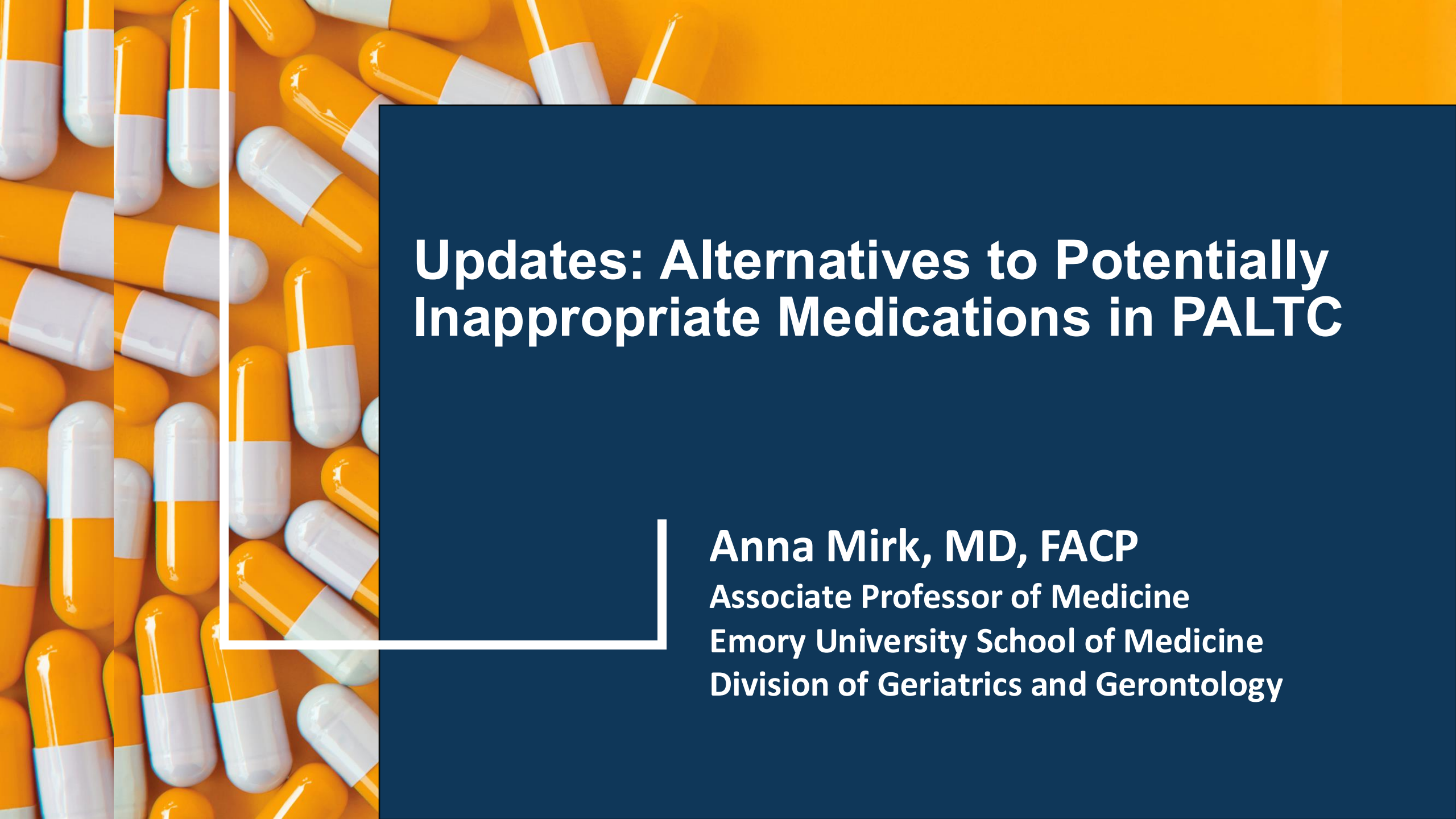




Updates: Alternatives to Potentially Inappropriate Medications in PALTC

Anna Mirk, MD, FACP

Associate Professor of Medicine

Emory University School of Medicine

Division of Geriatrics and Gerontology

Disclosures

- I have no financial relationships to disclose.
- The contents of this presentation represent my own opinions and do not necessarily reflect the opinions of my employers.
- I will be discussing off-label use of the following medications: doxepin, trazadone, mirtazapine.

