Initiating Proton Pump Inhibitors

York and Scarborough
Medicines Commissioning Committee

Guidance for Safe and Effective use of Proton Pump Inhibitors

General principles for appropriate prescribing of PPIs

Proton pump inhibitors (PPIs) are one of the most frequently prescribed drugs, but are often prescribed without an appropriate indication and continued indefinitely without review. These should **only** be prescribed where there is a clear indication and reviewed regularly with intentions of deprescribing where appropriate.

There are indications where the benefits of long term PPI use outweigh the risks:

- Barrett's Oesophagus
- Oesophageal stricture dilation
- Severe oesophagitis complicated by past strictures, ulcers or haemorrhage
- Previous peptic ulcer with major haemorrhage
- Zollinger- Ellison Syndrome
- Gastroprotection for NSAID/antiplatelet therapy in high risk patients (see page 2)

For other indications, short term treatment doses are usually only necessary for 4-8 weeks. PPIs should be reduced to maintenance doses (or deprescribed) when the underlying condition has been effectively treated.

If patients are presenting with symptoms of dyspepsia, review medication for possible causes and provide lifestyle advice. If a PPI is required, prescribe in line with NICE CG184 - GORD and dyspepsia in adults.

Patients should be counselled on the adverse effects and potential known risks associated with long term use (see below). Adverse effects are usually mild and reversible and include headache, diarrhoea, nausea, abdominal pain, constipation, dizziness and skin rashes. See individual monographs in the BNF for up-to-date information.

Known risks associated with long term PPI use

Clostridium difficile infection
Evidence suggests that PPI use is associated with an increased risk of Clostridium difficile infection. If patients are at a high risk of C.difficile infection, they must be reviewed and PPIs deprescribed, as appropriate.

Osteoporotic fractures
There is evidence of a modest increased risk of fracture with PPIs especially if used in high doses and over long durations (>1year).Treat patients at risk of osteoporosis according to the current clinical guidelines and ensure they have an adequate intake of vitamin D and calcium.

Hypomagnesaemia
Severe hypomagnesaemia has been reported infrequently in patients treated with PPIs. For patients expected to be on prolonged treatment, and especially for those who take PPIs with digoxin or drugs that may cause hypomagnesaemia (e.g. diuretics), healthcare professionals should consider measuring magnesium levels before starting PPI treatment and repeat measurements periodically during treatment.

Community acquired pneumonia
Recent initiation of PPI therapy (within the last 30 days) is strongly associated with both community and hospital acquired pneumonia (commonly linked with gastric bacterial overgrowth and aspiration).

Acute interstitial nephritis
A rare association has been reported between acute interstitial nephritis and PPIs. It can occur between several hours and four months following treatment with a PPI. The standard treatment involves early diagnosis, withdrawing the causative drug, administering steroids and clinical assessment.

Very low risk of subacute cutaneous lupus erythematosus(SCLE)
PPIs are associated with very infrequent cases of SCLE, a non-scarring dermatosis that can develop in sun-exposed areas. Consider stopping use of the PPI unless it is imperative for a serious acid-related condition. A patient who develops SCLE with a particular PPI may be at risk of the same reaction with another.

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Initiating Proton Pump Inhibitors with Antiplatelet therapy

1. When initiating antiplatelet therapy

Review and confirmed need for antiplatelet therapy
Check if patient is taking OTC medicines such as NSAIDS/aspirin

2. Assess risk for antiplatelet-induced GI adverse events

- Older age, especially aged over 70 years.
- A high dose of aspirin.
- A history of gastroduodenal ulcer, GI bleeding, or gastroduodenal perforation.
- Concomitant use of medications that are known to increase the likelihood of upper GI adverse events (for example, anticoagulants, corticosteroids, NSAIDs, SSRI).
- Dual antiplatelet therapy

Risk factors present

High risk:

If they have risk factors present and taking low-dose aspirin alone, or in combination with another antiplatelet consider prescribing **15mg lansoprazole daily (first line formulary option)**

Do not use omeprazole or esomeprazole as the PPI if patient is on clopidogrel

Before commencing long-term treatment with a PPI consider risks vs benefits. (see page 1)

No risk factors present

Low Risk:

If they have no risk factors present, provide general advice to help avoid GI adverse effect

No PPI required

Monitoring and Review

Review long term PPI prescribing to reduce the potential risk of Clostridium difficile, bone fractures and to a lesser extent the risk of higher mortality in older patients, acute interstitial nephritis, community acquired pneumonia, hypomagnesaemia, vitamin B12 deficiency and rebound acid hypersecretion. There may be indications where the benefits of long term PPI use outweigh the risks (e.g. Barrett's Oesophagus, oesophageal stricture dilation) assess on an individual basis and review regularly.
If patients develop Clostridium difficile infection and no other GI risk factors are present then the PPI should be deprescribed. Similarly if the patient has acute kidney injury, PPI should be deprescribed and a histamine2 receptor antagonists should be used if gastro-protection is required.

Additional guidance

- Ensure that appropriate patients are regularly reviewed and monitored for side effects during treatment.
- PPI should be stopped when the antiplatelet is stopped. For other indications of PPI usages ensure there is a set duration/ review date
- Use the lowest effective dose and the shortest duration of treatment necessary to control symptoms.
- Avoid concomitant use of an NSAID with low-dose aspirin (if possible) – if this is essential, monitor closely
- Before commencing treatment, risks need to be discussed and documented in the patient's notes
- Do not prescribe enteric coated aspirin
- Smoking increases risks, if patient is a smoker offer smoking cessation services

References : 1 West Essex CCG Advisory guidance on when to initiate a PPI for gastro-protection March 2019
2. Barsley CCG Guidance for Safe and Effective use of Proton Pump Inhibitors March 2018

Simple Steps to Stop Proton Pump Inhibitors

Engaging patients and carers

Patients and/or carers may be more likely to engage if they understand the rationale for deprescribing (risks of continued PPI use; long-term therapy may not be necessary), and the deprescribing process (see page 4).

