

**Dilemmas in the Care of the  
Hospitalized Elderly Patient**  
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Jeff Wallace, MD, MPH  
Professor, Division of Geriatrics  
Department of Medicine  
University of Colorado, Denver CO

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**Dilemma #1**  
**Risk vs Benefit: Concomitant use of  
warfarin and aspirin in the elderly**

- Should aspirin be stopped in elderly pts w/  
stable CAD when oral anticoagulation is  
started for a new indication (eg, A Fib, DVT)?

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**Case:** An 87 yo F w/stable CAD, HTN, & hx iron  
deficiency (2007, declined GI w/u) falls and suffers  
a hip fx. Meds PTA: ASA 81mg, metop 25mg BID,  
Lisinopril 20mg, simvastatin 20mg, omeprazole  
20mg. Three wks post-op she develops a DVT.

**Question:** After initial LMWH tx, the best approach  
to manage her anticoagulant/antiplatelet tx is:

- 1) Warfarin and continue ASA for CAD
- 2) LMWH for 3 months minimum
- 3) Warfarin and stop ASA
- 4) Aspirin alone (chronic anticoag too risky)

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**Warfarin + Aspirin in Elderly: Oil and Water?**

**Benefits: Warfarin and ischemic heart dz**

**1<sup>o</sup> prevention: Warfarin ↓ angina > ASA in ↑ risk pts**  
*Arch Intern Med. 2002;162:881*

**2<sup>o</sup> prevention CAD pts: Warfarin INR 2-3 vs control**  
➢ Mortality risk ↓ 18% (95% CI, -6% to 37%)  
➢ MI risk ↓ 52% (95% CI, 37%-64%);  
➢ Stroke risk ↓ 53% (95% CI, 19%-73%)  
*JAMA. 1999;282:2058-2067*

**2<sup>o</sup> prevent s/p MI RCT: W INR 2.8-4.2 vs ASA 160mg**  
➢ W ↓ reinfarction 26%, CVA 48%, mortality NS Δ  
*NEJM 2002; 347(13):969*

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**“... one can infer that OAC alone targeted to an INR of 2-3 can provide substantial protection against recurrent CAD**

*Chest 2008;133;776S-814S*

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**Warfarin + Aspirin in Elderly: Oil and Water?**

**Risks: Warfarin + aspirin vs warfarin alone**

● Kaiser cohort study: 2500 pts W vs 1600 pts W + ASA  
➢ OR<sub>adj</sub> hemorrhagic events: 2.75 (95% CI 1.44 - 5.28)  
➢ OR<sub>adj</sub> coronary events 0.99 (95% CI, 0.37- 2.62)  
*Chest 2008;133:948-954*

● “There is a cost to adding aspirin to OAC... a doubling of bleeding risk”  
*Chest 2008;133;546S-592S*

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### Warfarin + Aspirin in Elderly: Oil and Water?

After acute tx with LMWH the best approach to manage her anticoagulant/antiplatelet therapy is:

- 1) Warfarin and continue ASA for CAD
- 2) LMWH for 3 months minimum
- 3) Warfarin and stop ASA – warfarin provides cardioprotection in stable CAD pts, combination more than doubles bleed risk w/o clear additional benefit
- 4) Aspirin alone (chronic anticoag too risky)

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### Weigh Risks & Benefits Carefully

- > Case F/U: Coumadin added, ASA continued, Hct drop 29 to 20 w/retroperitoneal bleed.
- > Conclude: Carefully weigh need to continue antiplatelet rx in elderly pts with new indication for coumadin (eg, new AF, DVT, P.E.)
- > Caveats: Pertinent to stable CAD, n/a to pts w/ ACS, s/p stents, etc.
- > Question: what about new oral anticoagulants dabigatran, rivoroxaban, apixaban?

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### Is Dabigatran Cardioprotective?

- RE-LY trial: RCT 18,000 AF: dabigatran vs warfarin
  - > 17% prior MI
  - > 40% subjects on ASA < 100mg/d
- MI rates
  - > warfarin 0.53%/yr
  - > dabigatran 150mg 0.74%/yr (RR 1.35, p 0.07)
  - > dabigatran 110mg 0.72%/yr (RR 1.38, p 0.048)
- Direct thrombin inhibitor less cardioprotective?
- No ↑ in MI rates seen w/oral Factor Xa inhibitors rivoroxaban or abixaban

NEJM 2009;361(12):1139 NEJM 2011;365(10):883 & (11):981

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**Dilemma #2**  
**Dysphagia & recurrent aspiration PNA**

- Do dietary restrictions/food alterations decrease the risk of recurrent aspiration pneumonia?

