INCORPORATING GOALS OF CARE INTO GERIATRIC PRESCRIBING

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UPMC St. Margaret
Objectives

- Explain the application of geriatric prescribing guidelines

- Discuss eliciting goals of care for medication therapies from patients and caregivers

- Examine challenges for providers, patients and caregivers of effective and appropriate prescribing and de-prescribing of medications in older adults as goals of care change
De-Prescribing

• Process of tapering, withdrawing or stopping medications to reduce polypharmacy, adverse drug effects and inappropriate or ineffective medication use by re-evaluating the ongoing reasons for, and effectiveness of medications

• This term may have emotionally-charged meaning and sense of abandonment for some
Goals of Medication Management

- Provide quality care
  - Select medications based on patient and drug related variables
  - Achieve the therapeutic goal
  - Prevent adverse effects
- Conform to standards of practice
- Guided by evidence based when applicable
- Cost effective drug therapy
  - Cost of medication and monitoring
De-prescribing part the continuum

- Not about denying therapeutic treatment
- Patient centered intervention with shared decision making
- Close monitoring of effects
- Considers the risk of individual drugs and the cumulative effect of multiple drugs

Scott et al JAMA Internal Medicine 3-23-15
Who and When

• Who
  • Elderly
  • Frail
  • Cognitively impaired

• When
  • Transitional events (discharges/admissions from hospital or SNF)
  • Significant change in status (new diagnosis or symptom or frailty)
  • Apparent nonadherence
  • Medication list >10
Which medications are easiest to give up?

- poll the audience
Classes deemed high priority for de-prescribing guidelines

<table>
<thead>
<tr>
<th>Rank</th>
<th>Drug</th>
<th>% Felt Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Benzodiazepines</td>
<td>91%</td>
</tr>
<tr>
<td>2.</td>
<td>Atypical antipsychotics</td>
<td>81%</td>
</tr>
<tr>
<td>3.</td>
<td>Statins</td>
<td>47%</td>
</tr>
<tr>
<td>4.</td>
<td>TCA’s</td>
<td>45%</td>
</tr>
<tr>
<td>5.</td>
<td>PPI</td>
<td>43%</td>
</tr>
<tr>
<td>6.</td>
<td>Urinary antichololnergics</td>
<td>36%</td>
</tr>
<tr>
<td>7.</td>
<td>Typical antipsychotics</td>
<td>34%</td>
</tr>
<tr>
<td>8.</td>
<td>Cholinesterase inhibitors</td>
<td>34%</td>
</tr>
<tr>
<td>9.</td>
<td>Opioids</td>
<td>26%</td>
</tr>
<tr>
<td>10.</td>
<td>SSRI’s</td>
<td>19%</td>
</tr>
</tbody>
</table>
Barriers to De-prescribing

• Provider Perceptions
  • Difficulty withdrawing preventative medications
  • Prescribed by medical specialty
  • **Shared decision making

• Patients
  • Beliefs about the appropriateness of the medication
  • Cognitive Dissonance
  • Concern of process for cessation
  • Attitudes of family and physician about deprescribing process
Drug Induced ER visits in the Elderly

- 2007-2009 data used to estimate:
  - Frequency and rates of hospitalizations after ER visits for ADRs in older patients (≥ 65 years old)
- Nearly half were in adults ≥ 80 years old
- Nearly 2/3 were due to unintentional overdose
- Four medications/classes were implicated
  - Warfarin
  - Insulin
  - Oral Antiplatelet
  - Oral hypoglycemics

Holmes Model
Holmes Model

- Can act as useful framework for deprescribing in patients with reduced life expectancy
- In this model, there are four factors to consider
  - Goals of care
  - Prognosis
  - Treatment target
    - Primary prevention medications are good candidates for deprescribing
  - Time-until-benefit
    - Amount of time medication requires to gain a beneficial result
    - In most cases, as prognosis decreases, the number needed to treat increases
The Process of De-Prescribing

1. Ascertain all drugs the patient is currently taking and the reasons for each one
2. Consider overall risk of the drug-induced harm in individual patients in determining the required intensity of deprescribing intervention
3. Assess each drug for its eligibility to be discontinued
4. Prioritize drugs for discontinuation
5. Implement and monitor drug discontinuation regimen
Step 1-
Ascertain all drugs the patient is currently taking and the reasons for each one

- **Medication reconciliation**
  - Ask patient and/or caregivers to gather all medications and medication delivery aids
    - Samples
    - Vitamins/suppliments
    - OTC medications
    - Inhaled medications
    - Injectable medications
    - Topical medications
  - Ask patients about any regularly prescribed drugs that are not being taken and why
    - ? Too expensive
    - ? Too many side effects
Step 1- Why? Tell Me Why?

