Updates in Geriatrics Medicine

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Disclosures

- I have no industry/pharmaceutical support
- I have no conflicts of interest
- I will be discussing off-label use of medications (antipsychotic use in dementia with agitation)
Overview

- Theme: Medication Management
- Beers Update 2012
- ABIM Choosing Wisely – Geriatrics
  - Tube feeding
  - Antipsychotics
  - HgbA1c targets
  - Sedative hypnotics
  - Asymptomatic bacteriuria

Theme: Appropriate Medication Management
**Medication Usage**

- 90% take medication on a daily basis
  - 46% take five or more
  - 54% have more than one doctor prescribing
  - 35% use more than one pharmacy
- Account for 14% of the population, but over half of all prescription drug use
- For seniors ≥ 3 chronic conditions
  - 73% take five or more medications regularly
  - 52% do not take all their drugs as prescribed


**Prevalence of inappropriate medication management**

- 44-60% of outpatients taking meds considered suboptimal
- 18-34% on 1+ ineffective by indication
- 7-16% with therapeutic duplications
- 64% underuse
- Underuse and unnecessary meds occur simultaneously in 42%

ADEs are Common

- Survey of outpatient practices - 25% with ADE
- 10-17% of hospital admits are due to ADEs
- The FDA AERS has seen an increase of 11% per year in the rate of ADE over last 10 yrs
  - 20.1% involved older adults (65+) despite being only 12% of the population – highest rate of all age groups
- Greatest predictor of ADE is # of meds


Updated Beers Criteria 2012
JAGS 2012; 60(4):616-631.
Beers Criteria 2012

- For use in all settings of care, ages > 65
- Goal: improve the care of older adults by reducing inappropriate med use
- Interprofessional panel plus reps from CMS, multiple medical specialties, nursing, pharmacy, research, various care settings

Background Rationale

- Strong link between Beers meds and poor outcomes
  - ADEs, hospitalization, mortality, delirium, falls, fractures, GI bleed, geriatric syndromes
- Use of Beers meds identify other aspects of inappropriate use patterns
  - Ann Pharmacother 2011;45:1363-1370
  - Medication Appropriateness Index tool

http://www.pogoe.org/sites/default/files/Polypharmacy%20Card.pdf
Beers 2012

- Categories (53 meds or classes)
  - Medications to avoid regardless of disease or condition
  - Medications considered inappropriate with certain diseases or syndromes
  - Medications that should be used with caution

Quality and Strength of Recommendations

Table 1. Designations of Quality and Strength of Evidence

<table>
<thead>
<tr>
<th>Designation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of evidence</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes; ≥2 consistent, higher-quality randomized controlled trials or multiple, consistent observational studies with no significant methodological flaws showing large effects</td>
</tr>
<tr>
<td>Moderate</td>
<td>Evidence is sufficient to determine effects on health outcomes, but the number, quality, size, or consistency of included studies; generalizability to routine practice; or indirect nature of the evidence on health outcomes (≥1 higher-quality trial with &gt;100 participants; ≥2 higher-quality trials with some inconsistency; ≥2 consistent, lower-quality trials; or multiple, consistent observational studies with no significant methodological flaws showing at least moderate effects) limits the strength of the evidence</td>
</tr>
<tr>
<td>Low</td>
<td>Evidence is insufficient to assess effects on health outcomes because of limited number or power of studies, large and unexplained inconsistency between higher-quality studies, important flaws in study design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes</td>
</tr>
<tr>
<td>Strength of recommendation</td>
<td></td>
</tr>
<tr>
<td>Strong</td>
<td>Benefits clearly outweigh risks and burden OR risks and burden clearly outweigh benefits</td>
</tr>
<tr>
<td>Weak</td>
<td>Benefits finely balanced with risks and burden</td>
</tr>
<tr>
<td>Insufficient</td>
<td>Insufficient evidence to determine net benefits or risks</td>
</tr>
</tbody>
</table>
Notable New “To Avoid”

- **Megestrol**
  - Minimal effect on appetite or weight gain
  - Increases thromboembolic events and death
  - Quality of evidence = moderate
  - Strength of recommendation = strong

- **Glyburide**
  - Greater risk of prolonged hypoglycemia
  - Quality of evidence = high
  - Strength of recommendation = strong

Notable New “To Avoid”

- **Spironolactone > 25mg/d**
  - The risk of hyperkalemia is higher in older adults
  - Quality of evidence = moderate
  - Strength of evidence = strong

- **Sliding scale insulin**
  - Higher hypoglycemia without improvement in hyperglycemia management regardless of setting
  - Quality of evidence = moderate
  - Strength of recommendation = strong
**Notable New “to avoid with certain diseases/syndromes”**

