**Supplement 2.** Survey questions administered.

**PPI Survey #2  
Draft 3  
May 18, 2018**

Thank you for your willingness to participate in this survey. We are interested in learning more about how you use proton pump inhibitors (PPIs) in your clinical practice. PPIs include medications such as omeprazole (Prilosec), esomeprazole (Nexium), pantoprazole (Protonix), and lansoprazole (Prevacid).

1. **How familiar, if at all, are you with the published scientific data on possible adverse effects from PPI use?**Very familiar  
   Somewhat familiar  
   Slightly familiar  
   Not at all familiar Skip to Q. 3
2. **How much, if at all, have recent studies about adverse effects of proton pump inhibitors (PPIs) changed your PPI prescribing habits?**Very much  
   Somewhat  
   Slightly  
   Not at all
3. **In general, how concerned are you about adverse effects when prescribing PPIs to your patients?**Very much  
   Somewhat  
   Slightly  
   Not at all
4. **How frequently, if ever, do you discuss the risks of adverse effects with patients before starting a PPI?**Often  
   Sometimes  
   Rarely  
   Never
5. **How frequently, if ever, do patients on PPI therapy bring up concerns about the risk of adverse effects from PPIs?**Often  
   Sometimes  
   Rarely  
   Never
6. **Do you believe PPIs increase the risk of any of the following conditions?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Yes** | **No** | **Unaware of association with PPI use** |
| Acute Interstitial Nephritis |  |  |  |
| Chronic Kidney Disease |  |  |  |
| Clostridium Difficile infection |  |  |  |
| Death |  |  |  |
| Dementia |  |  |  |
| Fracture of a bone |  |  |  |
| Gastric cancer |  |  |  |
| Heart Attack |  |  |  |
| Osteoporosis or Osteopenia (weakening of the bones) |  |  |  |
| Pneumonia |  |  |  |
| Stroke |  |  |  |
| Vitamin B12 deficiency |  |  |  |
| Vitamin D deficiency |  |  |  |

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1. **(Only show the conditions from Q.6 to which Respondent said “yes”. If “None”, Skip to first scenario) When you prescribe PPIs, which one of these possible adverse effects do you worry most about clinically? (select one)**Acute Interstitial Nephritis  
   Chronic Kidney Disease  
   Clostridium Difficile infection  
   Dementia  
   Fracture of a Bone  
   Gastric Cancer  
   Heart Attack  
   Osteoporosis or Osteopenia (Weakening of the Bones)  
   Pneumonia  
   Stroke  
   Vitamin B12 Deficiency  
   Vitamin D Deficiency

None of these (Exclusive response)

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**We will now present four different scenarios. In each one, the patient defers to you for management of her medications.   
  
(Randomize the first three scenarios. The 4th one will always be last)  
  
Scenario 1**

**A 70 year-old woman presents to your clinic for routine follow-up. She has a prior history of gastroesophageal reflux disease (GERD) (heartburn several times a week), now with no reflux symptoms on omeprazole 20 mg daily for many years. Her medical history is otherwise unremarkable. She takes no other medications. Recent laboratory studies and an upper endoscopy are unremarkable. She recently underwent a Dual Energy X-ray Absorptiometry (DEXA) scan, which revealed osteopenia.**

1. **How would you manage the patient’s omeprazole?**Continue the omeprazole  
   Stop the omeprazole  
   Stop the omeprazole and also start an H2-blocker, like ranitidine (Zantac)
2. **How important, if at all, would preventing recurrence of her GERD symptoms be to your decision?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Not at all**  **important 0** | **1** | **2** | **3** | **4** | **5** | **Extremely**  **important 6** |
| **○** | **○** | **○** | **○** | **○** | **○** | **○** |

1. **How important, if at all, would consideration of bone fracture risk be in your decision?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Not at all**  **important 0** | **1** | **2** | **3** | **4** | **5** | **Extremely**  **important 6** |
| **○** | **○** | **○** | **○** | **○** | **○** | **○** |

**Scenario 2 (New Page)**

**A 70 year-old woman presents to your clinic for routine follow up. She has a history of coronary artery disease and atrial fibrillation for which she takes aspirin 81 mg daily and warfarin. She also takes omeprazole 20 mg daily to “protect her stomach.” She has no history of gastrointestinal problems. She takes no other medications and has no symptoms. She recently underwent a Dual Energy X-ray Absorptiometry (DEXA) scan, which revealed osteopenia.**

1. **How would you manage the patient’s omeprazole?**Continue the omeprazoleStop the omeprazole  
   Stop the omeprazole and also start an H2-blocker, like ranitidine (Zantac)

**Scenario 3 (New Page)  
  
A 70 year-old woman presents to your clinic for routine follow up. She takes aspirin 81 mg daily for a history of coronary artery disease. She also takes omeprazole 20 mg daily to “protect her stomach.” She has no history of gastrointestinal problems. She takes no other medications and has no symptoms. She recently underwent a Dual Energy X-ray Absorptiometry (DEXA) scan, which revealed osteopenia.**