- For each medication consider the following……
  - What is the indication for this medication for THIS patient?
  - Was the diagnosis substantiated (should it be)?
  - Was the medication prescribed to counter the side effects of another medication?
  - Has the drug been continued due to clinical inertia?
  - Is the patient actually TAKING the medication?
  - Is the patient taking the medication as prescribed on the bottle?
Step 2-
Consider overall risk of the drug-induced harm in individual patients in determining the required intensity of deprescribing intervention

- **Ascertain and assess risk according to:**
  - Drug factors (number of drugs—single most important predictor)
    - >7 medications 82% risk of adverse drug event
  - Use of “high-risk” medications
    - Opioids
    - Benzodiazepines
    - Psychotropic drugs
    - NSAIDs
    - Anticoagulants
    - Digoxin
    - Cardiovascular drugs
    - Hypoglycemic agents
    - Anticholinergic agents
  - Patient Factors
    - Age >80 years old
    - Cognitive impaired
    - Multiple comorbidities
    - Substance abuse
    - Multiple prescribers
    - Past or current nonadherence
Step 3 - Assess each drug for its eligibility to be discontinued

- No valid indication (drug use without indication)
- Part of a prescribing cascade (drug-induce adverse effect)
- Actual or potential harm of drug > potential benefit (inappropriate drug therapy)
- Disease and/or symptom control is ineffective or symptoms have completely resolved
- Preventive drug is unlikely to confer any patient important benefit over the patient’s remaining life-span
- Drugs are imposing unacceptable treatment burden (drug-induced adverse effects)
Drugs are rarely indicated if they do not confer a patient important outcome.
Discontinuing medications based on……

- Life-expectancy
- Risk/benefit rations
- Patient/family goals of therapy
- Intent of treatment
Step 4-
Prioritize medications for discontinuation

- Put medications that a patient is on in order of priority
- Start discontinuing medications from the bottom up
Step 5-
Implement and monitor drug discontinuation regimen

- Cholesterol lowering drugs
- Diuretics in patients with decreased intake
- Bisphosphonates for osteoporosis
- Warfarin in patients with a.fib
- Antihypertensives
- Oral hypoglycemic
- Antipsychotics
Disease/symptom Control Drugs Vs. Preventive Drugs

- **Preventive Drugs**
  - Those that prevent future morbid events
    - Statins, warfarin, bisphosphonates
      - Ceasing use of statin for primary prevention after taking for years results in no increase in cardiovascular events 8 yrs after discontinuation
      - Anyone over the age of 80 should have statin stopped
  - Supplements
    - Calcium, MVI, folic acid, iron
  - Bisphosphonates
    - d/c’ing alendronate after 5 years of treatment resulted in no increase in osteoporotic fractures in the ensuing 5 years

- **Symptom/Disease Control**
  - Control active disease and symptoms and maintain QOL
    - Stopping these would most likely cause symptoms, loss of function, or worsening of disease
    - Should they ever be stopped?
    - When?
    - ?Analgesics, levothyroxine, anti-anginals/heart failure
Bisphosphonate in osteoporosis

Intensity of glucose control

Glyburide and A1C of 6.5%

PPI that is no longer indicated

Full dose anticoagulation in AF and falls

Cholinesterase inhibitor in severe dementia in SNF

Higher dose sedative-hypnotic and falls

Beers Criteria
STOPP/START Criteria
ENDOCRINE – GLYCEMIC CONTROL
Diabetes in Older Adults

- >25% of patients 65 years and older have diabetes\(^1\)

- Older individuals with diabetes vs without diabetes\(^2\)
  - ↑ rates of premature death, functional disability, and coexisting illnesses (hypertension, coronary heart disease, and stroke)

- Severe hypoglycemia associated with higher risk of stroke, MI, acute cardiac failure, and ventricular arrhythmias\(^3, 4, 5\)

- Difficulty with symptom recognition in older adults\(^3\)

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\(^2\) Diabetes Care 2017;40(Suppl. 1):S1–S2

