Tweet Worthy Updates in #Geriatrics and #Palliative Medicine

By: @ewidera
Some Guy on Twitter
(also Associate Professor of Medicine & Geriatrics Fellowship Director @UCSF; Hospice and Palliative Care Director @ SFVAMC)

#NeverToLate

Well done meta-analysis (patient level data from >500k!) shows smoking cessation still worthwhile for patients >60
bmj.com/content/350/bm... 

https://vimeo.com/5514672
Impact of smoking and smoking cessation on cardiovascular events and mortality among older adults

- **Design:**
  - Individual participant meta-analysis using data from 25 cohorts participating in the CHANCES consortium
  - CHANCES: combines and integrates data from cohort studies conducted in Europe and North America
  - 503,905 participants aged 60 and older
  - 23 different countries

- **Outcomes:**
  - CV deaths*, acute coronary events, & stroke

- **Exposure variable:** Current smoking status
  - Never, former, or current smoking of tobacco products at the time of the baseline interview
  - Former smokers were asked for age or date of smoking cessation

---

**Results**

- 13.4% of the sample (67,639) was 70 years or older
  - Accounted for 22.8% of all deaths (8638)

- Summary hazard ratio for cardiovascular mortality compared to never smokers:
  - Current smokers: 2.07 (95% CI 1.82 to 2.36)
  - Former smokers: 1.37 (1.25 to 1.49) compared with never smokers

- The excess risk in smokers increased with cigarette consumption
Limitations

- Only baseline smoking status was available for analyses
- Use of self-report for smoking status
- Excess risk in current and former smokers was weaker in those aged 70 and older compared with those aged 60 to 69

Take Home Tweet

Earlier is better, but #nevertoolate to stop smoking, even among those older than 70.
Background on Tramadol

- 43.8 million prescriptions for tramadol filled in the U.S
- Mu-opioid receptors agonist and a reuptake inhibitor of serotonin and norepinephrine.
- Opioid activity is due to both:
  - parent compound
  - more active O-desmethylated metabolite (which, like codeine is metabolized by CYP 2D6)
- Efficacy comparable to that of other weak opioids
- Associated with seizures, serotonin syndrome, unpredictable pharmacokinetics, and all of the other usual opioid badness

Tramadol and hypoglycemia

- Population-based cohort of patients from the UK
  - either initiating tramadol or codeine therapy for non-cancer pain
  - excluded those who were prescribed other opioids, those with cancer, and those previously hospitalized for hypoglycemia in the year before entry into the study.
- 334,034 patients in the UK
  - 28,110 taking tramadol and 305,924 taking codeine
  - Tramadol and codeine users were similar on nearly all baseline potential confounders.

Results:
Tramadol use increased by more than 8 from 1999 to 2011
Results:
Cumulative Incidence of Hospitalization for Hypoglycemia in Patients Newly Treated


Results

Patients NOT on a diabetic medication were at increased risk of developing hypoglycemia severe enough to be hospitalized compared to those taking diabetic medications

• adjusted odds ratio of 2.12 vs 1.11


Limitations

• Residual confounding
• True rate of hypoglycemia may be higher
  – may not be reported in diabetics
  – may not be recognized in patients without diabetes
  – May not result in hospital admission
• ? Causal
  – diabetic rats: tramadol directly reduces hepatic gluconeogenesis and enhances peripheral glucose utilization

Take Home Tweet

Tramadol is NOT a safer alternative to more traditional opioids like morphine. Why use it? #drugswelovetostop

# Nothing To Do With This Talk

# Drugswelovetostop

### Background

- In the last year of life, the number of medicines increases by 50%.
  - Preventative medications (eg: antihypertensives)
  - Disease-specific medications (eg, antineoplastics)
  - Symptom medications (eg, opioids)

### Stopping statins in serious illness

- 381 adults with a life expectancy between a month and a year
  - 1/3 in hospice
  - 22% were unwilling to participate
- Randomized to continue statins or not
  - Not blinded

Kutner et al. JAMA Intern Med. 2015;175(5):691-700
Results:
No Difference in primary endpoint (death at 60 days)

Limitations

• Not Blinded
• Insufficient Power
  – Participants lived three times longer than expected
  – Lots of uncertainty in true effect of discontinuing statins
    • anywhere from causing 3 ½ fewer deaths to causing 10 ½ more deaths. (based on the stated 90% CI's)
Take Home Tweet