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**Case:** An 87 yo man w/Parkinson's dz, mild dementia, COPD, & dysphagia is admitted for recurrent RLL pneumonia. Bedside speech therapy evaluation notes coughing w/drinking fluids. A modified barium swallow study indicates aspiration with both thin and thickened liquids. Pt is clear he wishes to continue oral intake.

What is the next best step?

- 1) Short-term NPO and NG tube feeds
- 2) Strongly advise NPO and PEG tube
- 3) Honey thickened liquids
- 4) Chin-tuck aspiration precautions

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**Feeding Tubes in Elderly**

- NG TFs generally not an option (esp dementia pt)
  - > poorly tolerated, often pulled
  - > not accepted in NHs
- No data that TFs ↓ aspiration or PNA
  - > Saliva and/or reflux gastric contents often source of asp PNA
  - > 3 case-control studies → TFs ↑ risk asp PNA
  - > Oral hygiene, avoid PPI/H2-block may ↓ risk

JAMA 2010;303:544    J Am Med Dir Assoc 2008;9:455  
JAMA 2003;290:73    J Am Geriatr Soc 2003;51:1018

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### Do dietary modifications ↓ risk asp PNA?

- Study: 711 pts age 50+ w/PD or dementia (not CVA) & aspiration of thin liquids on videofluoroscopy
- Asp prevention effects: thin liqs w/chin down posture 68% asp vs nectar thick liq 63% vs honey thick liq 53%
- RCT w/515 subjects w/o clear difference in aspiration rates w/“Chin tuck” vs nectar-thick vs honey-thick
- 3 month PNA incidence 11%
  - “Chin tuck” vs nectar-thick vs honey-thick
  - 10% vs 8% vs 15%, p=NS

Ann Intern Med 2008;148:509

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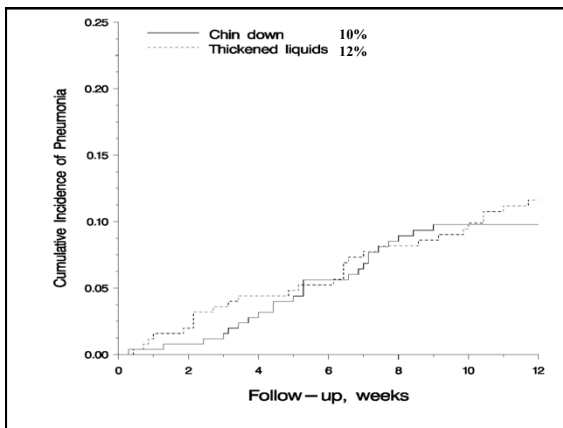
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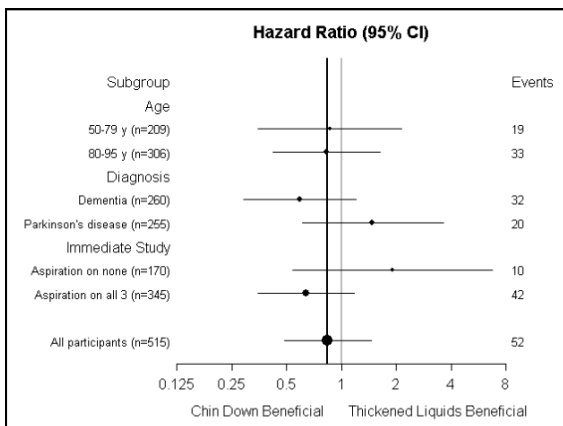
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## Dysphagia & recurrent aspiration PNA

- **Benefit? Do modified diets ↓ risk asp PNA → unclear**
- **Harm? Do modified diets have potential to cause harm**
- **Thickened liquids associated with**
  - > ↑ dehydration (6% v 2%)
  - > ↑ UTI (6% v 3%)
  - > ↑ Fever (4% v 2%)
- **Role for specialized diet to ↓ asp risk far from clear**