\(^3\) BMJ 2013;347:f4533


# Impact of Glycemic Control in T2DM

<table>
<thead>
<tr>
<th>Study</th>
<th>Age</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>UKPDS 33 (1998)</td>
<td>53 years</td>
<td>Intensive (FG &lt;108mg/dL) that reduces A1C by 11% over 10 years (median 7.0%) is associated with a 25% reduction in microvascular complications. No effect on macrovascular disease or mortality.</td>
</tr>
<tr>
<td>UKPDS 34 (1998)</td>
<td>53 years</td>
<td>Among overweight patients with T2DM, metformin reduces the rate of DM-related complications and all-cause mortality when compared to diet alone or other early generation antiglycemic agents.</td>
</tr>
<tr>
<td>ACCORD (2008)</td>
<td>62.2 years</td>
<td>Intensive glycemic control (A1C 6%) increased mortality compared to standard control (A1C 7-7.9%)</td>
</tr>
<tr>
<td>ADVANCE (2008)</td>
<td>66 years</td>
<td>Intensive glycemic control (A1C ≤ 6.5) improves microvascular outcomes but has no impact on macrovascular outcomes.</td>
</tr>
<tr>
<td>VADT (2009)</td>
<td>60 years</td>
<td>Intensive glycemic control has minimal impact on both macrovascular and microvascular endpoints.</td>
</tr>
</tbody>
</table>

Mortality in Individuals Aged 80 and Older with Type 2 Diabetes Mellitus in Relation to Glycosylated Hemoglobin, Blood Pressure, and Total Cholesterol

Shota Hamada, DrPH, * and Martin C. Gulliford, MA *†

UK Clinical Practice Research Datalink (UK-CPRD)
Population-based cohort study
- 80 years w/T2DM
- Diagnosis: first A1c of ≥ 6.5% or first anti-diabetic prescription

Table 3. Associations Between Glycosylated Hemoglobin (HbA1c), Blood Pressure, and Total Cholesterol and All-Cause Mortality (N = 25,966)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Deaths, n/N</th>
<th>%</th>
<th>Mortality (1,000 Person-Years)</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hazard Ratio (95% Confidence Interval)</td>
<td>P-Value</td>
</tr>
<tr>
<td>HbA1c. % (mmol/mol)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;6.0 (&lt;42)</td>
<td>301/1,387</td>
<td>21.7</td>
<td>134.9</td>
<td>1.21 (1.03–1.42) .02</td>
<td>1.04 (0.88–1.23) .67</td>
</tr>
<tr>
<td>6.0–6.4 (42–47)</td>
<td>506/2,976</td>
<td>17.0</td>
<td>102.1</td>
<td>0.92 (0.80–1.05) .21</td>
<td>0.91 (0.79–1.05) .19</td>
</tr>
<tr>
<td>6.5–6.9 (48–52)</td>
<td>1,081/7,463</td>
<td>14.5</td>
<td>85.6</td>
<td>0.77 (0.68–0.87) &lt;.001</td>
<td>0.84 (0.74–0.96) .009</td>
</tr>
<tr>
<td>7.0–7.4 (53–57)</td>
<td>648/4,700</td>
<td>13.8</td>
<td>80.9</td>
<td>0.72 (0.63–0.83) &lt;.001</td>
<td>0.80 (0.70–0.91) .001</td>
</tr>
<tr>
<td>7.5–7.9 (58–63)</td>
<td>453/2,777</td>
<td>16.3</td>
<td>98.6</td>
<td>0.88 (0.77–1.02) .09</td>
<td>0.90 (0.79–1.04) .15</td>
</tr>
<tr>
<td>8.0–8.4 (64–68)</td>
<td>324/1,780</td>
<td>18.2</td>
<td>111.5</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>≥8.5 (≥69)</td>
<td>641/3,006</td>
<td>21.3</td>
<td>133.1</td>
<td>1.20 (1.05–1.37) .009</td>
<td>1.04 (0.91–1.19) .55</td>
</tr>
<tr>
<td>Missing</td>
<td>536/1,877</td>
<td>28.6</td>
<td>195.9</td>
<td>1.76 (1.53–2.02) &lt;.001</td>
<td>1.01 (0.86–1.19) .88</td>
</tr>
</tbody>
</table>
Glycemic Control in Older Adults

