Update in Geriatrics

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Geriatric Medicine
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82 F Hx of osteoporosis on alendronate of past 2 yrs. Recent Dxa shows T scores improved 3% LS, 5% TH and 4% FN. Pt stopped rx due to news of causing “bad” fx’s. What do you recommend?

A. Change to IV bisphos therapy annually.
B. D/c rx and ensure adequate Ca, Vit D, wt bearing exercise, and Dxa 2 yrs.
C. Reassure no increased risk for 5 yrs and cont rx.
D. Change to teriparatide injections.
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A. Change to IV bisphos therapy annually.
B. D/c rx and ensure adequate Ca, Vit D, wt bearing exercise, and Dexa 2 yrs.
C. Reassure no increased risk of atypical fx for 5 yrs and cont rx.
D. Change to teriparatide injections.
Bisphosphonate Use and Risk of Atypical Fractures.
JAMA 2011;305(8):783-789
Bisphosphonate Use and Risk of Atypical Fractures.
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Background:

• 50% of older women will have fragility fx
• Mortality 20% in year after fx
• Bisphosphonates effective for primary and secondary prevention of osteoporotic fx
• Recent concerns of prolonged therapy adversely affecting bone strength
Aims:

• To determine whether bisphosphonate therapy increases risk of subtrochanteric or femoral shaft fractures (atypical fx)

• Benefits of therapy in decreasing typical fx secondary endpoint
Methods:
• Population-based, nested case-control study of >200K Ontario women > 68 y/o taking bisphosphonates.
• 716 Case patients, 3580 matched controls, 9723 women with typical OP fractures
• Provincial data base on Rx, medical encounters
Results:

• Bisphosphonate use > 5 yr assoc with increased risk of atypical fx (OR=2.74)
• Absolute risk ~ 1-2/1000 in women taking >5 yrs
• No increased risk with shorter term use
• Decreased risk of typical OP fx (OR=0.76)
Limitations:

• Potential for confounding variables
• Limited information on lifestyle (smoking, exercise, OTC such as Vit D, BMI, Family History)
• Only a small proportion of cohort received long term bisphosphonate Rx
Bisphosphonate Use and Risk of Atypical Fractures.
JAMA 2011;305(8):783-789

Bottom Line:

• Benefits for reduction of typical OP fx outweigh risk of atypical fx (10-20 fold)
• Risk of Atypical fx after 5 yrs therapy
• Is a drug holiday warranted after 5 years of therapy?
79 F NH resident hx of mod AD, COPD (40 pkyrs), depression, GIB readmit for fall and L3 comp fx. Started on calcium, Vit D and alendronate. What other rx change should you most consider?

A. D/C donepezil.
B. D/C omeprazole.
C. D/C supplemental calcium
D. D/C paroxetine.
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PPIs and Risk of Fractures
Arch Int Med 2011;171:998-1004

Proton Pump Inhibitor Drugs
PPIs and Risk of Fractures
Arch Int Med 2011;171:998-1004

Background:

• PPIs widely used with potential interaction with absorption of Calcium, vit B12, oral bisphosphonates and perhaps Osteoclast proton pump

• Frequently co-administered with bisphosphonates
PPIs and Risk of Fractures
Arch Int Med 2011;171:998-1004

Aims:
• Determine if concurrent PPI use decreases the efficacy of alendronate in protecting against hip fx

Methods:
• Population-based cohort study of >38K Danes with a mean age 70, prescribed alendronate and followed for ~ 3.5 years
PPIs and Risk of Fractures
Arch Int Med 2011;171:998-1004

Methods:

• Patients with new Rx for alendronate in national prescription database
• Other medications including H2 receptor blockers, glucocorticoids noted
• Hip fracture primary outcome as measured by National Hospital Discharge Registry
PPIs and Risk of Fractures
Arch Int Med 2011;171:998-1004

Results:

• Patient taking alendronate alone had 39% reduction in hip fractures HR=0.61 with CI= 0.52-0.71

• Patients taking alendronate and PPI had no significant reduction HR= 0.81 with CI= 0.64-1.01

• No observed interaction in patients taking H2 blockers concurrently
 Limitations:

- Observational study so unmeasured confounders may affect results (compliant patients may differ from non-compliant)
- Patients may have filled Rx but not taken them
- No info about non Rx medications
PPIs and Risk of Fractures
Arch Int Med 2011;171:998-1004

Bottom Line:

• PPI may decrease efficacy of bisphosphonates
• Consider stopping PPIs or using H2 blockers as alternatives with bisphosphonates
• Acid suppression of increasing concern for absorption of nutrients, medications and may also increase risk of C. Difficile infection
79 M hx of CAD, mild AD, urge incont, brought by dtr for concern of depression. Pt stopped reading paper, not interested in going out of house or family gatherings. GDS is 8/15. What interventions have been shown to be effective for this pt?

A. Adult day program for social stimulation
B. Daily walking or other exercise
C. Screen dtr for caregiver stress
D. Start sertraline 25 mg daily
E. D/C metoprolol
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Treatment of Depression in Patients with Dementia  JAGS 2011;59:577-585

Background:

• Prevalence of depression in patients with dementia 5-40%

• Associated with greater functional impairment

• Treatment of older patients with depression has been shown to be effective
Methods:

• Systematic review and meta-analysis of 7 RCTs of 330 patients with dementia and depression randomized to antidepressant or placebo.

• Analyzed for response and remission rates, depression severity and discontinuation.
Treatment of Depression in Patients with Dementia JAGS 2011;59:577-585

Results:

• Six trials reporting response rates
  OR = 2.12 with CI = 0.95-4.70

• Five trails reporting remission rates
  OR = 1.97 with CI = 0.85-4.55

• Adverse Event discontinuation rates 9% with drug and 6% with placebo (NSD)
Results:

• 53% of subjects getting drug responded
• 39% of patients getting placebo responded
• 2/7 studies showed positive drug effect
Limitations:

• All of the studies were underpowered
• Major variations in scales and global ratings and antidepressants
Sertraline or Mirtazapine for depression in Dementia Lancet 2011;378:403-411

Methods:

• Multicenter RCT in UK

• 326 patients, age ~ 80yr, randomized to placebo, sertraline, or mirtazapine

• Primary outcome clinical effectiveness in reducing symptoms of depression as measured by the CSDD score (Cornell Scale for Depression in Dementia)
Sertraline or Mirtazapine for depression in Dementia *Lancet* 2011;378:403-411

*Figure 2: Unadjusted mean CSDD scores by treatment group*

Lowest score is best. Error bars show 95% CIs. CSDD= Cornell scale for depression in dementia.
Sertraline or Mirtazapine for depression in Dementia Lancet 2011;378:403-411

Results:

• No difference in clinical effectiveness of either drug compared to placebo

• Side effects:

  Placebo 29/111 26%
  Sertraline 46/107 43%
  Mirtazapine 44/108 41%
Limitations:

- Potential measurement error caused by dementia. CSDD incorporates data from patient, caregiver and rater.
- Drop outs may have introduced bias (20-30% drop outs)
Sertraline or Mirtazapine for depression in Dementia  
Lancet 2011;378:403-411

Bottom Line:

• Consider psychosocial interventions as first line of therapy

• Depression in pts with Dementia may have different neurobiology than depression without dementia

• May be more effective in subsets of patients
Which of the following statements about weight loss and exercise in obese older adults are true?

A. Physical frailty is common in obese elderly and is associated with increased admission to NH.

B. Weight loss + exercise improves physical function and lessens frailty more than either individually, although each in beneficial.