Ann Intern Med 2008;148:509

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**Back to Case: 87 yo man w/Parkinson's dz, mild dementia, dysphagia, recurrent RLL pneumonia. Modified barium swallow study → aspiration with thin & thickened liquids. Pt wishes to continue oral intake.**

**What is the next best step?**

- 1) Short-term NPO and NG tube feeds
- 2) Strongly advise NPO and PEG tube
- 3) Honey thickened liquids
- 4) Chin-tuck aspiration precautions – no clear preference of liquids on MBSS, less potential for harm

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## Other dietary restrictions in elderly

- **Other dietary considerations: Diabetes**
  - > caloric restriction: "1800 ADA diet" isn't endorsed by ADA (and hasn't been for 10 yrs!)
  - > no added or concentrated sweets not endorsed by ADA in NH pts, role in hospitalized elderly unclear
- **Appropriate considerations**
  - > no added salt, low salt (eg CHF)
  - > K<sup>+</sup> restriction (eg ARF, CRI)

Diabetes Care 2008; 31 (S1): S61-78

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**EBM & Dietary Restrictions in the Elderly?**



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**Dilemma #3**  
**Functional decline in elderly hospitalized pts**

- What can be done to minimize functional decline in elderly hospitalized patients?

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**Case:** An 88 yo frail woman is hospitalized w/recurrent CHF and acute on chronic renal failure (Cr 3.2, baseline 2.5mg/dL). She is weak but can transfer and walk short distances and is continent of bowel and bladder. O2 sat is 82% RA, 91% on 3L. She is given 80mg IV furosemide in the ED and admitted to the step down unit.

**Which statement is true?**

- 1) A Foley catheter is indicated to ↓ her fall risk
- 2) A Foley catheter is not indicated
- 3) A Foley catheter is indicated to accurately monitor UOP
- 4) A Foley catheter is indicated to ↓ risk of skin breakdown

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### **Iatrogenic Issues: Foley Catheters**

**“By failing to prepare you are preparing to fail”**

- Ben Franklin, inventor of flexible urinary catheter

- Catheter use common (> 1 in 5 Medicare pts)
- Each day catheter used assoc w/5% ↑ bacteriuria
- Catheter assoc UTI is #1 health care-assoc infxn
- Catheter assoc UTI cost at least \$600
- Common, costly, “reasonable preventable” → new CMS Guideline (10/08): no additional \$ to hospitals for catheter associated UTI

Ann Intern Med 2009;150:877

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### **Iatrogenic Issues: Foley Catheters**

#### **Clinical consequences beyond UTI**

- “Single point restraint”, ↓ mobility, ↑ DVT/PNA
- Discomfort, agitation, delirium
- Overdx/overtx UTI (abx resistance, C Diff)
- Indwelling catheter study older pts  $\bar{s}$  indication:
  - 535 pts age 70+ inpt gen med ward
  - 14% catheter w/o specific indication
  - Catheter use → LOS ↑ 1.5x, mortality ↑ 2.4x
  - Catheters also ↑ new GU incontinence at d/c

J Am Geriatr Soc 2007;55:227    J Am Geriatr Soc 2011;59:1099

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### **Iatrogenic Issues: Foley Catheters**

#### **● Four accepted indications for catheters**

1. Need to monitor UOP *and* pt unable to comply
2. Incontinence impacting an open wound
3. Inability to void (post-op, retention)
4. Terminal illness/palliative care

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**Back to Case: Which statement is true?**

- 1) A Foley catheter is indicated to ↓ her fall risk
- 2) A Foley catheter is not indicated
- 3) A Foley catheter is indicated to accurately monitor UOP
- 4) A Foley catheter is indicated to ↓ risk of skin breakdown

**Rationale: Pt ambulatory, able to transfer, continent. UOP via bedside commode or collection device in toilet.**

**Course: Foley placed in ED. UTI dx/tx day 3 prolonged inpt stay. Readmit 10 day later w/C Diff & sepsis. ICU x 4d w/o improvement, support withdrawn, pt expired.**

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**Iatrogenic Issues: Foley Catheters**

**Suggested protocols to decrease catheter use**

- **Restrict insertion to accepted indications (esp ED)**
  - checklist documentation for foley indication
  - if criteria not met, foley not placed
- **Remove ASAP**
  - automated MD reminders of catheter presence
  - daily review of catheter need on MD/RN rounds
  - criteria for RN to d/c catheter w/o MD order
  - automatic stop order (d/c 48hrs unless specified)