- A1C Goal
- Functionality
- Frailty
- Current Control
- Setting
ADA Guideline

- Recommendations for Older Adults:
  - Functionally and cognitively intact with significant life expectancy ➔ use goals for younger patients
  - Less functional, cognitively impaired older adults ➔ relaxed goals (avoid hyper-/hypoglycemia symptoms and complications)
ADA Framework for Glycemic Treatment Goals in Older Adults with Diabetes

<table>
<thead>
<tr>
<th>Patient characteristics/health status</th>
<th>Rationale</th>
<th>Reasonable A1C goal†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy (few coexisting chronic illnesses, intact cognitive and functional status)</td>
<td>Longer remaining life expectancy</td>
<td>&lt;7.5% (58 mmol/mol)</td>
</tr>
<tr>
<td>Complex/intermediate (multiple coexisting chronic illnesses* or 2+ instrumental ADL impairments or mild-to-moderate cognitive impairment)</td>
<td>Intermediate remaining life expectancy, high treatment burden, hypoglycemia vulnerability, fall risk</td>
<td>&lt;8.0% (64 mmol/mol)</td>
</tr>
<tr>
<td>Very complex/poor health (LTC or end-stage chronic illnesses** or moderate-to-severe cognitive impairment or 2+ ADL dependencies)</td>
<td>Limited remaining life expectancy makes benefit uncertain</td>
<td>&lt;8.5%† (69 mmol/mol)</td>
</tr>
</tbody>
</table>
• “Less-stringent A1c goals (such as < 8%) may be appropriate for patients with a:
  
  – history of severe hypoglycemia,
  – limited life expectancy,
  – advanced microvascular or macrovascular complications,
  – extensive comorbid conditions,
  – and those with longstanding diabetes in whom the general goal is difficult to attain despite diabetes self-management education, appropriate glucose monitoring, and effective doses of multiple glucose-lowering agents including insulin. (B)”
Individualized Glycemic Management

Approach to the Management of Hyperglycemia

<table>
<thead>
<tr>
<th>Patient / Disease Features</th>
<th>More stringent</th>
<th>7%</th>
<th>Less stringent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risks potentially associated with hypoglycemia and other drug adverse effects</td>
<td>low</td>
<td>A1C 7%</td>
<td>high</td>
</tr>
<tr>
<td>Disease duration</td>
<td>newly diagnosed</td>
<td>long-standing</td>
<td></td>
</tr>
<tr>
<td>Life expectancy</td>
<td>long</td>
<td>short</td>
<td></td>
</tr>
<tr>
<td>Relevant comorbidities</td>
<td>absent</td>
<td>few/mild</td>
<td>severe</td>
</tr>
<tr>
<td>Established vascular complications</td>
<td>absent</td>
<td>few/mild</td>
<td>severe</td>
</tr>
<tr>
<td>Patient attitude and expected treatment efforts</td>
<td>highly motivated, adherent, excellent self-care capabilities</td>
<td>less motivated, nonadherent, poor self-care capabilities</td>
<td></td>
</tr>
<tr>
<td>Resources and support system</td>
<td>readily available</td>
<td>limited</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6.1—Depicted are patient and disease factors used to determine optimal A1C targets. Characteristics and predicaments toward the left justify more stringent efforts to lower A1C; those toward the right suggest less stringent efforts. Adapted with permission from Inzucchi et al. (58).
Target HgbA1c should be individualized:

≤ 7% ➞ relatively healthy adults with good functional status

≤ 8% ➞ frail older adults and others in whom risks of intensive control outweigh benefits

• Measure A1c at least every 6 months for those not yet at goal
  – May be appropriate to check every 12 months for those with stable A1c for several years
Lack of Evidence to Guide Deprescribing of Antihyperglycemics: A Systematic Review

Cody D. Black · Wade Thompson · Vivian Welch · Lisa McCarthy · Carlos Rojas-Fernandez · Heather Lochnan · Salima Shamji · Ross Upshur · Barbara Farrell

  - Educational intervention ↓ glyburide use while not compromising glucose control

  - Cessation of antihyperglycemics and insulin in older nursing home patients

No change in HbA1C or hypoglycemia rate. Significant study biases.

