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PPI Deprescribing Practices for GERD in Primary Care Offices In Western CT

Ridgefield, CT, Family Medicine

Angela Troia

September 2019- October 2019

Project Mentor: Dr. Nick Florio, MD



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PROBLEM IDENTIFICATION

More than **60 million** persons in the United States report symptoms of gastroesophageal reflux disease (GERD) at least weekly, and a typical full-time family physician can expect to diagnose and treat **40 to 60 patients with this condition each month** ⁽¹⁾

A recent 2020 study that surveyed 71,812 individuals in the US, found that 2 out of 5 participants have had GERD symptoms in the past and 1 out of 3 had symptoms in the past week ⁽²⁾

Proton pump inhibitors (PPIs) are considered the mainstay of medical therapy for GERD.

Currently, the American Academy of Family Physician recommends that PPIs be used when a patient is exhibiting signs and symptoms of GERD, which include heartburn & regurgitation. The recommendation includes starting patients with suspected GERD on the **lowest effective dose PPI and shortest duration of therapy, with a typical regimen lasting 2-12 weeks.** ^(1, 7)

Yet even with these guidelines' patients are often kept on PPIs for months or years without adequate diagnostic reason.



PROBLEM IDENTIFICATION

While PPIs are highly effective at reducing stomach acid, they are not without risks. *Short term uses of PPIs are generally well tolerated and involve little risk; however, chronic use of PPIs is associated with significant side effects including* (5):

- Diarrhea
- Impaired B12 absorption
- Hypomagnesemia
- Clostridium difficile infection
- Hip fractures
- Pneumonia.

There are currently **no guidelines for PPI tapering** (6)

*PPIs have also become widely accessible to patients as many of them are currently **available over the counter and require no prescription**, which has also allowed for patients to continue PPI therapy without direct guidance from a healthcare provider*

The aim of this project is to determine the barriers that prevent PPI deprescribing in cases of GERD

Table 2. Potential Adverse Effects of Proton Pump Inhibitors

<i>Adverse effect</i>	<i>Comments</i>
<i>Clostridium difficile</i> infection ⁶⁻⁸	Nosocomial and recurrent infection following hospital discharge Proposed mechanism is <i>C. difficile</i> overgrowth from elevated gastric pH
Community-acquired pneumonia and hospital-acquired pneumonia ⁹⁻¹¹	Histamine H ₂ antagonists and PPIs have been implicated in pneumonia Sucralfate (Carafate) use does not alter gastric pH and may offer an advantage over PPIs and H ₂ antagonists
Fractures of the hip, wrist, and spine ¹²⁻¹⁴	The U.S. Food and Drug Administration requires labeling change for all PPIs Higher fracture risk with PPI use than with H ₂ antagonists Mechanism is reduced calcium absorption from increased gastric pH PPIs may exacerbate symptoms when discontinued
Gastric acid rebound or reflux symptoms after discontinuation of PPIs ^{15,16}	
Iron deficiency anemia in patients with low baseline iron stores ¹⁷	Acid suppression is proposed mechanism of reduced iron absorption
Major adverse cardiac events in the year following percutaneous angiography in those taking PPIs and clopidogrel (Plavix) ^{18,19}	Clopidogrel label changed to recommend avoiding concurrent omeprazole (Prilosec) use because it decreases the effectiveness of clopidogrel
Rehospitalization with concomitant use of PPIs and clopidogrel after admission for acute coronary syndrome ²⁰⁻²²	The American College of Cardiology and the American Heart Association guidelines suggest that H ₂ antagonists be considered for the treatment or prevention of gastrointestinal injury in patients on dual antiplatelet therapy
Reinfarction in patients taking PPIs and clopidogrel ²³	Pantoprazole (Protonix) use does not affect clopidogrel effectiveness

PPI = proton pump inhibitor.

Information from references 6 through 23.

PUBLIC HEALTH COST

While PPIs are highly effective at managing GERD, they can be quite costly to the patient and can pose a large economic burden

It has been estimated that prescribed medications for GERD, primarily PPIs, account for over 50% of prescriptions for all digestive diseases, resulting in around \$10 billion in annual direct health care costs ⁽³⁾

A 2010 study found that the PPI, esomeprazole, accrued more than \$5.2 billion in sales in the US ⁽³⁾

A 2014 study identified that \$6.69 billion was paid by patients taking high-cost PPIs ⁽⁴⁾.