Acknowledgement

- Safety and efficacy evidence review adapted from Constance Fung, MD and Liz Goldstein, PhD

Objectives

1. Apply **validated tools** and clinical judgment to assess medication appropriateness in older adult patients in PALTC.
2. Implement **deprescribing strategies** that prioritize patient safety, goals of care, and shared decision-making.
3. Integrate **interdisciplinary approaches** to optimize medication management and improve health outcomes in older adults in PALTC.

Quality Prescribing



- Clear indication for every medication
- Balance over and under-prescribing
- Consider goals of care
- Time to horizon of benefit
- Appropriate follow up and monitoring

Deprescribing

The planned and supervised process of *dose reduction* or *stopping* of medication that might be causing harm or no longer providing benefit.

The goal:

To reduce medication burden and harm, while maintaining or improving quality of life.

Deprescribing in LTC: The Evidence

- Prevalence of PIM use in LTC ranges 18%- 82%
- Medication review interventions in LTC consistently reduced
 - Medication burden
 - PIM prevalence



Deprescribing in LTC: The Evidence



Journal of the American Medical Directors
Association

Volume 20, Issue 3, March 2019, Pages 362-372.e11



Original Study

Health Outcomes of Deprescribing Interventions Among Older Residents in Nursing Homes: A Systematic Review and Meta-analysis

Chong-Han Kua BSc(Pharm), MCLinPharm ^a  , Vivienne S.L. Mak PhD ^b, Shaun Wen Huey Lee PhD ^{a c d e}

Evaluating the impact of medication review and deprescribing on prescribing appropriateness and clinical outcomes in older people residing in long-term care facilities: a systematic review and meta-analysis 

[Massimo Carollo](#), [Irene Cristini](#), [Salvatore Crisafulli](#), [Andrea Fontana](#), [Anna Forti](#), [Aurora Lanaro](#), [Francesco Maccarrone](#), [Marta Zerio](#), [Luca Piccoli](#), [Elisabetta Poluzzi](#) ... [Show more](#)

[Author Notes](#)

Age and Ageing, Volume 55, Issue 4, April 2026, afag084,

Effects on falls, hospitalization, mortality?

For your consideration:

Avoiding or deprescribing

- **Sedative hypnotics**
 - sleep
- **Proton pump inhibitors (PPIs)**
 - GERD and associated sx

20 things

Prescribers and Patients Should Question in Post-Acute and Long-Term Care

A Choosing Wisely Guide brought to you by  PALTmed

Don't routinely prescribe or continue **sedative hypnotics** such as Restoril or Ambien, diphenhydramine (Benadryl), benzodiazepines, or Serotonin Modulators (Trazadone) for long-term treatment of sleep disorders in geriatric populations. Consider the use of nonpharmacological interventions (e.g., physical activity, a regular schedule or cognitive behavioral therapy.).

Don't continue hospital-prescribed stress ulcer prophylaxis with **ProtonPump Inhibitor (PPI)** therapy in the absence of an appropriate diagnosis in the post-acute and long-term care (PALTC) population.





AGS

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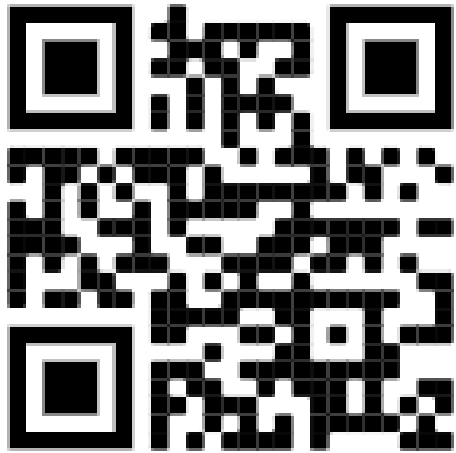
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ALTERNATIVES