Stop statins near the end of life unless you have a really, really good reason to continue it
#drugswelovetostop

Kutner et al. JAMA Intern Med. 2015;175(5):691-700

Background on advanced dementia

- Advanced dementia is characterized by severe cognitive deficits

Hurley & Ladislav Volicer JAMA, 2002
Cholinesterase Inhibitors for AD

MMSE Mean Change at 6 months or later

Behavioral Disturbance (NPI) at 6 months or greater

NPI total score ranges from 12 to 120 for 10 domains summed. A lower score is better.
Use of Medications of Questionable Benefit in Advanced Dementia

- Cross-sectional study
  - 5406 nursing home residents with advanced dementia (CPS of 5 or 6)
    - 51% > 85 years of age, 78% female, 73% white, 13% on hospice
  - Nationwide long-term care pharmacy database linked to the Minimum Data Set (460 facilities)

- Outcomes
  - Use of medication deemed of questionable benefit in advanced dementia
  - mean 90-day expenditures attributable to these medications per resident.

Medications of questionable benefit

- The following medications if dispensed during the 90-day period after their first full MDS assessment in the study period
  - cholinesterase inhibitors
  - memantine hydrochloride
  - antiplatelets agents (except aspirin)
  - lipid-lowering agents
  - sex hormones
  - hormone antagonists
  - leukotriene inhibitors
  - cytotoxic chemotherapy
  - immunomodulators

At least 1 questionable medication was prescribed for 53.9% of nursing home residents

Residents Characteristics of 5406 Nursing Home Residents with Advanced Dementia

Table 3. Prevalence of Questionably Beneficial Medication Use Among 5406 Nursing Home Residents With Advanced Dementia During First 90 Days of Observation, 2009

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholinesterase inhibitor</td>
<td>1966 (36.4)</td>
</tr>
<tr>
<td>Memantine hydrochloride</td>
<td>1362 (25.2)</td>
</tr>
<tr>
<td>Lipid-lowering agent</td>
<td>1213 (22.4)</td>
</tr>
<tr>
<td>Antiplatelet agent</td>
<td>389 (7.2)</td>
</tr>
<tr>
<td>Hormone antagonist</td>
<td>62 (1.1)</td>
</tr>
<tr>
<td>Leukotriene inhibitor</td>
<td>61 (1.1)</td>
</tr>
<tr>
<td>Sex hormone</td>
<td>65 (1.2)</td>
</tr>
<tr>
<td>Cytotoxic chemotherapy</td>
<td>29 (0.5)</td>
</tr>
<tr>
<td>Immunomodulator</td>
<td>4 (0.007)</td>
</tr>
</tbody>
</table>

* Excluding aspirin.
Limitations

- Goals of care not known
- Drugs of Questionable Benefit is questionable
- Duration of drug use not studied

Choosing Wisely - AGS

Don't prescribe cholinesterase inhibitors for dementia without periodic assessment for perceived cognitive benefits and adverse gastrointestinal effects.

Although some randomized control trials suggest that cholinesterase inhibitors may improve cognitive testing results, it is unclear whether these changes are clinically meaningful. It is uncertain whether these medicines delay institutionalization, improve quality of life or lessen caregiver burden. No studies have investigated benefits beyond a year nor clarified the risks and benefits of long-term therapy. Clinicians, patients, and their caregivers should discuss treatment goals of practical value that can be easily assessed and the nature and likelihood of adverse effects before beginning a trial of cholinesterase inhibitors. If the desired effects (including stabilization of cognition) are not perceived within 12 weeks or so, the inhibitors should be discontinued.

Take Home Tweet

Stop the madness. Half of long-term nursing home residents with advanced dementia use at least 1 questionably beneficial medication


#NothingToDoWithThisTalk

“Less characters in this tweet than on this pill bottle” - @EWidera MedEd we need a universalmedicationsschedule
#drugswelovetostop


How often cardiac implantable electronic devices are placed among older adults with and without cognitive impairment?