Adequately powered high-quality studies of deprescribing antihyperglycemics with patient-important outcomes

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How do we get there?
<table>
<thead>
<tr>
<th>Drug Therapy Class</th>
<th>Considerations in Older Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>• Contraindicated in advanced renal insufficiency or HF</td>
</tr>
<tr>
<td></td>
<td>• Hold prior to contrast</td>
</tr>
<tr>
<td>Insulin Therapy</td>
<td>• Injectable</td>
</tr>
<tr>
<td></td>
<td>• Titration</td>
</tr>
<tr>
<td></td>
<td>• Consider once daily long acting injection</td>
</tr>
<tr>
<td>Insulin Secretagogues</td>
<td>• Hypoglycemia (esp glyburide; glipizide preferred)</td>
</tr>
<tr>
<td>(glipizide, glimepride, glyburide)</td>
<td></td>
</tr>
<tr>
<td>Thiazolidinediones</td>
<td>• Infrequently used; caution in CHF, hx falls/ fx</td>
</tr>
<tr>
<td>(rosi, pioglitazone)</td>
<td></td>
</tr>
<tr>
<td>Incretin-Based Therapies</td>
<td>• DPP4: $$$</td>
</tr>
<tr>
<td>(DPP4 and GLP1)</td>
<td>• GLP1: Injectable, N/V/D, weight loss</td>
</tr>
<tr>
<td>(sita-, saxa-, vilda-, lina-, aloglipitin)</td>
<td></td>
</tr>
<tr>
<td>(lira-, albi-, dulaglutide, exenatide)</td>
<td></td>
</tr>
<tr>
<td>Sodium-Glucose Cotransporter 2</td>
<td>• Long-term data is limited</td>
</tr>
<tr>
<td>Inhibitors (SGLT2)</td>
<td></td>
</tr>
<tr>
<td>(dap-, can-, empagliflozin)</td>
<td></td>
</tr>
</tbody>
</table>
Setting and Resources

- Living situation: home, personal care, nursing facility

**Home**
Adult children/caretaker available to assist?

**Personal Care**
Does staff administer meds? Documentation/notification of hypoglycemia.

**Nursing facility**
Staff training, recognition of hypoglycemia, population management and resources, meal timing, less frequent provider evaluation, ensure orders are in place for notification of hypoglycemia
Does your elderly (>65 years of age) patient with type 2 diabetes meet one or more of the following criteria:

- At risk of hypoglycemia (e.g. due to advancing age, tight glycemic control, multiple comorbidities, drug interactions, hypoglycemia history or unawareness, impaired renal function, or on sulfonylurea or insulin)
- Experiencing, or at risk of, adverse effects from antihyperglycemic
- Uncertainty of clinical benefit (due to: frailty, dementia or limited life-expectancy)

Yes

- Set individualized A1C and blood glucose (BG) targets (otherwise healthy with 10+ years life expectancy, A1C < 7% appropriate; considering advancing age, frailty, comorbidities and time-to-benefit, A1C < 8.5% and BG < 12mmol/L may be acceptable; at end-of-life, BG < 15mmol/L may be acceptable) (good practice recommendation)
- Address potential contributors to hypoglycemia (e.g. not eating, drug interactions such as trimethoprim/sulfamethoxazole and sulfonylurea, recent cessation of drugs causing hyperglycemia – see reverse)

No

Continue Antihyperglycemic(s)

Still at risk?

No

Recommend Deprescribing

- Reduce dose(s) or stop agent(s)
  - most likely to contribute to hypoglycemia (e.g. sulfonylurea, insulin; strong recommendation from systematic review and GRADE approach) or other adverse effects (good practice recommendation)
- Switch to an agent
  - with lower risk of hypoglycemia (e.g. switch from glyburide to glagliclizide or non-sulfonylurea; change NPH or mixed insulin to detemir or glargine insulin to reduce nocturnal hypoglycemia; strong recommendation from systematic review and GRADE approach)
- Reduce doses
  - of renally eliminated antihyperglycemics (e.g. metformin, sitagliptin; good practice recommendation) – See guideline for recommended dosing

Yes

Monitor daily for 1-2 weeks after each change (TZD – up to 12 weeks):

- For signs of hypoglycemia (excessive thirst or urination, fatigue)
- For signs of hypoglycemia and/or resolution of adverse effects related to antihyperglycemic(s)

Increase frequency of blood glucose monitoring if needed
A1C changes may not be seen for several months

If hypoglycemia continues and/or adverse effects do not resolve:
- Reduce dose further or try another deprescribing strategy

If symptomatic hyperglycemia or blood glucose exceeds individual target:
- Return to previous dose or consider alternate drug with lower risk of hypoglycemia