1. **How would you manage the patient’s omeprazole?**Continue the omeprazoleStop the omeprazole  
   Stop the omeprazole and also start an H2-blocker, like ranitidine (Zantac)

**Scenario 4 (Make this the last one)  
  
A 70 year-old woman presents to your clinic for routine follow-up. She has a history of coronary artery disease for which she takes aspirin 81 mg daily. About 10 years ago, she underwent an endoscopy due to dyspepsia and was diagnosed with peptic ulcer disease caused by use of ibuprofen, which she no longer uses. She takes omeprazole 20 mg daily to “protect her stomach.” She currently has no symptoms. She recently underwent a Dual Energy X-ray Absorptiometry (DEXA) scan, which revealed osteopenia.**

1. **How would you manage the patient’s omeprazole?**Continue the omeprazoleStop the omeprazole  
   Stop the omeprazole and also start an H2-blocker, like ranitidine (Zantac)
2. **How important, if at all, would consideration of upper GI bleeding risk be in your decision?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Not at all**  **important 0** | **1** | **2** | **3** | **4** | **5** | **Extremely**  **important 6** |
| **○** | **○** | **○** | **○** | **○** | **○** | **○** |

1. **How important, if at all, would consideration of bone fracture risk be in your decision?**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Not at all**  **important 0** | **1** | **2** | **3** | **4** | **5** | **Extremely**  **important 6** |
| **○** | **○** | **○** | **○** | **○** | **○** | **○** |

1. **How effective, if at all, do you believe omeprazole is at reducing the risk of upper GI bleeding in the patient in this last scenario?**Very effective  
   Moderately effective  
   Slightly effective  
   Not at all effective
2. **Would your recommendation regarding omeprazole change if you knew the following information with certainty: The patient’s risk of upper GI bleeding is 2.7% per year, and use of a PPI can reduce this risk to 1.1% per year. In addition, her risk of hip fracture is 1.0% per year, and omeprazole increases the risk to 1.3% per year.**Yes  
   No Skip to Q. 19
3. **What would your new recommendation be?**Continue the omeprazoleStop the omeprazole  
   Stop the omeprazole and also start an H2-blocker, like ranitidine (Zantac)

**New Page**

1. **How often, if ever, have you used each of the following strategies with your patients because you were concerned about long term PPI harms?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Never** | **Occasionally** | **Sometimes** | **Frequently** |
| Recommend using PPI only on-demand/as needed instead of daily |  |  |  |  |
| Reduce daily PPI dose from a standard dose to half of a standard dose (e.g., omeprazole 10 mg daily) |  |  |  |  |
| Substitute daily PPI with a daily H2-blocker (e.g., Zantac) |  |  |  |  |
| Slowly taper a daily PPI |  |  |  |  |
| Stop daily PPI, and prescribe an H2-blocker (e.g., Zantac) for the first few weeks after discontinuation to prevent rebound symptoms |  |  |  |  |
| Simply stop the PPI |  |  |  |  |

**Page Break**

**The following questions will tell us a little about you and your current practice environment.**

1. **What is your age?**Drop down box
2. **What is your gender?**Male  
   Female  
   Other (Specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)  
   Prefer not to answer
3. **Please indicate your current position (Select one)**In a residency training program Skip to Q. 27  
   In a fellowship training program Skip to Q. 27  
   Attending physician
4. **Which of the following best describes you?**Internal Medicine specialist (i.e., specialize in general internal medicine or hospital medicine)  
   Subspecialist in gastroenterology  
   Subspecialist noninvasive cardiology  
   Subspecialist invasive cardiology  
   Other medical subspecialist
5. **In what year did you finish your residency in internal medicine?   
     
   ------------**
6. **(If Subspecialist) In what year did you finish fellowship?  
     
   \_\_\_\_\_\_\_\_**
7. **Are you currently board certified in your specialty?**Yes  
   No
8. **Do you currently see patients in an outpatient clinic?**Yes  
   No
9. **In a typical week, how many patients do you see in your practice?**None  
   1 - 25  
   26 – 50  
   51 – 75  
   76 – 100  
   .> 100
10. **In a typical week, how many patients who take a PPI do you see in your practice?**None  
    1 - 25  
    26 – 50  
    51 – 75  
    76 – 100  
    .> 100
11. **Roughly what percentage of your workweek do you spend on direct patient care?**< 25%  
    25% - 49%|  
    50% - 74%  
    75% - 100%
12. **How would you best describe your practice setting?**Solo practice  
    Group practice  
    Academic practice (affiliated with a medical school)Veterans Affairs health system  
    Military or other government employed  
    Hospital employed – Integrated health system (e.g., Kaiser Permanente)  
    Hospital employed – Private health system
13. **Are you familiar with any guidelines or professional recommendations on when it is appropriate to use PPIs for the prevention of upper GI bleeding?**Yes  
    No
14. **Does your practice have any decision support systems in place to help you evaluate when it is appropriate to continue or discontinue a patient’s PPI?**Yes **No**
15. **Do you personally take a PPI at least once a week?**Yes  
    NoPrefer not to answer

**Thank you for taking the time to complete this survey**.