- Data from Alzheimer Disease Centers from September 2005 through December 2011
- 16,245 participants who had at least one baseline visit and at least 1 follow-up visit
  - 45.8% had no cognitive impairment
  - 21.3% had Mild Cognitive Impairment (MCI)
  - 33% had dementia

_JAMA Intern Med. 2014;174(9):1514-1516._

**RESULTS**

<table>
<thead>
<tr>
<th>Cognitive Status the visit before assessed for incident pacemaker</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCI&lt;sup&gt;13&lt;/sup&gt;</td>
<td>1.2 (0.9-1.7)</td>
</tr>
<tr>
<td>Dementia&lt;sup&gt;1&lt;/sup&gt;</td>
<td>1.6 (1.1-2.5)</td>
</tr>
<tr>
<td>No cognitive impairment&lt;sup&gt;12&lt;/sup&gt;</td>
<td>1 [Reference]</td>
</tr>
<tr>
<td>CDR the visit before assessed for incident pacemaker</td>
<td></td>
</tr>
<tr>
<td>0.5, MCI</td>
<td>1.5 (1.1-2.1)</td>
</tr>
<tr>
<td>1, Mild dementia</td>
<td>1.6 (1.0-2.5)</td>
</tr>
<tr>
<td>2, Moderate dementia</td>
<td>1.5 (0.7-3.1)</td>
</tr>
<tr>
<td>3, Severe impairment</td>
<td>2.9 (1.2-7.4)</td>
</tr>
<tr>
<td>0, No cognitive impairment</td>
<td>1 [Reference]</td>
</tr>
</tbody>
</table>

**Adjusted for baseline demographics**
- age, sex, race, intensity of pacemaker use in the patients hospital referral region, cardiac comorbidity burden, functional status, and type of dementia

**Take Home Tweet**

Stop the cholinesterase-inhibitors (i.e. aricept) before you put in a pacer! Well studied association with bradycardia. #dementia

Cumulative Use of Strong Anticholinergics and Incident Dementia: A Prospective Cohort Study

- Prospective population-based cohort study
  - Data from the Adult Changes in Thought study in Group Health
  - 3434 participants 65 years or older with no dementia at study entry
  - Participants followed up every 2 years
  - Computerized pharmacy dispensing data were used to ascertain cumulative anticholinergic exposure
    - excluded anticholinergic exposure in the year before the outcome assessment

Exposures: Total standardized daily doses dispensed in the past 10 years
Table 1: Characteristics of Participants at Study Entry

