Alberta Health Services Pharmacy Services

Issue 13: May 2016

Drugs and Therapeutics Backgrounder

Proton Pump Inhibitor (PPI) Deprescribing

BOTTOM LINE: PPIs are commonly used, but not always with a valid indication, for chronic therapy. Elderly patients are at higher risk for adverse effects from chronic PPI use. They should be evaluated for appropriateness of therapy, with subsequent tapering and discontinuing if continued therapy is not indicated.

Background:

- 4th most commonly dispensed class of medications in Canada[1]
  - 3rd most common among seniors, 2nd highest for those 85+ and highest for those in long-term care (LTC) facilities[2]
- Up to 60% of patients on PPIs may not have a proper indication[3]

Indications for PPI Use:[4]

- Gastroesophageal Reflux Disease (GERD)
  - Cochrane review found that 9/10 patients will respond to a PPI, but 3 of those would have improved with placebo and an additional 3 would have improved with a histamine-2 receptor antagonist (H2RA)[5]
- Barrett's esophagus
- After peptic ulcer disease (PUD) or gastrointestinal (GI) bleed
- NSAID gastroprotection:
  - History of complicated ulcer OR 1 or more risk factors
  - Risk factors:
    - Age greater than 65
    - High dose NSAIDs
    - History of uncomplicated ulcer
    - Concurrent use of aspirin (including low dose), corticosteroids or anticoagulants[6]

Choice of PPI:

- All PPIs are equally efficacious, so the lowest cost option should be considered[5]

Safety:

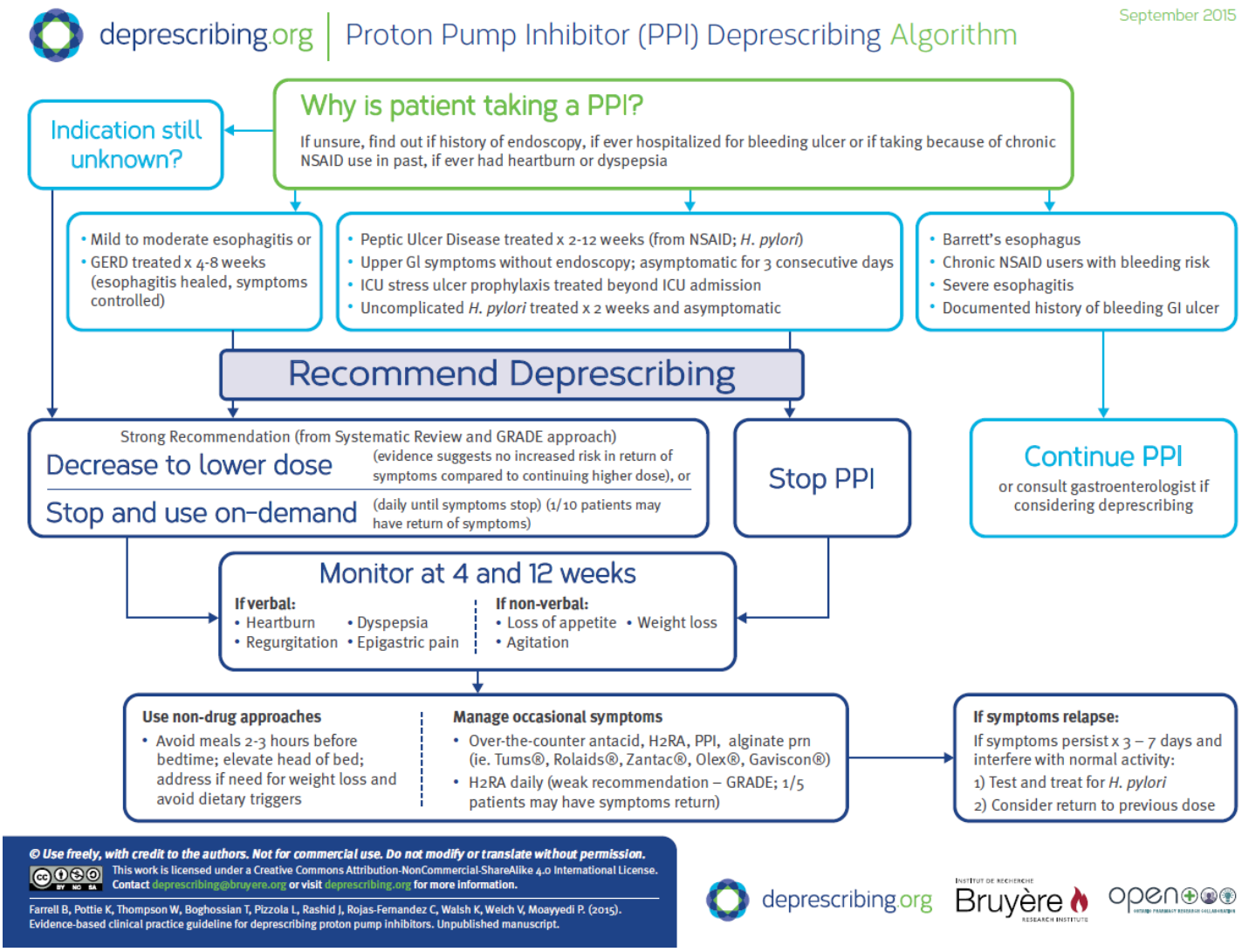
- Large systematic reviews suggest an association of chronic PPI exposure with *Clostridium difficile* (CDI) infection (OR 1.93-2.05)[7,8]; recurrence also higher in PPI-exposed (NNH=15)[9]
- Association with hip fracture risk, if real, is likely extremely small; NNH of ~2000 post-menopausal female smokers over 8 years to cause 1 additional hip fracture[10]
- Association with pneumonia; 1 additional case of pneumonia per 100 patients per year on PPI[11]; also associated with 15 additional cases of hospitalization for recurrent pneumonia over 5 years in the elderly, so focus should be on those patients with history of pneumonia[12]
- Association with hypomagnesemia; consider discontinuing if unexplained, severe case of hypomagnesemia[4]
- Associated with development of vitamin B12 deficiency (OR 1.36-2.46)[13]

Putting Deprescribing into Practice:

- Successful, without symptom deterioration, in 15-65% of subjects, less effective if GERD indication[4]
- Risk of symptomatic rebound acid secretion, so tapering preferred
  - Either decrease the dose by 50% or maintain same dose but give every other day[4]
- In GERD, 60-70% show no esophagitis on endoscopy (non-erosive reflux disease)[14]
  - Unless endoscopic evidence of esophagitis, attempt to stop PPI annually[15]
  - If unsuccessful, consider on-demand therapy[16]. Patient takes only when symptomatic and stops when not
- Palliative patients and LTC patients nearing end of life should be focuses for deprescribing efforts; one review found that of LTC patients with advanced dementia who took any medication during their last week of life, almost 20% were on a PPI[17]
- Any patient with pneumonia or CDI should be taken off PPI, if possible, to reduce risk of recurrence

Prepared by: Tony Nickonchuk, B.Sc.Pharm. email AHS.PharmacyDrugStewardship@ahs.ca for more information
Reviewed by: Dr. Mike Kolber, MD MSc CCFP

Resources:



Bye-Bye, PPI. A toolkit for deprescribing proton pump inhibitors in EMR-enabled primary care settings. (contains detailed deprescribing algorithm). Choosing Wisely Canada, Wintemute K. 2015. Accessed April 11, 2016.
Available at: http://www.choosingwiselycanada.org/wp-content/uploads/2016/04/CWC_PPI_Toolkit_v1.0_2016-03-31.pdf

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