Ann Intern Med 2009;150:877

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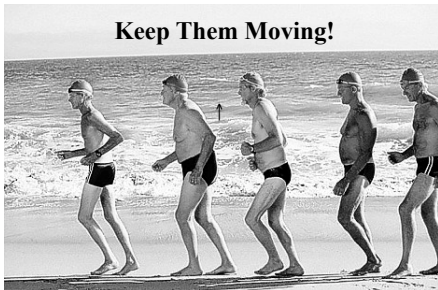
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**Functional decline during hospitalization**



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## Immobility & Bedrest

### Clinical consequences

- Orthostatic intolerance
- Loss of muscle mass within 24hrs supine position
- After adj for illness severity and comorbidity
  - low mobility in hosp → ↑functional decline
  - low mobility in hosp → ↑ new NH placement

J Am Geriatr Soc 2004;52:1263

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## Iatrogenic Issues: Immobility

### Observational study of mobility during inpt stay

- Medical inpts age 65+ (mean age 74)
- No delirium or dementia, ambulatory 2wks PTA
- 80% willing/able to walk short distance independ
- During 5 day stay:
  - 83% of time spent lying in bed
  - 13% time sitting
  - 3% time (median 43 min/d) standing or walking

J Am Geriatr Soc 2009;57:1660

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## Avoiding Immobility

### Approaches

- d/c bladder catheters, IV lines, encourage activity
- Order PT early & confirm pt participation
- Ambulate in hallway (only 27% did so in one study)
- “Road Test” your pt prior to d/c

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• Is your pt ready for discharge home?

• Any role for home therapy?



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**Dilemma #4**  
**Poor intake and weight loss**

Can we improve the nutritional status of older patients who are not eating well?

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**Case:** An 83 yo W w/hx FTT is admitted w/↑ weakness & falls attributed to UTI. Ht 5'4", wt 110 lbs, BMI 19. After 3 days abx she feels better, is working w/therapy but appetite poor, intake < 50% of meals and her weight is down 4#.

Which of the following is the most common cause of weight loss in elderly patients?

- 1) Gastrointestinal problems
- 2) Malignancy
- 3) Depression
- 4) No clear single etiology

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## Weight Loss in Older Adults: Etiology

### ● The Nine D's

Depression #1

Dentition

Dysphagia } #2 GI dx'es

Dysgeusia }

Diarrhea }

Disease - Cancer #3, readily dx'ed

Drugs (on every diff dx, more later)

Dementia

Dysfunction

10<sup>th</sup> D: "Don't know" 25% of cases

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## Weight Loss in Older Adults

Which of the following is the most common cause of weight loss in elderly patients?

- 1) Gastrointestinal problems 10-20%
- 2) Malignancy 10-20%
- 3) Depression - 20-40%
- 4) No clear single etiology - 25% multifactorial

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## Antidepressants and Weight Change

Case: Pt endorses mood down at times, anhedonia and sleep could be better.

What is the best tx choice for pt at this time?

1. Megestrol acetate (Megace)
2. Mirtazapine (Remeron)
3. Bupropion (Wellbutrin)
4. Methylphenidate (Ritalin)

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## Mirtazapine (Remeron)

- Equal efficacy to SSRIs (superior early for veg sxms)
- Sedating
- Appetite stimulant
- Weight Gain RR 3.8 compared to SSRI

↑ effect at lower doses

CNS Drugs. 2010;24(1):35-53

J Psychopharmacol. 2008;22(8):843-8

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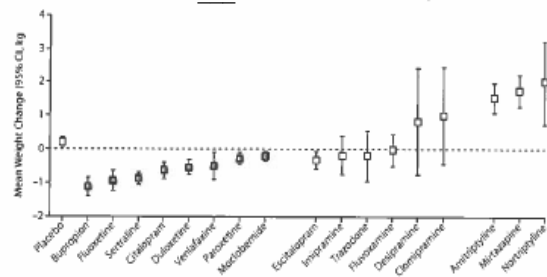
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## Acute (4-12wks) wt Δs by antidepressant

Figure 2. Weight Change During Acute Treatment With Different Antidepressants<sup>4</sup>