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All (n = 3344)</th>
<th>New (n = 745)</th>
<th>1-90 (n = 1000)</th>
<th>91-365 (n = 1000)</th>
<th>366-1095 (n = 1000)</th>
<th>&gt;1095 (n = 1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, median (IQR), y</td>
<td>74.4 (29-90)</td>
<td>72.0 (29-90)</td>
<td>74.7 (21-90)</td>
<td>74.5 (21-90)</td>
<td>75.1 (21-90)</td>
<td>74.7 (21-90)</td>
</tr>
<tr>
<td>Male sex</td>
<td>1387 (41.4%)</td>
<td>304 (40.5%)</td>
<td>474 (47.4%)</td>
<td>571 (57.1%)</td>
<td>114 (11.4%)</td>
<td>142 (42.3%)</td>
</tr>
<tr>
<td>White race</td>
<td>3124 (93.4%)</td>
<td>609 (81.5%)</td>
<td>882 (88.2%)</td>
<td>849 (84.9%)</td>
<td>309 (30.9%)</td>
<td>527 (15.8%)</td>
</tr>
<tr>
<td>College education (&lt; n = 3333)</td>
<td>1275 (38.4%)</td>
<td>357 (47.9%)</td>
<td>522 (52.2%)</td>
<td>543 (54.3%)</td>
<td>194 (19.4%)</td>
<td>301 (9.1%)</td>
</tr>
<tr>
<td>Other (&lt; n = 3339)</td>
<td>1033 (30.9%)</td>
<td>252 (33.6%)</td>
<td>392 (39.2%)</td>
<td>383 (38.3%)</td>
<td>130 (13.0%)</td>
<td>201 (6.0%)</td>
</tr>
<tr>
<td>Regular exercise (&lt; n = 3326)</td>
<td>1243 (37.0%)</td>
<td>333 (44.5%)</td>
<td>483 (48.3%)</td>
<td>496 (49.6%)</td>
<td>168 (16.8%)</td>
<td>255 (7.6%)</td>
</tr>
<tr>
<td>Fair or poor self-reported health (&lt; n = 3329)</td>
<td>532 (15.5%)</td>
<td>65 (8.8%)</td>
<td>116 (11.6%)</td>
<td>127 (12.7%)</td>
<td>66 (6.6%)</td>
<td>138 (4.2%)</td>
</tr>
<tr>
<td>Trained hypotension (&lt; n = 3304)</td>
<td>1062 (31.8%)</td>
<td>292 (39.2%)</td>
<td>501 (50.1%)</td>
<td>567 (56.7%)</td>
<td>177 (17.7%)</td>
<td>305 (9.1%)</td>
</tr>
<tr>
<td>Trained diabetes mellitus*</td>
<td>273 (8.2%)</td>
<td>77 (10.3%)</td>
<td>43 (4.3%)</td>
<td>53 (5.3%)</td>
<td>23 (2.3%)</td>
<td>31 (1.0%)</td>
</tr>
<tr>
<td>History of stroke</td>
<td>223 (6.7%)</td>
<td>34 (4.6%)</td>
<td>42 (4.2%)</td>
<td>51 (5.1%)</td>
<td>31 (3.1%)</td>
<td>63 (1.9%)</td>
</tr>
<tr>
<td>Cardiovascular heart disease</td>
<td>635 (18.9%)</td>
<td>94 (12.7%)</td>
<td>106 (10.6%)</td>
<td>135 (13.5%)</td>
<td>87 (8.7%)</td>
<td>112 (3.3%)</td>
</tr>
<tr>
<td>Parkinson's disease (&lt; n = 347)</td>
<td>24 (0.7%)</td>
<td>6 (0.8%)</td>
<td>5 (0.5%)</td>
<td>7 (0.7%)</td>
<td>1 (0.1%)</td>
<td>6 (0.2%)</td>
</tr>
<tr>
<td>High level of depressive symptoms (&lt; n = 3378)</td>
<td>336 (10.0%)</td>
<td>23 (3.1%)</td>
<td>42 (4.2%)</td>
<td>70 (7.0%)</td>
<td>19 (1.9%)</td>
<td>16 (0.5%)</td>
</tr>
<tr>
<td>Current bereaved spouse*</td>
<td>98 (2.9%)</td>
<td>10 (1.3%)</td>
<td>20 (2.0%)</td>
<td>19 (1.9%)</td>
<td>6 (0.6%)</td>
<td>40 (1.2%)</td>
</tr>
<tr>
<td>Number of AD cases (&lt; n = 2981)</td>
<td>768 (23.7%)</td>
<td>163 (21.8%)</td>
<td>294 (29.4%)</td>
<td>163 (16.3%)</td>
<td>98 (9.8%)</td>
<td>122 (3.9%)</td>
</tr>
</tbody>
</table>

Table 2: Any and Cumulative Anticholinergic Use During the Study Period

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>All Participants, No. (%) (N = 3344)*</th>
<th>Total TSDDs Filled (% of All TSDDs)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antihistamines</td>
<td>2224 (64.8%)</td>
<td>115840 (17.2%)</td>
</tr>
<tr>
<td>Gastrointestinal antispasmodics</td>
<td>1566 (46.5%)</td>
<td>365141 (5.4)</td>
</tr>
<tr>
<td>Antivertigo agents/antimetics</td>
<td>1433 (41.7%)</td>
<td>154488 (2.3)</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>1352 (39.4%)</td>
<td>4241590 (63.1)</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>22 (0.6%)</td>
<td>31249 (0.5)</td>
</tr>
<tr>
<td>Antiparkinsonians</td>
<td>12 (0.3%)</td>
<td>1615 (0.02)</td>
</tr>
<tr>
<td>Total</td>
<td>6721473 (100)</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Association of Incident Dementia and AD with 10-Year cumulative anticholinergic use