PPI side effects and risks

When an ongoing indication is unclear, the risk of side effects may outweigh the benefit.

- PPIs are associated with higher risk of fractures, C. difficile infections, diarrhoea, community-acquired pneumonia, vitamin B12 deficiency, hypomagnesemia, hyponatraemia, acute interstitial nephritis and chronic kidney disease.
- Common side effects include headache, nausea, diarrhoea and rash.

Tapering doses and self care

There is no evidence to suggest that one tapering approach is better than another however gradual step down reduces the risk of rebound hyperacidity and the need to reinstate.

- Lowering the PPI dose
  - Reduce from twice daily to once daily, or halving the dose, or taking every second day **OR**
  - stopping the PPI and using it on-demand is equally a recommended strong option. Advise the patient to use on-demand daily PPI for a period sufficient to resolve reflux-related symptoms; following symptom resolution discontinue the medication until symptoms recur and restart PPI daily until the symptoms resolve.
- Choose what is most convenient and acceptable to the patient.
- Advise the patient there may be an increase in symptoms for a few days.
- Managing occasional reflux symptoms
  - Advise the patient to purchase OTC remedies such as antacids, alginates and H2RA's.
- Lifestyle and diet changes should be maintained to resolve reflux related symptoms.
  - Avoid meals 2-3 hours before bedtime
  - Elevate head of bed
  - Address if a need for weight loss
  - Avoid dietary triggers, e.g. caffeine, chocolate, fatty foods
  - Smoking cessation
  - Reduce/ stop alcohol intake
  - Regular exercise

Guidance on continuing PPI

- There is lack of evidence to suggest that high dose PPI therapy is of any greater benefit in patients taking antiplatelet therapy. Prescribers should consider reducing high risk patient to low dose lansoprazole (15mg daily) if benefit outweighs risk (see pages 1 & 2).
- Do not use omeprazole or esomeprazole as the PPI if patient is on clopidogrel, this may decrease the efficacy of clopidogrel
- If PPI is to continue for any other indication, prescriber should exercise their clinical judgement on whether the patient should continue on their usual dose or to reduce to a lower dose if benefit outweighs risk. Consult product literature for recommended doses of the individual indications

Proton Pump Inhibitor Deprescribing Algorithm

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Why is the patient prescribed a PPI? Does prescribing follow recommendations in NICE CG184?

If unsure, find out if the patient:

- Has previously had an endoscopy.
- Has ever been hospitalised for a bleeding ulcer.
- Is taking PPI for gastroprotection against an ulcerogenic medicine.
- Has ever had heartburn or dyspepsia.

Indication still unknown?

- Mild to moderate oesophagitis or
- GORD treated x 4-8 weeks (oesophagitis healed, symptoms controlled)

- Peptic ulcer disease treated for 2-12 weeks (from NSAID use; H. pylori)
- Upper GI symptoms without endoscopy; asymptomatic for 3 consecutive days
- ICU/surgery stress ulcer prophylaxis treated beyond a hospital admission
- Uncomplicated H. pylori treated for 2 weeks and now asymptomatic

Documented history of any of the following:

- Barrett's oesophagus
- Severe oesophagitis
- History of bleeding GI ulcer
- On-going, uncontrolled GORD
- Used for gastro-protection as patient is co-prescribed a potentially ulcerogenic medicine:
  - Antiplatelets
  - Anticoagulants
  - Corticosteroids
  - NSAID or SSRI +NSAID

Recommend deprescribing the PPI

- Taper to lower dose(see page 3): Evidence suggests no increased risk in return of symptoms compared with continuing higher dose, OR
- Stop and use on demand (see page 3): Daily until symptoms stop

Stop the PPI

If potentially ulcerogenic medicine(s) stopped.

Continue the PPI

PPI with antiplatelet therapy
Reduce high risk factor patients to low dose lansoprazole (15mg daily) if benefit outweighs risk. If no risk factors are present, consider deprescribing PPI. (See page 2 for risk factors)

Monitor at 4 & 12 weeks for:

- Heartburn
- Dyspepsia
- Regurgitation
- Epigastric pain
- Loss of appetite
- Weight loss

Non-pharmacological interventions:

- Avoid meals 2-3 hours before bedtime
- Elevate head of bed
- Address if a need for weight loss
- Avoid dietary triggers, e.g. caffeine, chocolate, fatty foods
- Smoking cessation
- Reduce/ stop alcohol intake

Manage occasional symptoms using:

- Over the counter: Antacid, alginate, PPI, H2RA -take as required **or**
- H2RA daily

If symptoms relapse:

If symptoms persist for between 3-7 days and interfere with normal activity:
1) Test and treat for H. pylori, if present.
2) Consider returning to previous dose.
3) Further attempt to stop the PPI after 2-4 weeks of continued therapy.

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References : 1. Canadian Deprecribing Network https://deprescribing.org/wp-content/uploads/2018/08/ppi-deprescribing-algorithm_2018_En.pdf
2. Prescqipp https://www.prescqipp.info/media/1574/attachment-2-proton-pump-inhibitor-desprescribing-algorithm-21.pdf