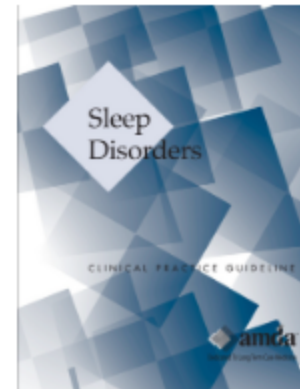
JAGS 73, no. 9 (2025): 2657–2677

Guidelines



MEMBERSHIP ▾ EDUCATION ▾ |

Product Name



Sleep Disorders CPG

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Help safely reduce polypharmacy and optimize medication use in PALTC settings with **Drive to Deprescribe.**



DRIVE TO DEPRESSCRIBE
Optimizing Medication Use in PALTC



Five principles for applying alternatives recommendations in clinical practice

- 1 Stopping a potentially inappropriate medication is not the end goal. The goal is to provide non-pharmacologic and/or pharmacologic management that helps people feel better and maintain health while reducing their risk of medication-associated harms.
- 2 Instead of replacing a potentially inappropriate medication with a “better” one, consider non-pharmacologic strategies where appropriate. Such strategies are often more effective and safer than medications for managing common chronic conditions.
- 3 Understanding the underlying cause(s) of a symptom or condition can help guide therapy.
- 4 Potentially inappropriate medications should often be avoided, but not always. Clinician judgement, consideration of individual circumstances, and shared decision-making should be used when selecting among treatment options.
- 5 Make use of resources and supports to aid deprescribing.



Alternatives to Sedative Hypnotics

TABLE 18

OBRA* for the Use of Pharmacologic Agents to Induce Sleep

- ◆ Use drugs to induce sleep only under the following circumstances:
 - ◆ Evidence exists that other potential causes of insomnia (e.g., depression, pain, noise, light, caffeine) have been ruled out.
 - ◆ The treatment results in maintenance or improvement of the patient's functional status without causing problematic side effects.
- ◆ Use drugs daily for no more than 10 consecutive days unless an attempt at gradual dose reduction is unsuccessful.
- ◆ Administer drug doses equal to or less than those specified in dosing guidelines unless higher doses are necessary to maintain or improve the patient's functional status.
- ◆ Gradual dose reduction should be attempted at least twice within one year for patients on chronic therapy to confirm the need for further treatment.

* Omnibus Budget Reconciliation Act

Adapted from Cefalu¹⁵



SPECIAL ARTICLE |  **Full Access**

American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults

**FDA
Approved**

Benzodiazepines

Z-drugs

**Sedating
Antihistamines**
(diphenhydramine,
doxylamine)

Off - Label

TCA's
(amitriptyline,
nortriptyline)

**Sedating
antipsychotics**
(quetiapine)

Insomnia

Alternatives to Benzos, Z-drugs and 1st generation antihistamines

- Assess for **comorbid conditions** and other factors that effect sleep
 - (OSA, meds, substance use, nocturia)
- **Cognitive Behavioral Therapy (CBT-I)** is 1st line for older adults with chronic insomnia (all adults)
 - Delivered in-person or digital (App, video)
 - Core Components: sleep restriction, stimulus control, cognitive therapy, relaxation, sleep hygiene

Insomnia- Alternatives to Benzos, Z-drugs and 1st generation antihistamines

Medications which may be safer and have evidence for effectiveness in older adults (short term use):

All recommended options are >\$400/month

- **Low-dose doxepin** (up to 6mg)
 - **Dual orexin receptor antagonists**
 - (daridorexant, lemborexant, suvorexant)
 - **Ramelteon**
- **Insufficient evidence** for other medications commonly used in insomnia for older adults (trazadone, mirtazapine, melatonin)
- Guidelines do not suggest these for adults of any age
-