<table>
<thead>
<tr>
<th>TSDD</th>
<th>Follow-up Time (person-years)</th>
<th>No. of events</th>
<th>HR (95% CI)</th>
<th>Useage*</th>
<th>Adjusted**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dementia</td>
<td>0</td>
<td>5638</td>
<td>136</td>
<td>1 (Reference)</td>
<td>1 (Reference)</td>
</tr>
<tr>
<td></td>
<td>1-90</td>
<td>7004</td>
<td>203</td>
<td>0.96 (0.77-1.20)</td>
<td>0.92 (0.74-1.16)</td>
</tr>
<tr>
<td></td>
<td>91-365</td>
<td>1051</td>
<td>172</td>
<td>1.11 (1.04-1.18)</td>
<td>1.19 (1.04-1.32)</td>
</tr>
<tr>
<td></td>
<td>&gt;1095</td>
<td>4022</td>
<td>186</td>
<td>1.77 (1.42-2.23)</td>
<td>1.54 (1.21-1.96)</td>
</tr>
<tr>
<td>AD</td>
<td>0</td>
<td>5638</td>
<td>112</td>
<td>1 (Reference)</td>
<td>1 (Reference)</td>
</tr>
<tr>
<td></td>
<td>1-90</td>
<td>7004</td>
<td>168</td>
<td>0.96 (0.79-1.20)</td>
<td>0.95 (0.74-1.23)</td>
</tr>
<tr>
<td></td>
<td>91-365</td>
<td>1051</td>
<td>128</td>
<td>1.11 (0.93-1.34)</td>
<td>1.15 (0.98-1.33)</td>
</tr>
<tr>
<td></td>
<td>&gt;1095</td>
<td>4022</td>
<td>146</td>
<td>1.71 (1.38-2.14)</td>
<td>1.63 (1.24-2.14)</td>
</tr>
</tbody>
</table>

* TSDD: Total standard daily dose; HR, hazard ratio.
** These analyses were not directly analogous to the primary exposure as the cumulative anticholinergic exposure (TSDD) is divided among two separate sub-categories. There were fewer participants that reached the highest level of exposure in other subcategories compared to the primary exposure.

eTable 2: Risk for incident dementia and Alzheimer disease with 10-year cumulative anticholinergic use according to subtype*•

<table>
<thead>
<tr>
<th>TSDD</th>
<th>Follow-up time (person-years)</th>
<th>Dementia</th>
<th>Alzheimer Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1763</td>
<td>405</td>
<td>Reference</td>
</tr>
<tr>
<td>366-1095</td>
<td>2170</td>
<td>68</td>
<td>Reference</td>
</tr>
<tr>
<td>&gt;1095</td>
<td>2044</td>
<td>77</td>
<td>Reference</td>
</tr>
</tbody>
</table>

Abbreviations: TSDD, total standard daily dose; HR, hazard ratio.

* These analyses were not directly analogous to the primary exposure as the cumulative anticholinergic exposure (TSDD) is divided among two separate sub-categories. There were fewer participants that reached the highest level of exposure in other subcategories compared to the primary exposure.

The model was simplified by combining the 1-90 and 91-365 categories but kept the two highest groups similar to the primary analysis.
Limitations

- No single gold standard to assess anticholinergic burden
- Reversibility of the adverse cognitive effects of medications remain untested in randomized clinical trials
- Protopathic bias
  - When a treatment for the first symptoms of a disease or other outcome appear to cause the outcome
  - Issue when there is a lag time from the first symptoms and start of treatment before actual diagnosis
  - Limited as excluded anticholinergic exposure in the year before the outcome assessment

Take Home Tweet

Higher risk for dementia with the increasing dose and duration of exposure to medications with strong anticholinergic activity.
Background

- 1 out of 12 nursing home residents in the U.S. are receiving thickened liquids
  - a third of these are ordered liquids that have the viscosity of honey ("honey-consistency thickened liquids")
- Increasing the viscosity of fluids has been shown to modify swallowing mechanics
- Data on the clinical benefits of thickened liquids in those with dysphagia due to progressive neurologic disorder like dementia is limited
Aspiration and Dysphagia

- 711 patients with dementia and/or Parkinson's disease evaluated for aspiration on videofluoroscopic swallowing studies (VFSS) with either
  - chin-down posturing
  - nectar-thick liquids
  - honey-thick liquids.
- Small statistically significant difference between thin and thickened liquids (68% versus 63%, p<0.05), about 50% of participants aspirated despite all interventions.
- Patients with dementia were significantly more likely to aspirate regardless of intervention type
- Patients were also more likely to aspirate honey-thick liquids when presented as the last rather than first intervention


Aspiration and Dysphagia

- 515 patients with dementia or Parkinson's disease with aspiration on VFSS
  - Randomized to chin-down position, nectar-thick liquids, or honey-thick liquids
  - Followed for 3 months


Results: no difference in pneumonia

Results: effect on pneumonia
Results: effect on pneumonia or death

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Hazard Ratio (95% CI)</th>
<th>Events, n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50–79 y (n = 209)</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>80–95 y (n = 306)</td>
<td></td>
<td>62</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dementia (n = 260)</td>
<td></td>
<td>58</td>
</tr>
<tr>
<td>Parkinson disease (n = 255)</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td><strong>Immediate study</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration on none (n = 170)</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Aspiration on all 3 (n = 345)</td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>All participants (n = 515)</td>
<td></td>
<td>92</td>
</tr>
</tbody>
</table>