- **Pioglitazone, rosiglitazone in heart failure**
  - Promotes fluid retention
  - Quality of evidence = high
  - Strength of evidence = strong

- **AChE inhibitors with h/o syncope**
  - Increases risk of orthostasis and bradycardia
  - Quality of evidence = moderate
  - Strength of recommendation = strong

**Notable New “to avoid with certain diseases/syndromes”**

- **SSRIs with h/o falls or fractures**
  - Produces ataxia, impaired psychomotor function, syncope, and additional falls
  - Quality of evidence = high
  - Strength of recommendation = strong

- **H1 and H2 blockers in delirium or dementia**
  - High risk of inducing or worsening delirium
  - Quality of evidence = moderate/high
  - Strength of recommendation = strong
Goal is to decrease the overuse of medical tests and procedures in those unlikely to benefit

http://www.choosingwisely.org/

Choosing Wisely
Geriatrics Recommendation 1

“Don’t recommend percutaneous feeding tubes in patients with advanced dementia; instead offer assisted oral feeding”

- Hand feeding is at least as good for the outcomes of death, aspiration pneumonia, functional status, and patient comfort
- TF causes agitation, increased use of chemical/physical restraints, worsening pressure ulcers
Choosing Wisely
Geriatrics Recommendation 2

- Don’t use antipsychotics as first choice to treat behavioral and psychological symptoms of dementia
  - Aggressive behavior and resistance to care is common in dementia
  - Use of antipsychotics provides limited benefit but can cause serious harm including stroke and premature death

Antipsychotic effectiveness

- Modest evidence in few RCTs
  - Risperidone for psychosis in dementia
  - Aripiprazole and risperidone for neuropsychiatric symptoms without psychosis in NH patients with severe dementia
  - Haldol has same efficacy as atypicals
  - Quetiapine may be less effective (4 RCTs)

Antipsychotic effectiveness

AHRQ Summary of Efficacy

<table>
<thead>
<tr>
<th></th>
<th>Aripiprazole</th>
<th>Olanzapine</th>
<th>Quetiapine</th>
<th>Risperidone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dementia with Psychosis</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>++</td>
</tr>
<tr>
<td>Dementia with Agitation</td>
<td>+</td>
<td>++</td>
<td>+/-</td>
<td>++</td>
</tr>
</tbody>
</table>

Legend:  
++ = Moderate or high evidence  
+ = Low or very low evidence  
+/- = Mixed results


Nonpharmacologic Treatment

Look for/address causes

<table>
<thead>
<tr>
<th>Common Problems</th>
<th>Interpretations/solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wandering</td>
<td>Boredom? Increase exercise/activities</td>
</tr>
<tr>
<td>Calling out</td>
<td>Loneliness? Visitors, pets</td>
</tr>
<tr>
<td>Repetitive questioning</td>
<td>Forgetfulness? Expect to repeat self</td>
</tr>
<tr>
<td>Toileting issues</td>
<td>Timed voiding</td>
</tr>
<tr>
<td>Agitated, upset, restless</td>
<td>Overstimulation, unrealistic expectations, delirium? Provide structure, calm, pets</td>
</tr>
<tr>
<td>Awake at night</td>
<td>Establish routine, sleep hygiene, hire help</td>
</tr>
<tr>
<td>Argumentativeness</td>
<td>Agree, avoid debates, calm environment</td>
</tr>
<tr>
<td>Verbal aggression</td>
<td>Fear of pain, routine needs like thirst/hunger, desire for privacy, delirium, depression?</td>
</tr>
</tbody>
</table>

Identify antecedents and avoid, distract.
Choosing Wisely Geriatrics Recommendation 2

- Nonpharmacologic treatment
  - Education of family, caregivers, staff
  - IA-ADAPT (Improving antipsychotic appropriateness in dementia patients)
    www.healthcare.uiowa.edu/igec/IAADAPT

If Other Means Fail

- Potentially appropriate IF the symptoms present a danger to self or others
  - Hallucinations
  - Severe delusions
    - Memory problems can be mistaken for delusions, ex: things people are stealing lost items
  - Physically aggressive behavior
### Inappropriate Targets

- Wandering
- Unsociability
- Poor self-care
- Restlessness
- Verbal expressions or behaviors that do not present a danger to self or others
- Nervousness
- Anxiety
- Fidgeting
- Uncooperativeness
- Wakefulness

