* - Loren Regier, Brenda Schuster**

References

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