Formulary Factsheet: Proton Pump Inhibitors

Cornwall and Isles of Scilly

Background

Proton pump inhibitors (PPIs) are one of the most frequently prescribed drugs worldwide, but a number of studies show that they are often prescribed without an appropriate indication. This has financial and potentially adverse clinical consequences[1]. The use of PPIs has been linked to *Clostridium difficile* infection as well as fractures and other infections[2, 3]. A 2010 NPC MeReC Bulletin[4] reported that a large observational study found that hospital inpatients taking daily PPIs were over 70% more likely to develop *Clostridium difficile* infection than non-users. It goes onto state that a second US study found that people who already have *C difficile* infection and are treated with PPIs had a more than 40% increased relative risk of recurrence of infection In the light of this, PPIs should be reserved for patients where there is a clear indication and clinicians should consider stopping PPIs where the indication is unclear. There are data to support stopping PPIs in patients who have been taking them long term[5].

The Bottom Line

1. Check indication and stop PPIs where appropriate in patients with *Clostridium difficile* diarrhoea.
2. There is no indication for acid suppression in patients taking corticosteroids unless they have GI symptoms or other risk factors for GI disease.
3. PPIs are not indicated for use in non-specific abdominal symptoms
4. Where a PPI is indicated the lowest effective dose should be prescribed
5. Prescribe antacids, i.e. Peptac, or a H2 antagonist, i.e. ranitidine, for mild reflux

Indications for starting or continuing an oral PPI

Indication	**PPI dose and course length**
Patients admitted with a history of haematemesis and/or melaena	Await endoscopy, if this can not be done promptly consider omeprazole capsules 2x20mg once daily and adjust according to the gastroscopy result
Treatment of Dyspepsia	Omeprazole capsules 10-20mg OD for **up to 4 weeks** then symptom and dose review.
Treatment and maintenance of significant Gastro-oesphageal reflux disease (GORD)	Omeprazole capsules 20-40mg OD **for 4-8 weeks** then symptom and dose review
NSAID Protection for high risk patients	Omeprazole capsules 20mg OD whilst taking NSAID
Duodenal and Gastric acid ulcer (*Hp* positive)	Omeprazole capsules 20mg BD for 7 days (in addition to *Hp* eradication)
Duodenal, gastric and non-steroidal anti-inflammatory drug (NSAID) associated ulcers	Omeprazole capsules 20mg OD for 4-6 weeks
Zollinger-Ellison Syndrome	Omeprazole capsules 20-120mg OD
Barrett's oesophagus	Omeprazole capsules 2x20mg once daily
High-risk ulcers, visible vessel and evidence of active bleeding	72 hour IV Pantoprazole infusion (Esomeprazole in Derriford)

Formulary Factsheet: Proton Pump Inhibitors

NHS Cornwall and Isles of Scilly

Notes

- **Proton pump inhibitors (including Zoton Fastabs), are absorbed in the small bowel**. Where there is gastric outlet obstruction an intravenous preparation should be used, i.e. pantoprazole (RCHT) esomprazole (Derriford).

- For patients with dysphagia or having tube feeding a dispersible preparation may be preferable. Dispersible preparations should not routinely be prescribed in any other circumstances. Lansoprazole dispersible tablets are the first choice based on cost and the higher risk of omeprazole dispersible blocking fine-bore tubes.

- Some patients require high doses of omeprazole capsules. The indications are:

    - Patients with short bowel syndrome/high output stomas. High dose PPI (e.g omeprazole 20mg bd to 40mg bd) is used in an attempt to limit the quantity of gastric secretions hence stoma output in these patients.
    - Maintenance or remission in severe GORD
    - Treatment of reflux associated with scleroderma
    - Prevention of recurrence of oesphageal stricture
    - Treatment of Barrett's oesophagus
    - The small minority of patients who are rapid metabolisers and need high doses simply to control symptoms

- Omeprazole capsules are cheaper than omeprazole tablets. Doubling up on 20mg omeprazole capsules is cheaper than prescribing 40mg capsules.

Preparation	Cost for 40mg daily for 28 days (Feb 13')
Omeprazole capsules 20mg	**£2.62**
Omeprazole capsules 40mg	£5.36
Omeprazole tablets 20mg	£13.94
Omeprazole tablets 40mg	£22.48

- Esomeprazole tablets are not currently on the CIOS Joint Formulary. The Plymouth Area Joint formulary suggests that esomeprazole should only be rarely used in some patients who fail on high doses of omeprazole. This will be a consultant only initiated prescription. Pantoprazole or rabeprazole may be useful in patients truly intolerant of omeprazole or lansoprazole

Stopping a PPI

- Patients should aim to achieve symptom control on the lowest dose and frequency.
- Patients should have an annual review and be encouraged to try stepping down the dose and/or stopping treatment. Symptoms can then be managed as required with OTC antacids/alginates.
- Consider the placebo effect of functional dyspepsia. Stop treatment after 4-8 weeks and only continue if symptoms recur. Warn patients that they may experience a transient worsening on stopping treatment, but things should settle within a few weeks.

References

1. Forgacs I, Loganayagam A. Overprescribing proton pump inhibitors. BMJ 2008;336(7634):2-3.
2. Dial S, Delaney JA, Barkun AN et al. Use of gastric acid-suppressive agents and the risk of community-acquired Clostridium difficile-associated disease. JAMA 2005;294(23):2989-95.
3. Yang YX, Lewis JD, Epstein S et al. Long-term proton pump inhibitor therapy and risk of hip fracture. JAMA 2006;296(24):2947-53.
4. National Prescribing Centre. Increased risk of C difficile infections and of fractures: two more good reasons to review PPI prescribing, 2010. http://www.npc.nhs.uk/rapidreview/?p=1494
5. Bjornsson E, Abrahamsson H, Simren M et al. Discontinuation of proton pump inhibitors in patients on long-term therapy: a double-blind, placebo-controlled trial. Aliment Pharmacol Ther 2006;24(6):945-54.
6. Vine L, Philpott R, Fortun P.(2012) Proton Pump Inhibitors: how to withdraw treatment. Prescriber, 23: 12-16.

Date of preparation: Feb 2013. Based on a document from Plymouth Hospitals NHS Trust