Efficacy in Older Adults

- **Low-dose doxepin (up to 6mg)**
 - RCT doxepin **3mg** v placebo in 65+ w/ 1 insomnia – signif improved PSG-measured sleep maint at 12 weeks (Krystal 2010)
 - RCT – 2 nights of doxepin **3mg and 6 mg** v placebo in 65+ - signif improved PSG-measured sleep maint on 2 consecutive nights (Scharf 2008)
 - **Dual orexin receptor antagonists**
(daridorexant, lemborexant, suvorexant)
 - RCTs show better effect for sleep maintenance than sleep onset
 - RCT suvorexant 10mg for 2 weeks escalated to 20mg for 2 weeks vs placebo in patients with **mild-to-moderate probable AD dementia** and comorbid insomnia significantly improved PSG- measured total sleep time (difference=28 min), (Herring 2020)
 - **Ramelteon 8mg** (FDA approved for **sleep onset** insomnia)
 - RCT v placebo in age 65+ - PSG sleep latency for 2 nights (Roth 2007)
 - RCT 65+ sleep diary-measured sleep latency over 35 nights (unpublished)
-

Safety in Older Adults

- **Low-dose doxepin (up to 6mg)**
 - 12 weeks- no reports of next day sedation, memory impairment or complex sleep behaviors (Krystal 2010)

Dual orexin receptor antagonists

(daridorexant, lemborexant, suvorexant)

- No increased postural instability, falls, memory or driving impairment (lemborexant, Gotfried 2024, Pan 2024)
- Suvorexant assoc increased falls in hospitalized pts in case-control (Ishibashi 2020) , but not in retrospective (Sogawa 2022) or meta-analysis (Pan 2024)

- **Ramelteon**

- RCT (n=33) did not impair night balance, mobility, memory (drug insert)
 - Open label 12 month- no cardiac changes, + reduced free T in older men (Richardson 2009)
-

Research Letter



Trends in Fills, Spending, and Prices of Doxepin for Insomnia

JAMA

Christopher L. Cai, MD¹; Aaron S. Kesselheim, MD, JD, MPH¹; Benjamin N. Rome, MD, MPH¹

Published Online: February 3, 2025

Table. US National Doxepin Spending and Use, 2023

Formulation	Total No. of annual 30-day supplies	Percentage of 30-day supplies	Annual retail spending, \$ (millions) ^a	Percentage of spending	Price (retail spending per 30-day supply), \$ ^a
Low-dose tablets, brand name	3019	0.1	1.6	1.6	526
Low-dose tablets, generic	292 925	11.2	73.8	74.5	252
Liquid ^b	317 585	12.1	2.1	2.1	7
10-mg capsules	2 003 240	76.6	21.6	21.8	11

*Liquid and 10mg doxepin capsules are used off-label for insomnia

Mirtazapine for chronic insomnia in older adults: a randomised double-blind placebo-controlled trial—the MIRAGE study

Patrick V-Q Nguyen^{1 2}, Thien T Dang-Vu^{3 4}, Geneviève Forest⁵, Sophie Desjardins⁶,
Marie-France Forget⁷, Thien T Vu⁸, Quoc D Nguyen^{9 10}, Edouard Kouassi¹¹,
Philippe Desmarais^{2 9}

- Randomized, double-blind, placebo-controlled trial in 60 adults aged 65+ in outpatient setting.
- Mirtazapine 7.5mg vs. placebo x 28 days
- 1° endpoint = change in Insomnia severity Index (ISI) score baseline to day 28.

Special Article |  Full Access

Alternative Treatments to Selected Medications in the 2023 American Geriatrics Society Beers Criteria®

FDA
Approved

Dual orexin
receptor
antagonists
"DORA"

Low-dose doxepin

Ramelteon

\$

Off - Label

Other sedating
antidepressants
(mirtazapine
Trazadone)

Melatonin

**Why is patient taking a BZRA?**

If unsure, find out if history of anxiety, past psychiatrist consult, whether may have been started in hospital for sleep, or for grief reaction.