Harms of Thickened Liquids

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Chin Down Per Day (n = 229)</th>
<th>Both Types of Liquid (n = 226)</th>
<th>Nutra-Thick (n = 132)</th>
<th>Honey-Thick Liquid (n = 123)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dehydration</td>
<td>6 (20)</td>
<td>16 (76)</td>
<td>7 (55)</td>
<td>8 (7)</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>4 (25)</td>
<td>6 (44)</td>
<td>1 (17)</td>
<td>5 (41)</td>
</tr>
<tr>
<td>Weight loss</td>
<td>4 (36)</td>
<td>4 (20)</td>
<td>1 (20)</td>
<td>2 (18)</td>
</tr>
<tr>
<td>Fatigue or weakness</td>
<td>3 (21)</td>
<td>2 (27)</td>
<td>1 (30)</td>
<td>2 (27)</td>
</tr>
<tr>
<td>Irregular bowel movements</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>1 (8)</td>
</tr>
<tr>
<td>Nausea</td>
<td>1 (7)</td>
<td>1 (7)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td><strong>Conflicts, difficulty, or event</strong></td>
<td>1 (7)</td>
<td>2 (10)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>- Dehydration, urinary tract infection, or event</td>
<td>1 (7)</td>
<td>2 (10)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>- Weight loss or fatigue event</td>
<td>1 (7)</td>
<td>2 (10)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>- Participants hospitalized at least once</td>
<td>4 (31)</td>
<td>5 (33)</td>
<td>3 (23)</td>
<td>2 (17)</td>
</tr>
<tr>
<td>- Withdrawn from intervention because of an adverse experience or hospitalization</td>
<td>4 (31)</td>
<td>10 (71)</td>
<td>5 (38)</td>
<td>5 (40)</td>
</tr>
<tr>
<td>Deaths</td>
<td>32 (10)</td>
<td>29 (13)</td>
<td>15 (11)</td>
<td>14 (11)</td>
</tr>
<tr>
<td>Serious adverse event</td>
<td>17 (7)</td>
<td>6 (3)</td>
<td>3 (2)</td>
<td>3 (2)</td>
</tr>
</tbody>
</table>

Take Home Tweet

#thickenedliquidchallenge
#NothingToDoWithThisTalk

@larryapocalypse

The Canadian version of Breaking Bad is kind of lame. It ends after he gets cancer and his treatment is totally paid for by the government.

#drugswelovetostop

Large number of frail elders over treated for diabetes putting them at risk for dangerous hypoglycemia

#Potential Overtreatment of Diabetes Mellitus in Older Adults With Tight Glycemic Control

- Cross-sectional analysis on 1288 older adults (≥65 years) with diabetes and one A1c measurement using NHANES data
  - 2001 through 2010
- Classified older adults with diabetes into 3 health status categories
  - Very complex/poor health status
    - Receiving dialysis or had 2 or more activities of daily living (ADL) impairments
  - Complex/intermediate health status
    - 3 or more chronic conditions or 2 or more instrumental ADL impairments
  - Relatively healthy
    - Did not meet the first 2 criteria

*JAMA Intern Med. 2015;175(3):356-362*
Take Home Tweet

2/3rd's of older adults with diabetes who have intermediate to poor health attained tight glycemic control. That's not a good thing...

...Unlikely to experience the benefits of intensive glycemic control and instead are likely to experience harms from treatment.
#NothingToDoWithThisTalk

Background

- Bactrim is associated with hyperkalemia
  - decreased aldosterone-mediated Na reabsorption via the ENac channel in the collecting duct

Sudden death with trimethoprim-sulfamethoxazole while on ACE-inhibitor or ARBs

- Nested case-control study
  - Residents of Ontario who were 66 years of age or older and were treated with an ACE-inhibitors or ARBs
    - cases were those who had sudden death and who received an outpatient prescription for either co-trimoxazole, amoxicillin, ciprofloxacin, norfloxacin, or nitrofurantoin within 7 days of death.
    - Each case was matched with up to four controls on age, sex, presence of kidney disease, and diabetes.
Results

• 1,601,542 patients in this cohort treated with either an ACE-inhibitor or ARB,
  – 39,879 died suddenly.
  – Of these deaths, 1,110 occurred within seven days of a prescription for one of the study antibiotics.
• Trimethoprim/sulfamethoxazole was associated with a significantly increased risk of sudden death compared those who received of amoxicillin (odds ratio 1.38, 95% CI 1.09 to 1.76 after adjustment).
• Ciprofloxacin also had a smaller but still significant increased risk of sudden death compared to those taking amoxicillin (1.29, CI of 1.03 to 1.62).