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COMMUNITY HEALTH PERSPECTIVE

In order to gain community perspective, I reached out to two medical providers at the Ridgefield Primary Care office about PPI deprescribing in the primary setting

What do you think are the major barriers for PPI deprescribing?

There is no question that PPI deprescribing is very important. Unfortunately, patients feel that there is never a good time to go off a potentially dangerous medication and having a good conversation with the patients on risks and benefits, tapering the medication takes a long time. Rarely patients follow up for GERD alone and they have a full agenda for other reasons to come for a follow up. I have made a point to deescalate therapy and these efforts were blocked recently by the poor availability of H2 blockers as well as the pulling off the market of Ranitidine for a few months. Recently there has been a shortage of Famotidine. The rebound from PPIs can be significant, a despite using H2 blockers there is a period of discomfort that the patients feel and most of them call back that they want back on medication. –*Dr. Alex Mosteanu, MD*

Major barriers for PPI deprescribing include provider and patient awareness of the current evidence in therapy duration, the side effects of chronic PPI use, and a lack of continuity in prescription refills/ management. –*Dr. Nick Florio, MD*

How do you think PPI management can be improved?

PPI management can be improved by educating both patients and providers in current evidence-based guidelines on duration of therapy, side effects of chronic PPI use, deprescribing algorithms and increasing patient continuity for office visits and refill requests. –*Dr. Nick Florio, MD*

Better patient education- pamphlets; better availability of H2 blockers; many times, GI is starting patients on PPIs and the plan for short course is not clearly stated. Some patients have indication for longer course (Barrett's) but there is no clear plan on when these meds need to be started and tapered. Patients will do much better if the plan of therapy is discussed from the beginning with the expectation of what will happen after 2-3 months of therapy (de-escalating discussion). –*Dr. Alex Mosteanu, MD*



INTERVENTION

Using the information gathered from interviews with physicians in the Ridgefield office, a survey was created using SurveyMonkey and distributed to medical providers at **Ridgefield Primary Care** and **Newtown Primary Care** to determine perspectives on PPI management for GERD and to understand what barriers currently prevent PPI deprescribing.

PPI Deprescribing Practices Survey

UVM Medical Student Community Health Project

1. Do you believe PPI deprescribing is important for GERD management?

- Yes
 No

2. What barriers prevent PPI deprescribing/tapering?

- Office visit time constraint/ Not enough time during the visit to discuss fully.
 Limited follow up visits.
 Patient reluctance to decrease medication.
 Multiple providers involved in patient management.
 Not enough evidence to support deprescribing.
 Poor tapering guidelines.
 Over the counter availability limits provider management.
 Other (please specify)

3. Would telehealth follow up visits help with PPI management?

- Yes
 No

4. How often do patients presents taking OTC PPIs without initial provider recommendation?

- Always
 Often
 Sometimes
 Rarely
 Never

5. Do you believe the pamphlet that provides information regarding PPI use will help educate patients and cause more proactive PPI management?

- Yes.
 No.



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INTERVENTION

How long should I take a Proton Pump Inhibitor (PPI) for GERD?



PPIs are potent inhibitors of stomach acid and can help reduce symptoms associated with gastroesophageal reflux disease (GERD).

Many PPIs are available by prescription or over the counter:

- Omeprazole (**Prilosec**, **Zegerid**)
- Lansoprazole (**Prevacid**)
- Pantoprazole (**Protonix**)
- Esomeprazole (**Nexium**)

Why stop a PPI?

While PPIs are widely available and useful for treating GERD, their **recommended duration of use is 2-12 weeks**. New research suggests that there are **serious risks of staying on a PPI for long periods of time**. Some of these risks include:

Low B12 and Magnesium levels
Hip Fractures
C. difficile infection (gut infection)
Pneumonia

How to decide when to stop

While stopping a PPI is ideal for most cases of GERD, there are instances in which chronic PPI therapy may be useful. It is important to speak with your medical provider to discuss the risks and benefits.

How to stop PPI therapy

Cessation of PPI therapy can be hard as rebound symptoms of GERD can and tend to occur. To prevent rebound symptoms from occurring it is recommended that PPIs are slowly tapered. Guidelines are not yet established on how to taper PPIs, and there is no specific or 'right' method for discontinuing PPI therapy. One PPI discontinuing recommendation is to:

Make sure you are on the **lowest dose PPI**. If you are not, **cut the dose in ½ every week until you are the lowest dose daily**.