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Contact deprescribing@bruyere.org or visit deprescribing.org for more information.
PSYCHIATRIC – ACETYLCHOLINESTERASE INHIBITORS & NMDRAS
Cognitive Impairment and Functional Status

- Mild
  - Cognitive Symptoms
- Moderate
  - Diagnosis
  - Loss of Functional Independence
  - Behavioral Problems
  - Nursing Home Placement
- Severe
  - Death

MMSE: Mini-Mental State Examination

http://www2f.biglobe.ne.jp/~boke/improvingad.files/image007.jpg
<table>
<thead>
<tr>
<th></th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Memory and Thinking</strong></td>
<td>• Difficulty with short-term memory</td>
<td>• Difficulty with short and long term memory</td>
<td>• Severely impaired memory for recent and past events</td>
</tr>
<tr>
<td></td>
<td>• Poor Concentration</td>
<td>• Poor decision making</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poor decision-making</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>• Word finding difficulty</td>
<td>• Loss of ability to make needs known</td>
<td>• Unable to carry on a meaningful conversation</td>
</tr>
<tr>
<td><strong>Mood</strong></td>
<td>• Depressed or socially withdrawn</td>
<td>• Easily frustrated or upset</td>
<td>• Withdrawn</td>
</tr>
<tr>
<td></td>
<td>• Lack emotion</td>
<td>• Lack emotion</td>
<td>• Difficult to engage</td>
</tr>
<tr>
<td><strong>Function</strong></td>
<td>• Difficulty organizing or managing</td>
<td>• Assistance with ADLs (selecting and sequencing</td>
<td>• Difficulty interacting/ responding to surroundings</td>
</tr>
<tr>
<td></td>
<td>household affairs</td>
<td>clothing</td>
<td>• Total ADL support</td>
</tr>
<tr>
<td></td>
<td>• Confusion while driving</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Slight improvement in cognitive function**
- Acetylcholinesterase inhibitors improved ADAS-Cog scores by 1.4 points at 6 months and 3.9 points in 1 year
- Acetylcholinesterase inhibitors can be considered equally efficacious
  
  *Cochrane Database Syst Rev 2006;(1):CD005593*

**Preservation of activities of daily living (ADL) function**
Donepezil delayed functional decline in patients with mild to moderate AD by 5-months
  

**Delay placement in nursing home**
Treatment with acetylcholinesterase inhibitor for at least 12 months resulted in decreased risk of nursing home placement over 2 and 3 years (1% vs. 16%, *p* = .001; and 11% vs. 50%, *p* = .001, respectively)
  

**Reduce caregiver burden**
Donepezil treatment significantly reduced caregiver time spent assisting patients with ADLs by approximately 50 minutes per day (*p* < .005)
  
  *Rivastigmine treatment estimated to reduce caregiver time assisting ADLs up to 690 hours over 2 years*
  
  *Int Psychogeriatr. 2003 15:385–398*

**Reduce problem behaviors**
Several short-term studies show that there may be some benefit with donepezil, galantamine, and rivastigmine but not memantine
  
  *Prim Care Companion J Clin Psychiatry. 2007;9(2):113-21*

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**Measure of Improvement**

Courtesy of Gina Ayers, PharmD
Cholinesterase Inhibitors

• What they do ➔ slow the progression of AD
  • May have some “improvement” in cognition

• What they do NOT do ➔ cure, reverse, or prevent AD
Managing Expectations

• Family members may expect a “reversal” of symptoms, or that the patient will “get better”

• Education and clarifying expectations are very important to the treatment of AD

• “No change” is exactly the goal of therapy!
Stopping Therapy

- If taking agent for > 1 month, slowly taper medication off
  - Abrupt discontinuation may cause acute worsening of symptoms

- Unlikely to regain any benefits of therapy if treatment is interrupted or stopped long-term
Tapering Schedules

- Donepezil may require longer taper given long half-life and efficacy of 5 mg dose

- Taper cholinesterase inhibitors over 1 to 2 months

- Taper memantine in reverse of titration schedule (5 mg/week decrease)
Point of Care Tools

- www.medstopper.com

- www.deprescribing.org
Your patient is an 87 year old frail older woman, with severe dementia, residing in a long-term nursing facility. PMH includes HTN, Stage 3 CKD, DM type 2, and Parkinson's disease. Which of the following would be the best HbA1C goal for this patient?