BMJ 2014;349:g6196

Limitations

• Doesn’t tell us if there is a causal relationship between use of trimethoprim-sulfamethoxazole and sudden death
  – ? due to trimethoprim’s ability to raise potassium levels.
  – Don’t have any data on serum potassium concentrations.
• Cases and controls were fairly different
  – the cases were more likely to have heart failure, renal failure, and all together more co-morbidities
• ? confounding by indication
  – don’t have any data on why these individuals were prescribed these antibiotic

BMJ 2014;349:g6196

Take Home Tweet

Be cautious when prescribing trimethoprim-sulfamethoxazole, especially in those taking ACE-inhibitors and ARBs. #polypharmacy

BMJ 2014;349:g6196
HTN goals for frail older adults?

- Hypertension in the Very Elderly Trial (HYVET)
  - RTC of BP treatment in adults >80 without major comorbidities
- Randomized clinical trial data are not available on treatment of hypertension in frail elderly persons

Hypertension goals

- ACC/AHA 2011 expert consensus
  - Lowering SBP in adults 80 years and older to 140-145 if tolerated
- 2013 European Society of HTN/Society of Cardiology
  - In patients older than 80 years of age with SBP >160, lowering SBP to 140-150 if in a good physical or mental condition
- Eighth Joint National Committee (JNC 8)
  - In those >60 years of age, SBP to <150/90, <140/90 if they have DM or CKD
PARTAGE (Predictive Values of Blood Pressure and Arterial Stiffness in Institutionalized Very Aged Population) study

• Multicenter 2 year longitudinal study in France and Italy
• 1130 frail individuals aged 80 years or older who were living in nursing homes
  – 80% of the participants were receiving treatment for hypertension
  – 20% of the total studied population were on > 2 BP meds
  – Over half of those receiving had an SBP of less than 140 mm Hg

Results

<table>
<thead>
<tr>
<th>Hazard Ratio</th>
<th>Lower CI</th>
<th>Upper CI</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP &lt; 130 mm Hg</td>
<td>0.83 (0.53-1.31)</td>
<td></td>
<td>.42</td>
</tr>
<tr>
<td>2 or more BP meds</td>
<td>0.87 (0.70-1.03)</td>
<td></td>
<td>.30</td>
</tr>
<tr>
<td>SBP &lt; 130 mm Hg and 2 or more BP meds</td>
<td>2.13 (1.22-3.66)</td>
<td></td>
<td>.007</td>
</tr>
</tbody>
</table>

Results

Limitations

• Observational Study
• Unable to adjust for severity of comorbidities
  – adjusted for age, sex, and several covariables, including history of heart failure, cancer, and other major CV disease, as well as the Charlson Comorbidity Index score
Take Home Tweet

No evidence for the use of multiple antihypertensive drugs to keep SBP <130 in frail older adults. Just don’t do it. #polypharmacy


#NothingToDoWithThisTalk

Oral morphine vs. oral oxycodone in patients with cancer-related pain

• Prospective, open-label, randomized, controlled trial + selected crossover
  – 200 Patients with cancer-related pain not already on a strong opioid
    • randomized to receive either oral morphine or oxycodone as first-line treatment.
    • Dose was individually titrated until the patient reported adequate pain control.
    • Patients who did not respond to the first-line opioid (either because of inadequate analgesia or unacceptable adverse effects) were switched to the alternative opioid.