Example: *If taking Prilosec 40mg once daily, cut back to Prilosec 20mg once daily for a week*

Example: *If taking Prilosec 20mg twice daily, cut back to Prilosec 20mg once daily*

Once on the lowest dose once daily, start **alternate-day therapy**. On the days that the PPI is not taken an alternative medication, such as Famotidine (Pepcid) can be taken. Continue for 1-2 weeks.

Example: *PPI one-day, Famotidine (Pepcid) the other-day.*

PPI can be decreased to once every 3 days and eventually completely discontinued. **Follow up with your provider.**

Occasional symptoms may be managed with over the counter on-demand therapy such as Tums or Pepcid.

This is not the only tapering method. Speak with your provider to find out other ways to taper & stop PPI therapy that might work better for you.

How to avoid GERD symptoms

Certain lifestyle & dietary changes can help relieve symptoms of GERD and can aid in the process of discontinuing your PPI:

- Weight loss & regular exercise
- Quit smoking
- Avoid heartburn triggers foods/drinks
- Sleep with your head and shoulders propped up
- Avoid lying down for at least **3 hours after a meal**

Talk to your doctor or healthcare professional about whether stopping your PPI is the right choice for you

A pamphlet for patients was created and given to providers along with the survey.

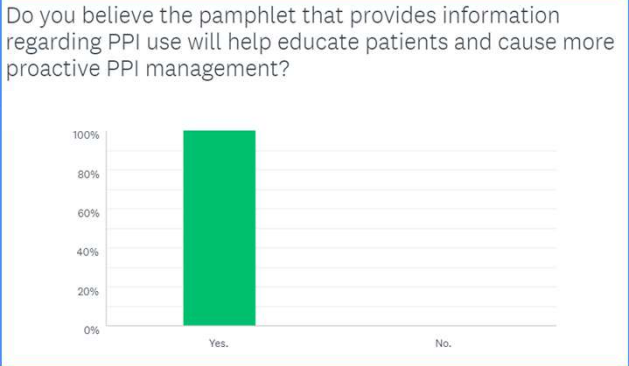
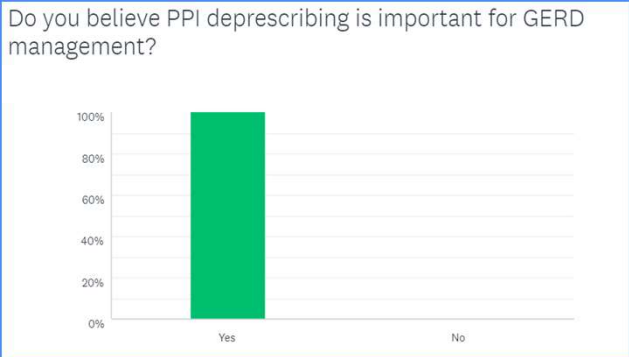
The last question of the survey asked providers if they thought that the pamphlet would help educate patients on long-term side effects of PPIs



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RESULTS

10 total survey responses were collected



All providers (100%) agree that:

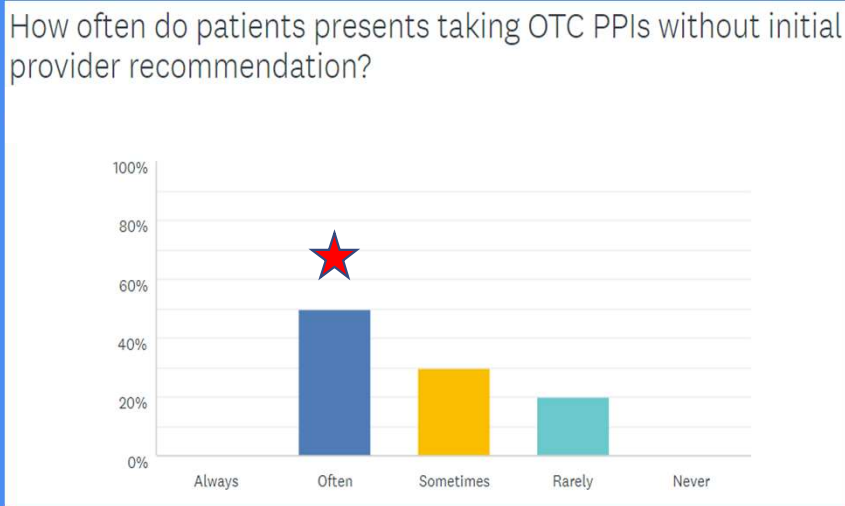
- **PPI deprescribing for GERD is important**
- **Telehealth visits may help with deprescribing PPI's for GERD**
- **The patient pamphlet that I created would help with patient education on the topic**

These results suggest that there is awareness amongst providers regarding PPI management. Given that telehealth has become common practice in the age of COVID, it may be useful to help manage patients GERD and start PPI tapering if possible.

