Proton Pump Inhibitor (PPI) Deprescribing Algorithm

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Why is patient taking a PPI?
If unsure, find out if history of endoscopy, if ever hospitalized for bleeding ulcer or if taking because of chronic NSAID use in past, if ever had heartburn or dyspepsia

- Mild to moderate esophagitis or GERD treated x 4-8 weeks (esophagitis healed, symptoms controlled)
- Peptic Ulcer Disease treated x 2-12 weeks (from NSAID; H. pylori)
- Upper GI symptoms without endoscopy; asymptomatic for 3 consecutive days
- ICU stress ulcer prophylaxis treated beyond ICU admission
- Uncomplicated H. pylori treated x 2 weeks and asymptomatic
- Barrett’s esophagus
- Chronic NSAID users with bleeding risk
- Severe esophagitis
- Documented history of bleeding GI ulcer

Recommend Deprescribing

Indication still unknown?

- Strong Recommendation (from Systematic Review and GRADE approach)
  (evidence suggests no increased risk in return of symptoms compared to continuing higher dose), or
  (daily until symptoms stop) (1/10 patients may have return of symptoms)

- Decrease to lower dose
- Stop PPI
- Stop and use on-demand

Monitor at 4 and 12 weeks

If verbal:
- Heartburn
- Regurgitation
- Dyspepsia
- Epigastric pain

If non-verbal:
- Loss of appetite
- Weight loss
- Agitation

Use non-drug approaches
- Avoid meals 2-3 hours before bedtime; elevate head of bed; address if need for weight loss and avoid dietary triggers

Manage occasional symptoms
- Over-the-counter antacid, H2RA, PPI, alginate prn (ie. Tums®, Rolaids®, Zantac®, Olex®, Gaviscon®)
- H2RA daily (weak recommendation – GRADE; 1/5 patients may have symptoms return)

If symptoms persist x 3 – 7 days and interfere with normal activity:
1) Test and treat for H. pylori
2) Consider return to previous dose

Continue PPI or consult gastroenterologist if considering deprescribing
### PPI Availability

<table>
<thead>
<tr>
<th>PPI</th>
<th>Standard dose (healing) (once daily)*</th>
<th>Low dose (maintenance) (once daily)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Omeprazole (Losec®) - Capsule</td>
<td>20 mg*</td>
<td>10 mg*</td>
</tr>
<tr>
<td>Esomeprazole (Nexium®) - Tablet</td>
<td>20 mg or 40 mg*</td>
<td>20 mg</td>
</tr>
<tr>
<td>Lansoprazole (Prevacid®) - Capsule</td>
<td>30 mg*</td>
<td>15 mg*</td>
</tr>
<tr>
<td>Dexceloprazole (Dexilant®) - Capsule</td>
<td>30 mg or 60 mg*</td>
<td>30 mg</td>
</tr>
<tr>
<td>Pantoprazole (Tecta®, Pantoloc®) - Tablet</td>
<td>40 mg</td>
<td>20 mg</td>
</tr>
<tr>
<td>Rabeprazole (Pariet®) - Tablet</td>
<td>20 mg</td>
<td>10 mg</td>
</tr>
</tbody>
</table>

#### Legend

- **a** Non-erosive reflux disease
- **b** Reflux esophagitis
- **c** Symptomatic non-erosive gastroesophageal reflux disease
- **d** Healing of erosive esophagitis
- **+** Can be sprinkled on food

* Standard dose PPI taken BID only indicated in treatment of peptic ulcer caused by *H. pylori*; PPI should generally be stopped once eradication therapy is complete unless risk factors warrant continuing PPI (see guideline for details)

### Engaging patients and caregivers

Patients and/or caregivers 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

### PPI side effects

- When an ongoing indication is unclear, the risk of side effects may outweigh the risk of benefit
- PPIs are associated with higher risk of fractures, *C. difficile* infections and diarrhea, community-acquired pneumonia, vitamin B12 deficiency and hypomagnesemia
- Common side effects include headache, nausea, diarrhea and rash

### Tapering doses

- No evidence that one tapering approach is better than another
- Lowering the PPI dose (for example, from twice daily to once daily, or halving the dose, or taking every second day) OR stopping the PPI and using it on-demand are equally recommended strong options
- Choose what is most convenient and acceptable to the patient

### On-demand definition

Daily intake of a PPI for a period sufficient to achieve resolution of the individual’s reflux-related symptoms; following symptom resolution, the medication is discontinued until the individual’s symptoms recur, at which point, medication is again taken daily until the symptoms resolve

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