### If using...

- Document targets before starting treatment
  - Exact description (ex: biting rather than agitation)
  - Frequency
  - Time of day
- Re-evaluate and discontinue if no significant improvement
- No role for PRN antipsychotic use
Choosing Wisely
Geriatrics Recommendation 3

- Avoid using medications to achieve HgbA1c <7.5% in most adults age 65 and older; moderate control is generally better.
  - There is no evidence that achieving tight control in older adults with T2DM is beneficial
  - Tight control has consistently shown higher rates of hypoglycemia in older adults

- Given long timeframe to achieve theorized benefits, targets should reflect patient goals, health status, and life expectancy.
  - Among younger adults (mean age 53), time to benefit with intense control
    - Decreased mortality: ARR 3.5% 10-19 years
    - Decreased retinopathy: ARR 3% 8-10 years
    - Decreased nephropathy: Data mixed (one study positive, 2 are negative)
  - Benefits greater in the younger and newly Dx
Choosing Wisely
Geriatrics Recommendation 3

- Recommended glycemic targets

<table>
<thead>
<tr>
<th>Life expectancy</th>
<th>HgbA1c Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy adults, few comorbidities, no geriatric syndromes, and newly diagnosed DM</td>
<td>7.0 - 7.5%</td>
</tr>
<tr>
<td>Moderate comorbidity (3 or more) and life expectancy 10 years or less</td>
<td>7.5 – 8.0%</td>
</tr>
<tr>
<td>Shorter life expectancy, multiple morbidities, geriatric syndromes, functional or cognitive impairment</td>
<td>8.0 – 9.0%</td>
</tr>
</tbody>
</table>

- Most adults over 65 have 3+ comorbid conditions or geriatric syndromes, thus moderate control, (7.5-8%) recommended

Choosing Wisely
Geriatrics Recommendation 4

- Don’t use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium
  - Multiple large studies over the past 20 years consistently show poor outcomes
  - Reserve for alcohol withdrawal, or severe generalized anxiety disorder unresponsive to other therapies
Choosing Wisely
Geriatrics Recommendation 4

- Non maleficence… First, do no harm
  - 5.3 fold increase in MVA requiring hospitalization
  - 1.83 increase in falls causing hospitalization, death
  - 3.11 increase in hip fractures
  - 4.78 increase in memory loss/confusion
  - 3.82 increase in daytime fatigue

- Beneficence
  - Increases sleep time by 25 minutes on average

Meta-analysis of risks and benefits. BMJ 2005;331(7506):1169-76

Choosing Wisely
Geriatrics Recommendation 4

- NNT = 13  (for 25 extra minutes of sleep)
- NNH = 6

- Adverse events are more than twice as likely as improved sleep!
Look for and Address Medical Causes of Insomnia

- Psychiatric disorders
  - Depression, Generalized Anxiety Disorder
- Medical Illness
  - Lung disease, Chronic pain, Hypertension, heart disease, heart failure, GERD, Neurodegenerative disease (dementia, CVA, PD)
- Primary sleep disorders
  - Sleep apnea, RLS, Narcolepsy, Circadian rhythm or REM behavior sleep disorders

Look for and Address Drug Causes of Insomnia

- Caffeine
- Alcohol
- Nicotine
- Antidepressants (SSRIs, MAOIs)
- Asthma/COPD meds
- Decongestants
- H2 blockers
- Antihypertensives (BB that cross BBB)
- Anticholinesterase inhibitors
- Corticosteroids
Choosing Wisely Geriatrics Recommendation 4

- Behavioral treatment is first line therapy
  - Address underlying causes
  - Stimulus control
  - Sleep restriction
  - Relaxation techniques
  - Cognitive therapy is superior to hypnotics
    - JAMA 2006;295:2851-2858
    - Morin et al. Sleep 2006;29(11):1398-1414

Choosing Wisely Geriatrics Recommendation 5

- Don’t use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present
  - “Asymptomatic bacteriuria” is isolation of a specified quantitative count of bacteria in an appropriately collected urine specimen obtained from a person without symptoms or signs of UTI
Choosing Wisely
Geriatrics Recommendation 5

- Cohort studies show no adverse outcomes
- Studies of treatment show no benefit and show increased drug resistance
- Treat for specific clinical Sx – dysuria, frequent/urgent urination, suprapubic pain/tenderness, hematuria, fever, new UI
- Screening and Rx recommended before urologic procedures with mucosal bleeding

Summary

- Inappropriate medication use is common
- Use of inappropriate medications results in significant harm and healthcare cost
- Many adverse drug events are preventable
- Resources are available to assist in choosing and using medications wisely
"Take them until further testing shows they really aren't effective."

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