J Pain Symptom Manage 2015;49:161e172

#Pain and #cancer

Eric Widera, MD @EWidera · Jan 24
Morphine or Oxycodone for Cancer-Related Pain? A Randomized, Open-Label, Controlled Trial jpsmjournal.com/article/S0885-… #hpnm
Results

• Good clinical response as first line treatment:
  – morphine (61/98 = 62%)
  – oxycodone (67/100 = 67%)
• Good clinical response as second line treatment
  – morphine (8/12 = 67%)
  – oxycodone (11/21 = 52%)
• No difference in adverse reaction scores between morphine and oxycodone either in first-line responders or nonresponders

J Pain Symptom Manage 2015;49:161e 172

Limitations

• Not blinded
• High attrition rate
• Adequacy of pain control and tolerability of side effects were defined by patients’ subjective assessment

J Pain Symptom Manage 2015;49:161e 172

Analgesic Efficacy of Each Opioid

<table>
<thead>
<tr>
<th>Pain Indices</th>
<th>Mean Difference (95% CI)</th>
<th>P-value</th>
<th>Mean Difference (95% CI)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response to first-line opioid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worst pain</td>
<td>3.80 (3.09, 4.51)</td>
<td>&lt;0.001</td>
<td>3.35 (2.46, 4.20)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Least pain</td>
<td>1.02 (0.15, 1.89)</td>
<td>&lt;0.001</td>
<td>1.35 (1.08, 1.99)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Average pain</td>
<td>3.02 (3.07, 4.10)</td>
<td>&lt;0.001</td>
<td>3.05 (2.47, 3.59)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pain right now</td>
<td>2.48 (1.77, 3.21)</td>
<td>&lt;0.001</td>
<td>2.21 (1.03, 2.79)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Percentage relief</td>
<td>-25.82 (-34.04, -17.60)</td>
<td>&lt;0.001</td>
<td>-30.38 (-39.03, -21.65)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Response to second-line opioid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worst pain</td>
<td>5.01 (1.16, 0.15)</td>
<td>0.01</td>
<td>5.23 (0.05, 5.11)</td>
<td>0.01</td>
</tr>
<tr>
<td>Least pain</td>
<td>1.30 (0.25, 3.31)</td>
<td>0.04</td>
<td>2.08 (0.85, 3.30)</td>
<td>0.02</td>
</tr>
<tr>
<td>Average pain</td>
<td>3.08 (0.71, 5.44)</td>
<td>0.02</td>
<td>2.54 (0.47, 4.61)</td>
<td>0.02</td>
</tr>
<tr>
<td>Pain right now</td>
<td>2.50 (0.06, 4.94)</td>
<td>0.01</td>
<td>3.31 (1.70, 4.92)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Percentage relief</td>
<td>-22.90 (-30.07, 5.02)</td>
<td>0.10</td>
<td>-26.65 (-34.13, -9.18)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

J Pain Symptom Manage 2015;49:161e 172

Take Home Tweets

Morphine cheaper and just as good as oxycodone. #pain #cancer

Evidence for opioid switching for those who do not respond to first-line opioid. #pain #cancer

J Pain Symptom Manage 2015;49:161e 172
Survival and functional outcomes after hip fracture

- Subjects
  - 60,111 long term nursing home residents
  - Hospitalized with an acute hip fracture
  - 2005-2009
- Outcome
  - Death from any cause within 180 days
  - ADL self-performance within 180 days of admission

Results

- Median Survival
  - 377 days (interquartile range 70-1002 days)
- Six Months after hip fracture
  - 1 out of every 3 (36%) nursing home residents died
  - 1 out of every 2 (46%) male nursing home residents died.
  - Half (54%) of those who were not totally dependent in locomotion prior to the hip fracture were dead or developed new total dependence in locomotion
Limitations

• Death is an easier thing to measure than someone's ability to perform activities of daily living
  – MDS definition of locomotion
    • "how the resident moves from place to place in the room or hall using whatever device is appropriate or needed"
  – total dependence
    • the resident needs to require staff to do all of the ADL for all 7 days to be described as dependent

Take Home Tweet

Hip fracture prognosis worse than many metastatic cancers. Significant palliative care needs! #prognosis

Trends in In-Hospital Cardiopulmonary Resuscitation and Survival in Adults Receiving Maintenance Dialysis

- National retrospective cohort study
  - 663,734 Medicare beneficiaries 18 years or older
  - end-stage renal disease who initiated maintenance dialysis from 2000 to 2010
- Exposure:
  - Receipt of in-hospital CPR from 91 days after dialysis initiation
- Outcomes:
  - Incidence of CPR and survival after the first episode of CPR

Results:
- 80.9% were admitted to the hospital at least once
- 6.3% underwent at least one episode of CPR while hospitalized
Take Home Tweet

6.3% of all hospitalized dialysis patients underwent CPR. Survival to discharge has improved, not so much post-discharge survival 😞


Thanks!
@ewidera