

⇒ Consider pts previous antibiotic exposure to maximize efficacy. If fails one triple regimen; repeat therapy with a different antibiotic combo, or treat for 2week rather than one, or use quadruple tx. 🇨🇦

	Selected Regimens	Days	Cost	ITT ≥80%	Comments ¹ (PPIs are best given ~30min before meals)
First-Line Triple Therapy (PPI + amoxicillin + clarithromycin) [C]	Hp-PAC ☞ ▼: lansoprazole 30mg po BID ☞ ▼ amoxicillin 1000mg po BID clarithromycin 500mg po BID ☞ ▼	X7d	\$ 103	✓	<ul style="list-style-type: none"> • Hp-PAC: all 3 meds in a single 7day blister pack^{only 1 dispensing fee} • lower dose of clarithromycin (250mg) was effective in some studies but is not currently recommended; using two of the 500mg XL od with food is ~\$5more than the regular formulation • SE: diarrhea (~28%), taste disturbance (~15%) • CI: avoid if penicillin allergy • esomeprazole NEXIUM 1-2-3-A ☞ ⊗ 20mg po BID^{\$102 regimen} as effective as omeprazole 20mg BID and an option to listed PPIs² • rabeprazole PARIET ☞ ▼ 20mg BID -approved; similar efficacy³; 7day rabeprazole/amoxicillin/clarithromycin = \$78^{generic}
	LOSEC 1-2-3-A : omeprazole 20mg po BID ☞ Agents used in peds trial ⁴ amoxicillin 1000mg po BID clarithromycin 500mg po BID ☞ ▼	X7d	\$88 ^{generic} ▼ \$104 ^{LOSEC} ☞	✓	
	Pantoprazole PANTOLOC 40mg po BID ☞ ☞ amoxicillin 1000mg po BID clarithromycin BIAXIN 500mg po BID ☞ ▼	X7d	\$90 ^{generic} \$99	✓	
First-Line Triple Therapy (PPI + metronidazole + clarithromycin) [C]	lansoprazole PREVACID 30mg po BID ☞ ☞ metronidazole FLAGYL 500mg po BID clarithromycin BIAXIN 250mg po BID ☞ ▼	X7d	\$ 76	✓	<ul style="list-style-type: none"> • Drug-Lab Interaction: PPIs & H2RA should be stopped ≥1week & antibiotics 4 weeks prior to culture & histology for <i>H. pylori</i>. {For the ^{13/14}C-urea breath test stop for: antibiotics^{4 weeks}, bismuth^{2 weeks}, PPIs^{3 days} & H2RAs^{1 day} to prevent false negative results^{Helikitt}. Concurrent antacids will not affect the urea breath test} • 250mg dose of clarithromycin preferred as better tolerated, equal or better efficacy (MACH I study⁵), and less costly than using the 500mg dose as in the PPI + amoxicillin regimens • pantoprazole & rabeprazole regimens less potential DI's than omeprazole, but the generic forms of omeprazole, pantoprazole & rabeprazole regimens are the least expensive • avoid alcohol! (DI: metronidazole^{→disulfiram rx, ↓clarithromycin by rifampin}) • SE: taste disturb. (~14%), diarrhea (~13%), headache (~6%); Also (less common): neuropathy, coated tongue • esomeprazole NEXIUM ☞ ⊗ 20mg BID^{\$77 regimen} an option to listed PPIs • rabeprazole PARIET ☞ ▼ 20mg BID \$59^{generic regimen} an option to listed PPIs
	LOSEC 1-2-3-M : omeprazole 20mg po BID ☞ metronidazole 500mg po BID clarithromycin 250mg po BID ☞ ▼	X7d	\$63 ^{generic} ▼ \$79 ^{LOSEC} ☞	✓	
	pantoprazole PANTOLOC 40mg po BID ☞ ☞ metronidazole FLAGYL 500mg po BID clarithromycin BIAXIN 250mg po BID ☞ ▼	X7d	\$65 ^{generic} \$74	✓	
Alternate First-Line Quadruple Tx Regimens (PPI + bismuth + 2 antibiotics)	Omeprazole ☞ or rabeprazole ☞ ▼ or other PPI 20mg po BID + bismuth subsalicylate- PEPTO BISMOL 30mls po QID ^x ▼ metronidazole 250mg po QID tetracycline 500mg po QID ac [D]	X7d X14d	\$60 ^{generic} ▼ \$75 ^{LOSEC} ☞ \$96 ^{generic} ▼	✓	<ul style="list-style-type: none"> • 14 day quadruple tx most effective but less well tolerated & more \$\$. 10-14 day option for 1st line⁶ or treatment failure. • PEPTO BISMOL suspension preferred to tablets to avoid drug interaction with tetracycline (PEPTO BISMOL tablets contain calcium carbonate which can interfere with tetracycline) • SE: temporary darkening of stool and tongue, diarrhea • CI: porphyria, renal dysfx (CrCl <25ml/min), pregnancy, children; avoid alcohol

☞ =EDS Exceptional Drug Status Sask. ☞ =prior approval NIHB coverage ▼ =covered NIHB ⊗ =not covered by NIHB DI=Drug interactions ER=eradication rate MCI=major contraindications PPI=Proton pump inhibitors SE=Side Effects

Length of Tx: 7day regimens ↓cost & ↑compliance; but ↑ER's with 14 day regimens^{American ACG→ 10-14day}; suggest 14d for kids⁷ **Compliance** & resistance determines eradication success; warn pts for SE.

Resistance: Cdn 2004¹⁴: metronidazole ~20% relative, clarithromycin ↑from 2% to 8% absolute & amoxicillin ~1% (may affect ERs)⁸ **Bismuth/metronidazole** combos appear effective even if ↑ metronidazole resistance.

Follow-up acid suppression (with PPI or H2RA) **not generally** indicated^{esp duodenal ulcers} once *H. pylori* eradicated⁹ **except for** acute ulcer healing^{esp gastric ulcers}, if symptomatic or if complicated/high risk pts.

Other regimens: 1. Quadruple 14 day therapy (ranitidine 300mg po BID + bismuth 30ml po QID + metronidazole 250mg po QID + tetracycline 500mg po QID; ER >80%^{ITT}).

2. Classic triple therapy (bismuth 30ml po QID + metronidazole 250mg po QID + tetracycline 500mg QID x14days; ER~78%^{ITT}). 3. Maclor 5day regimen:¹⁰ PPI or high dose H2RA + metro + amox + clarithromycin

4. Quadruple 1 day regimen¹¹: PPI double dose + Pepto Bismol 2 tab qid + metronidazole 500mg qid + amoxicillin 2gm qid Needs more validation: 5. Levofloxacin regimens¹³ 6. **Sequential treatment**^{Jafr'i'08} promising

Intention to treat analysis (ITT): Canadian Consensus Conference 1998 classified treatments as "recommended" when controlled trials had at least 80% eradication efficacy by ITT analysis.¹¹

Search & treat beneficial if: symptomatic with high risk ethnic background (Aboriginals, Asians, Hispanics), family hx of gastric cancer, ?long-term NSAID/ASA tx.¹² Overall ~ 30% of Canadians are infected^{t's} with age.

H. pylori causes ~90% of duodenal & ~70% of gastric ulcers. If GERD, *H. pylori* testing often not required.

Risk of Reinfection: Low at 3.4% per pt year in developed countries; & 8.7% in developing countries.^{Fuccio BMJ'08}

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

The Rx Files - H. pylori Eradication

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