J Clin Psychiatry 2010; 71(10):1259

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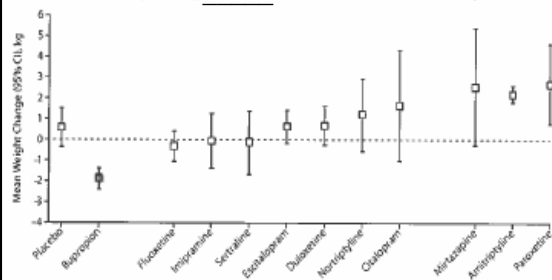
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## Wt Δs after ≥ 4 months by antidepressant

Figure 3. Weight Change During Maintenance Treatment With Different Antidepressants<sup>2</sup>



J Clin Psychiatry 2010; 71(10):1259

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### **Mirtazapine in Cancer Pts w/Depression**

- 4 wk trial: 42 CA pts w/depr, nausea, insomnia
- Initial dose 15mg, uptitrate prn,  $\bar{x}$  dose 20mg
- Nausea improved significantly day 1
- Sleep measures improved days 1-5
- Depr/anxiety & QL measures  $\uparrow$  by 1 wk
- Caution: not RCT (nor inpt)

Psychiatry Clin Neurosci 2008; 62:75

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### **A Word About Appetite Stimulants**

#### **Megestrol acetate (Megace)**

- HIV & cancer best data, limited elderly
- 800mg  $\rightarrow$  app/wt  $\uparrow$  (fat > LBM),  $Q_L$   $\uparrow$  (HIV)
- MOA:  $\downarrow$  cytokines?, 1-2 month trial
- Risks: DVT  $\uparrow$  (5-33%), fluid retention, diarrhea,  $\downarrow$  HPA axis

JAGS 2000;48:485  
JAGS 2005;53:970

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### **A Word About Appetite Stimulants**

#### **Dronabinol (Marinol)**

- Elderly data limited to small series NH pts
- Appetite  $\uparrow$ , may  $\downarrow$  pain/ $\downarrow$  nausea
- Risks: CNS/confusion
- Dose: 2.5mg BID
- Before Rx: any meds or dietary restrictions to d/c?

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### Antidepressant Choices

**Case: What is the best tx choice for pt at this time?**

**Pt w/minor depression (4 criterion: appetite, sleep, mood, anhedonia) but major sequelae w/wt loss, weakness, FTT**

1. Megestrol acetate – slow onset, limited data
2. Mirtazapine – even if “minor” depression, prompt onset, generally try before appetite stimulants
3. Bupropion – wt neutral or ↓
4. Methylphenidate – no psychomotor retardation

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### Dilemma #5

#### Polypharmacy & adverse drug events

- What approaches help ↓ polypharmacy & reduce adverse drug events in the elderly

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### A Case of Syncope

- A 79 yo M w/HTN, dementia, stage IV CKD, restless legs & OA presents to ED s/p witnessed syncopal event while seated shortly after eating dinner. He denies CP or SOB.
- Meds: amlodipine 5mg, hctz 25mg, donepezil 10mg, sinemet 25/100 qhs, tylenol & tramadol prn.
- VS are 134/76, HR 52 supine, 128/72 & 54 standing. Exam is o/w unremarkable. EKG - sinus bradycardia, HR often in 40s on ED monitor.

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### Medication Issues

Assuming his syncope is med related, the most likely medication implicated is:

- 1) Donepezil
- 2) Amlodipine
- 3) Sinemet
- 4) Tramadol
- 5) HCTZ

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### It's the Drugs!: Include in every Diff Dx

- Cholinesterase inhibitors and bradycardia
  - ChE-I → RR bradycardia ↑ 1.4 (95% CI, 1.1-1.6)
  - Dose effect: donepezil > 10mg → 2.1 ↑ risk

J Am Geriatr Soc 2009;57:1997
- Clinical significance: ChE-I use associated with
  - Syncope: HR ↑ 1.76 (95% CI, 1.57-1.98)
  - ED visits for bradycardia: HR ↑ 1.69
  - Pacemaker placement: HR ↑ 1.49
  - Hip Fx: HR ↑ 1.18 (95% CI, 1.03-1.34)

Arch Intern Med 2009;169:867
- Was it in your bradycardia differential diagnosis?

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### Medication Issues

Assuming his syncope is med related, the most likely medication implicated is:

- 1) Donepezil
- 2) Amlodipine
- 3) Sinemet
- 4) Tramadol
- 5) HCTZ

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**Drug Prescribing in the Elderly**  
**What drugs to avoid?**

Case: He is admitted for overnight observation. Labs are notable only for probable UTI.