- Insomnia on its own OR insomnia where underlying comorbidities managed
For those ≥ 65 years of age: taking BZRA regardless of duration (avoid as first line therapy in older people)
For those 18-64 years of age: taking BZRA > 4 weeks

- Other sleeping disorders (e.g. restless legs)
- Unmanaged anxiety, depression, physical or mental condition that may be causing or aggravating insomnia
- Benzodiazepine effective specifically for anxiety
- Alcohol withdrawal

Engage patients (discuss potential risks, benefits, withdrawal plan, symptoms and duration)

Recommend Deprescribing**Taper and then stop BZRA**

(taper slowly in collaboration with patient, for example ~25% every two weeks, and if possible, 12.5% reductions near end and/or planned drug-free days)

- For those ≥ 65 years of age (strong recommendation from systematic review and GRADE approach)
- For those 18-64 years of age (weak recommendation from systematic review and GRADE approach)
- Offer behavioural sleeping advice; consider CBT if available (see reverse)

Continue BZRA

- Minimize use of drugs that worsen insomnia (e.g. caffeine, alcohol etc.)
- Treat underlying condition
- Consider consulting psychologist or psychiatrist or sleep specialist

Monitor every 1-2 weeks for duration of tapering

Expected benefits:

- May improve alertness, cognition, daytime sedation and reduce falls

Withdrawal symptoms:

- Insomnia, anxiety, irritability, sweating, gastrointestinal symptoms (all usually mild and last for days to a few weeks)

Use non-drug approaches to manage insomnia
Use behavioral approaches and/or CBT (see reverse)

If symptoms relapse:

Consider

- Maintaining current BZRA dose for 1-2 weeks, then continue to taper at slow rate

Alternate drugs

- Other medications have been used to manage insomnia. Assessment of their safety and effectiveness is beyond the scope of this algorithm. See BZRA deprescribing guideline for details.



deprescribing.org

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Pottle K, Thompson W, Davies S, Grenier J, Sadowski C, Welch V, Holbrook A, Boyd C, Swenson JR, Ma A, Farrell B. Evidence-based clinical practice guideline for deprescribing benzodiazepine receptor agonists. Can Fam Physician 2018;64:339-51 (Eng), e209-24 (Fr)

This algorithm and accompanying advice support recommendations in the NICE guidance on the use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia, and medicines optimisation. National Institute for Health and Care Excellence, February 2019



Proton Pump Inhibitors (PPI)

AGS Beers Criteria : Recommend avoid use for >8 weeks unless indicated for high-risk patients or failure to respond to less intensive therapy.

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

1st line interventions:

- Lifestyle changes (e.g., stop smoking)
 - Dietary (e.g., avoid trigger foods)
 - Weight management
 - Not eating within 2–3 hours of bedtime
 - Elevating head of the bed
-



When to stop a PPI?

Indication still unknown?

Endoscopy, if ever hospitalized for bleeding ulcer or if taking because of chronic heartburn or dyspepsia

Uncomplicated *H. pylori* treated x 2 weeks and asymptomatic

• Documented history of bleeding GI ulcer

- 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

Recommend Deprescribing

If verbal:

- Heartburn
- Dyspepsia
- Regurgitation
- Epigastric pain

If non-verbal:

- Loss of appetite
- Weight loss
- Agitation

• Symptoms relapse:
• Symptoms persist x 3 – 7 days and
• with normal activity:
• and treat for *H. pylori*
• and return to previous dose

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Farrell B, Pottie K, Thompson W, Boghossian T, Pizzola L, Rashid FJ, et al. Deprescribing proton pump inhibitors. Evidence-based clinical practice guideline. *Can Fam Physician* 2017;63:354-64 (Eng), e253-65 (Fr).



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- 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

Stop PPI

PI
ologist if
bing

Monitor at 4 and 12 weeks

If verbal:

- Heartburn
- Dyspepsia
- Regurgitation
- Epigastric pain

If non-verbal:

- Loss of appetite
- Weight loss
- Agitation

Use non-drug approaches

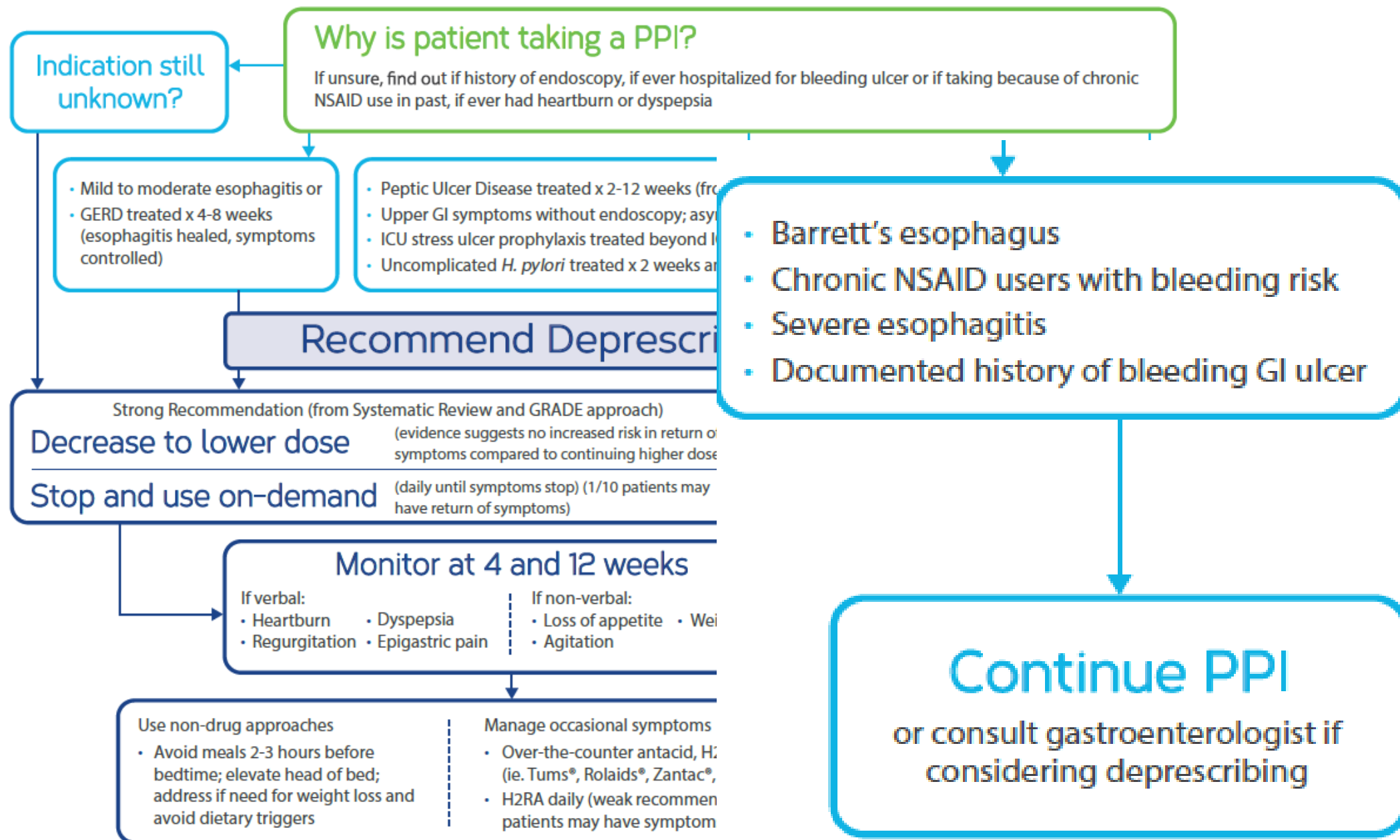
- Avoid meals 2-3 hours before bedtime; elevate head of bed; address if need for weight loss and avoid dietary triggers

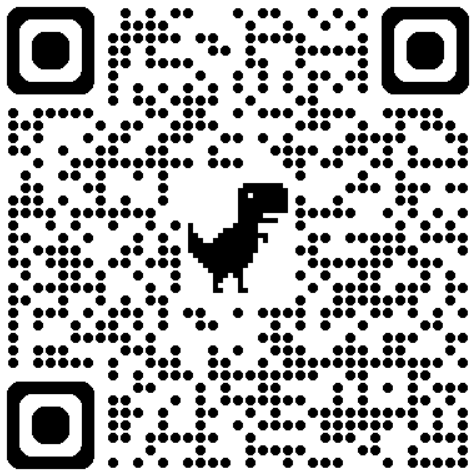
Manage occasional symptoms

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

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Shared Decision-Making in Medication Management A Guide for Long-Term Care



Questions?

Anna.Mirk@va.gov