A. < 6%
B. < 6.5%
C. < 7%
D. < 7.5%
E. < 8.5%

Answer: E, < 8.5%
Review Question #2

Which one of the following statements about the pharmacologic treatment for cognitive impairment are FALSE:

A. Cholinesterase inhibitors improve mortality in patients with dementia
B. Donepezil delayed functional decline in patients with mild to moderate AD by 5-months
C. Donepezil treatment significantly reduced caregiver time spent assisting patients with ADLs
D. Acetylcholinesterase inhibitors can be considered equally efficacious

**Answer:** A, Cholinesterase inhibitors improve mortality in patients with dementia
CASES
Case Studies

- Larry G.

- Ethel S.
Larry G. 73 y.o. male
BP 78/32 RR 18 HR 79 BMI 16.7
recently hospitalized for another GI bleed (4th in the last 3 months) Hgb 6.3 PLT 93 BUN 75 Cr 1.76 (baseline 1.30), HgBA1c 6.4
pt alert and oriented, Lungs CTA, Heart RRR, +3 pitting pedal edema, Abd tender to palpation

Past Medical History

- IgG lambda MM on Velcade treatment currently on hold
- HTN
- dyslipidemia
- CAD s/p stent placement
- chronic CHF mixed (EF 59% 12/2016)
- gout
- anemia 2/2 gastric antrum vascular ectasias s/p cauterizations with multiple hospitalizations in the last 3months
- Pancreatic endocrine neoplasm s/p distal pancreatectomy/splenectomy-- March 2012
- Basal cell carcinoma s/p excision
- Thyroid nodules
- DM type 2

Home medications

- acetaminophen (acetaminophen 325 mg oral tablet) 650 mg Every 6 Hours PRN By Mouth
- acyclovir (Zovirax 400 mg oral tablet) 400 mg ONCE A DAY By Mouth
- amiodarone (amiodarone 200 mg oral tablet) 400 mg 2 TIMES A DAY By Mouth
- amoxicillin-clavulanate (Augmentin 875 mg-125 mg oral tablet) 1 tab(s) Every 12 Hours By Mouth
- bortezomib (Velcade) 1.3 mg/m2 subQ
- calcium-vitamin D (Calcium 600+D) 1 tab(s) 2 TIMES A DAY By Mouth
- cholecalciferol (Vitamin D3) 5,000 IntLUnit ONCE A DAY By Mouth
- dexamethasone (dexamethasone 4 mg oral tablet) 4 mg By Mouth
- dextromethorphan-guaifenesin (Robitussin-DM 10 mg-100 mg/5 ml syrup) Every 4 Hours PRN By Mouth
- ferrous sulfate 325 mg ONCE A DAY By Mouth
- pantoprazole (pantoprazole 40 mg oral delayed release tablet) 40 mg 2 TIMES A DAY By Mouth
- potassium chloride (potassium chloride 20 mEq oral tablet, extended release) 20 mEq ONCE By Mouth
- sulfamethoxazole-trimethoprim 800-260mg EVERY WEEK
- zolpidem (Ambien) 5 mg AT BEDTIME PRN By Mouth
- Lisinopril 20mg by mouth daily
- Lasix 40mg by mouth daily
- Metformin 500mg BID
• Things to consider  pt does not carry a history of a.fib but is on amiodarone
• Further investigation reveals that he actually should be on allopurinol not amiodarone
• What is goal for diabetes management- Glucophage may not be the best choice in this patient with Multiple Myeloma and AKI. Is insulin really a good option? What is the HGBA1c goal?
• Need to establish goals of care regarding Velcade, dexamethasone, calcium and vitamin d supplements and iron.
• Should Ambien be used in this patient?
Ethel S.

90 y.o. female resides in SNF over the last 4 months patient has become bedbound with FAST of 7E (unable to smile). Patient has been hand feed and medications require being crushed. At times pt can call out and be resistant to care.

Past Medical History

- Alzheimer’s Dementia
- Ischemic Cardiomyopathy
- A.fib
- Congestive heart failure
- Previous CVA
- Anorexia

Current Medications

- Lipitor 40mg QD
- Toprol XL 25mg QD
- Namenda 10mg BID
- Aricept 10mg QD
- Coumadin 2mg MWF and 4mg TTSS
- Amiodarone 200mg QD
- ASA 81 mg QD
- Megace 400mg QD
INCORPORATING GOALS OF CARE INTO GERIATRIC PRESCRIBING

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