Some PPIs are available OTC, which make them hard to manage.

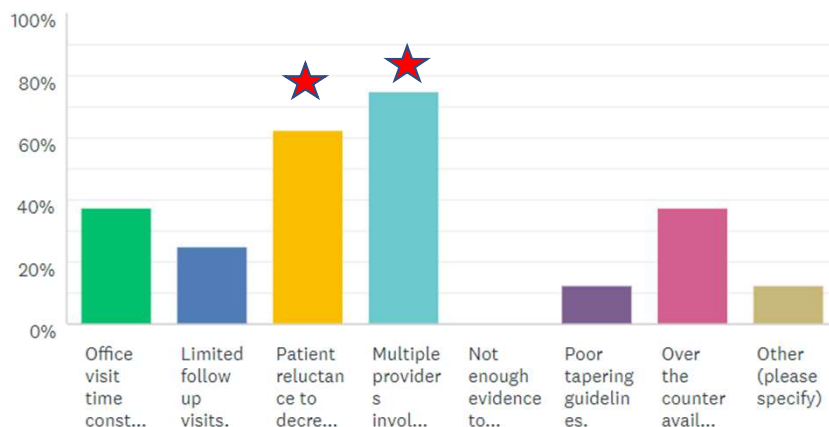
5/10 of the providers surveyed often have patients initiating a PPI for GERD without provider recommendation

These results indicate that patient education may be important for PPI use management.



RESULTS

What barriers prevent PPI deprescribing/tapering?



The question regarding barriers only received 8 responses, meaning 2 providers did not respond. Unclear as to why but could be due to confusion regarding the question.

From the 8 responses collected, 2 main barriers were established:

- **Multiple providers involved in PPI management (6/8)**
- **Patient reluctance to decrease PPI (5/8)**

These results suggests that efforts to prevent PPI prescriptions from being filled by non-initiating providers could assist in management of PPI. Patient education regarding the risks associated with PPI chronic use may also make patients more willing to consider tapering.

ANSWER CHOICES	RESPONSES
Office visit time constraint/ Not enough time during the visit to discuss fully.	37.50% 3
Limited follow up visits.	25.00% 2
Patient reluctance to decrease medication.	62.50% 5
Multiple providers involved in patient management.	75.00% 6
Not enough evidence to support deprescribing.	0.00% 0
Poor tapering guidelines.	12.50% 1
Over the counter availability limits provider management.	37.50% 3
Other (please specify)	Responses 12.50% 1



~37.5% of providers surveyed also found **constraints of office visit time and OTC availability of PPIs to be important barriers.**



EFFECTIVENESS AND LIMITATIONS

The effectiveness of this intervention will be determined in future months by the number of patients that talk to their provider about their PPI use. Whether it is the provider or the patient that decides to start a conversation about chronic PPI use, the mere fact that the conversation is occurring can be considered a win.

Future assessment of effectiveness

- A follow up survey in the next few months to see if providers have engaged in more patient discussion regarding PPIs
- Conduct a survey involving pharmacists to determine their perspective on over-the counter PPI use
- Determine if the presence of the brochure in the office increased patient interest in PPI tapering

Limitations of the project

- There still are not concrete guidelines for how patients should be tapered off their PPI
- PPIs are still available over the counter, which makes it an ongoing challenge for providers to monitor patient PPI use
- Patients often feel very comfortable on PPI therapy and may not change even with education via a pamphlet or provider
- Only 8/10 providers answered the survey question regarding barriers to PPI tapering



FUTURE PROJECTS

- **Distribute pamphlets to the Ridgefield Primary Care office as well as other offices in the Danbury area**
- **Consider pamphlet distribution at nearby pharmacies**
- **Consider conducting an educational seminar on PPI management with gastroenterology.**
- **Compile data on the effectiveness of the pamphlet in initiating conversation regarding PPI use**
- **Follow up with patients that have tapered off PPI and collect data regarding their perspective of the tapering/ deprescribing process**



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