C. Weight loss without exercise worsens bone density.

D. Frailty in obese elderly is associated with low muscle mass relative to body weight (relative sarcopenia) despite greater absolute muscle mass.
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Weight loss, exercise & physical function. NEJM 2011;364:1218-29
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Background:

• Obesity exacerbates the age related decline in physical function and causes frailty.

• The appropriate therapy for obese older adults is controversial.
Weight loss, exercise & physical function. NEJM 2011;364:1218-29

Study Design:
- The combined effects of weight loss and exercise in 107 adults age >65 years
- BMI > 30

Outcomes:
- Primary: Physical performance testing
- Secondary: Frailty measures, BMD, quality of life
Mean Percentage Changes in Body Weight during the 1-Year Intervention.
Mean Percentage Changes in Objective and Subjective Measures of Frailty during the 1-Year Intervention.
Weight loss, exercise & physical function. NEJM 2011;364:1218-29

Bottom Line:

• Combination of weight loss and exercise provides greater improvement in physical function than either intervention alone.

• The combination also demonstrated more improvement in BMD, balance, strength and gait.
AGS Updated Beers Criteria

AGS Updated Beers Criteria

• First developed in 1991
• Revised 1997, 2003
• New Revision relies more on evidence-based criteria.
• 53 drugs listed
10 Medications Older Adults Should Avoid or Use With Caution

- NSAID’s (long-acting, e.g., indomethacin)
- Digoxin
- Certain diabetes drugs (Glybruide, chlopropamide)
- Muscle relaxants (Robaxin, Soma)
10 Medications Older Adults Should Avoid or Use With Caution

- Anti-anxiety:
  - Benzodiazepines
    - alprazolam (Xanax)
    - diazepam (Valium)
    - Chlordiazepoxide (Librium)
  - Sleeping
    - zaleplon (Sonata)
    - zolpidem (Ambien)

- Demerol
10 Medications Older Adults Should Avoid or Use With Caution

Anticholinergics:
• Antidepressants:
  – amitrityline (Elavil)
  – Imipramine (Tofranil)
• IBS: Bentyl
• Avoid certain OTC’s:
  – Diphenhydramine (Benadryl, Tylenol PM)
• Antipsychotics: haloperidol (Haldol), risperidone (Risperdal), Quetapine (Seroquel)
New Beers drugs added:

- Megestrol
- Glyburide
- Zolpidem
- Spironolactone
- New anti-thrombotics:
  - Dabigatran
  - Prasugrel
### New Beers: drugs + disease

<table>
<thead>
<tr>
<th>SSRI’s</th>
<th>Falls &amp; fractures</th>
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<tbody>
<tr>
<td>Cholinesterase inhibitors</td>
<td>Syncope</td>
</tr>
<tr>
<td>Glitazones</td>
<td>CHF</td>
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<tr>
<td>Anti-psychotics</td>
<td>Dementia</td>
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Rank the meds most likely to cause emergency hospitalization in the elderly:

- Benzodiazepines
- Digoxin
- Insulin
- Warfarin
- Opioid analgesics
- Diphenhydramine
- Oral hypoglycemics
- Anti-platelet agents
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3. Digoxin
4. Oral hypoglycemics
5. Anti-platelet agents
6. Opioid analgesics
7. Benzodiazepines
8. Diphenhydramine
Emergency hospitalizations due to ADR’s

NEJM 2011;365:2001-12

Design:
  Define the major drugs responsible for emergency hospitalization due to ADR’s in older adults.

Methods:
  ADR data from a large national data base of ADR’s from 2007-2009 involving patients > age 65.
Emergency hospitalizations due to ADR’s
NEJM 2011;365:2001-12
Does your insurer know which drugs lead to lawsuits in internal medicine?
The Doctors Company does.

Drugs Most Frequently Involved in Medication-Related Malpractice Claims Against Internists

- Coumadin: 20%
- Opioids: 18%
- Gentamicin: 7%
- Kenalog: 5%
- Prednisone: 5%

Percentage of medication-related claims against internists (2000–2011)