Which of the following is the least appropriate choice for empiric tx of his UTI?

1. Cephalexin
2. Nitrofurantoin
3. TMP/SMX
4. Levofloxacin

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**Drug Prescribing in the Elderly**  
**What drugs to avoid?**

Which of the following is the least appropriate choice for empiric tx of his UTI?

- A. Cephalexin
- B. Nitrofurantoin – stage IV CKD eGFR 15-30cc, efficacy ↓ w/GFR < 40cc/min, ↑potential for side-effects, on (the dreaded) Beer's list.
- C. TMP/SMX
- D. Levofloxacin

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**The Beers List of Potentially Inappropriate rx<sup>es</sup> in older adults**

- > Muscle relaxants
- > Long acting benzodiazepines
- > Amitriptyline, doxepin
- > GI antispasmodics (eg, hyoscyamine)
- > FeS<sub>0</sub><sub>4</sub> > 325mg/d
- > Diphenhydramine, hydroxyzine
- > Long term use of full dose long half-life non-COX selective NSAIDS (naprosyn, piroxicam)
- > Daily fluoxetine
- > Clonidine
- > Methyldopa

Arch Intern Med 2003;163:2716

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**“One of the first duties of the physician is to educate the masses not to take medicine”**

**- Sir William Osler**



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### **When to Just Say No**

- NSAIDS - other than short-term use
- PPIs – stop at d/c unless clear indication
- Benzodiazepines - d/c sleeper *if inpt* use
- Iron > 325mg/d
- Muscle relaxants
- Sedating antihistamines
- 1<sup>st</sup> generation tricyclics

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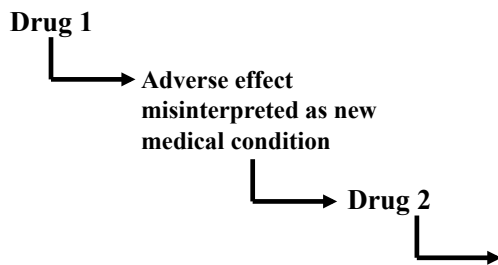
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### **Avoid Polypharmacy by Avoiding the Prescribing Cascade**



PA Rochon, BMJ, 1997; 315:1096-9.

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### Avoid the Prescribing Cascade

- HCTZ – Allopurinol
- NSAIDs – Antihypertensives
- Metoclopramide – Carbidopa/Levodopa
- Cholinesterase inhibitors – Tolterodine

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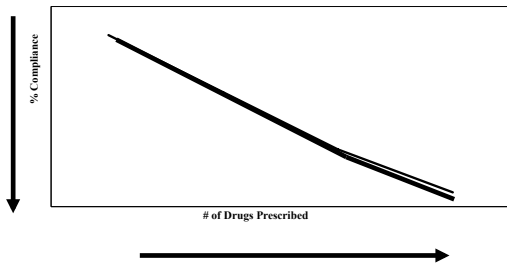
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### Avoid Polypharmacy to ↑ Compliance



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### Improving Medication Compliance

Why aren't pts more compliant?

- Compliance ~ 50%, ↓ dramatically after 6 mo
- Number of meds the key factor
- Other potential factors
  - lack of information/understanding
  - side-effects
  - forgetfulness
  - emotional factors
  - costs

NEJM 2005;353:487

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### Prudent Prescribing: Improving Medication Compliance

Explain why, what and when of any new rx

- MDs often fail in this regard
  - FP and IM docs observed for 243 new rx's
  - ¼ never stated name of new med
  - explicit directions, duration ~ 50% of time
- Write indication ON RX → it will be on bottle!
  - Lisinopril to improve heart function
  - Metoprolol to help prevent heart attack

Arch Intern Med 2006;166:1855

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### Avoid Polypharmacy

Apply clinical practice guidelines with caution:

- Application of CPGs to hypothetical 79yo pt w/COPD, DM, HTN, OP, OA
  - 12 medications, complicated regimen
  - \$406 monthly cost
- Studies rarely include frail elderly, mult comorbid dz
- Risks (drug-drug, drug-dz interactions) may be ↑
- Short & long term goals?
- Pt preferences?

JAMA 2005;294:716

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# ANY Questions!

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