Updates in Geriatric Medicine
Competing Interests

- No pharma funding
- I am an editor for CMAJ, Implementation Science, ACP Journal Club
- On Advisory Board for BMJ, Journal of Clinical Epidemiology
Objectives

- To review some of the recent, high-quality evidence that is relevant to practicing geriatric medicine and care of the elderly physicians
- To review some useful evidence resources
Scenario

- You are asked by your regional health authority about whether they should implement Acute Care of the Elderly (ACE) units in the acute care hospitals
- They have asked you to review the evidence and provide a recommendation to them
  - In older patients admitted to hospital, what is the effectiveness of acute geriatric unit care, based on all or part of the ACE model, on patient relevant outcomes?
New Articles
These are the latest Alerts we've found that meet your personalized settings.

- No alerts showing?
- If you would like to change the number or types of alerts, please change your personalized settings at Alert Setup.
- All alerts are also in the Evidence Updates database; please find them by going to Search.

   CADTH. 2013 Mar; 1(1B); 1-142. (Review)

2. Effect of azithromycin maintenance treatment on infectious exacerbations among patients with non-cystic fibrosis bronchiectasis: the BAT randomized controlled trial.

3. Omega-3 fatty acids for the prevention of recurrent symptomatic atrial fibrillation: results of the FORWARD (Randomized Trial to Assess Efficacy of PUFA for the Maintenance of Sinus Rhythm in Persistent Atrial Fibrillation) trial.


5. Combination antifungal therapy for cryptococcal meningitis.

   Diabetes Care. 2013 Apr 5. (Original)
OBJECTIVES: To compare the effectiveness of acute geriatric unit care, based on all or part of the Acute Care for Elders (ACE) model and introduced in the acute phase of illness or injury, with that of usual care.

DESIGN: Systematic review and meta-analysis of 13 randomized controlled and quasi-experimental trials with parallel comparison groups retrieved from multiple sources.

SETTING: Acute care geriatric and nongeriatric hospital units.

PARTICIPANTS: Acutely ill or injured adults (N = 6,839) with an average age of 81.

INTERVENTIONS: Acute geriatric unit care characterized by one or more ACE components: patient-centered care, frequent medical review, early rehabilitation, early discharge planning, prepared environment.

MEASUREMENTS: Falls, pressure ulcers, delirium, functional decline at discharge from baseline 2-week prehospital and hospital admission statuses, length of hospital stay, discharge destination (home or nursing home), mortality, costs, and hospital readmissions.

RESULTS: Acute geriatric unit care was associated with fewer falls (risk ratio (RR) = 0.51, 95% confidence interval (CI) = 0.29-0.88), less delirium (RR = 0.73, 95% CI = 0.61-0.88), less functional decline at discharge from baseline 2-week prehospital admission status (RR = 0.87, 95% CI = 0.78-0.97), shorter length of hospital stay (weighted mean difference (WMD) = -0.61, 95% CI = -1.16 to -0.05), fewer discharges to a nursing home (RR = 0.82, 95% CI = 0.68-0.99), lower costs (WMD = -$245.80, 95% CI = -$470.60 to -$13.00), and lower mortality (RR = 0.68, 95% CI = 0.49-0.94).
Methodological Quality

- **AMSTAR = 9/11**
  - A rating of 8 or higher is considered high quality,
  - 4 to 7 is moderate quality, and
  - 0 to 3 is low quality.

Methods: Eligibility Criteria

- **Population:** Acutely ill or injured adults aged ≥65
- **Intervention:** Acute geriatric unit care including at least 1 of 5 ACE model components or principles:
  - Patient-centred care, early rehabilitation, frequent medical review, early discharge planning, prepared environment
- **Comparison:** Usual care
- **Outcomes:** Primary outcomes – iatrogenic complications, functional decline
- **Study Designs:** RCTs, quasi-experimental
Results

- 19 articles reporting on 13 trials
- N = 6839
- Average age 81 yrs.
Risk of Bias

- Selection bias – 6/13 studies
- Performance bias – 10/13 studies
- Detection bias – 11/13 studies
- Attrition bias – 6/13 studies
## Results

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Number of Studies</th>
<th>N</th>
<th>Result (WMD or RR with 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falls</td>
<td>2</td>
<td>749</td>
<td>0.51 (0.29 to 0.88)</td>
</tr>
<tr>
<td>Pressure Ulcers</td>
<td>2</td>
<td>749</td>
<td>0.49 (0.23 to 1.04)</td>
</tr>
<tr>
<td>Functional decline at discharge from baseline</td>
<td>6</td>
<td>4485</td>
<td>0.87 (0.78 to 0.97)</td>
</tr>
<tr>
<td>LOS, days</td>
<td>11</td>
<td>6098</td>
<td>-1.28 (-2.33 to -0.22)*</td>
</tr>
<tr>
<td>Discharged home</td>
<td>9</td>
<td>4315</td>
<td>1.05 (1.01 to 1.10)</td>
</tr>
<tr>
<td>Discharged to nursing home</td>
<td>6</td>
<td>3378</td>
<td>0.96 (0.80 to 1.15)</td>
</tr>
<tr>
<td>Mortality</td>
<td>11</td>
<td>6612</td>
<td>1.01 (0.81 to 1.27)</td>
</tr>
<tr>
<td>Readmission</td>
<td>5</td>
<td>3983</td>
<td>1.05 (0.92 to 1.18)</td>
</tr>
</tbody>
</table>
**Bottom Line**

- Acute geriatric unit care based on all or part of the ACE model improves some patient and system-level outcomes.
- It’s not clear which components are most effective.
  - Patient centred care, frequent medical review, early rehab and early discharge planning were provided in more than half of the studies.
  - Few studies have evaluated the full ACE model.
  - No head to head trials of the components.
  - Targeting of patients.
  - Studies don’t include adequate description of the intervention components.
- Are these components of overall better care and should be implemented across hospitals?
  - Senior Friendly Hospital Initiative.
Scenario

- You are now asked to help your region consider implementing a falls prevention strategy in the community.
- They have asked you to review the evidence and to provide a recommendation.
  - In community-dwelling older people, what is the effectiveness of falls prevention strategies on falls and injuries resulting from falls?
Update on productive aging in the American Journal of Occupational Therapy 2011.
D'Amico M.

Staying safe at home. Home environmental audit recommendations and uptake in an older population at high risk of falling.
Curran ML, Comans TA, Heathcote K, Haines TP.

Tanvi B, Feng Y, Yi-Chung P.

Long-term effects of three multicomponent exercise interventions on physical performance and fall-related psychological outcomes in community-dwelling older adults: a randomized controlled trial.
Freiberger E, Häberle L, Spirduso WW, Zijlstra GA.

Randomized controlled trial comparing tailoring methods of multimedia-based fall prevention education for community-dwelling older adults.
Schepens SL, Panzer V, Goldberg A.
Clinical Queries Filters

Medical Genetics Filters

Systematic Reviews Search Filter

Clinical Queries using Research Methodology Filters

<table>
<thead>
<tr>
<th>Category</th>
<th>Optimized For</th>
<th>Sensitive/Specific</th>
<th>PubMed Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>therapy</td>
<td>sensitive/broad</td>
<td>99%/70%</td>
<td>((clinical[Title/Abstract] AND trial[Title/Abstract]) OR clinical trials[MeSH Terms] OR clinical trial[Publication Type] OR random*[Title/Abstract] OR random allocation[MeSH Terms] OR therapeutic use[MeSH Subheading])</td>
</tr>
<tr>
<td></td>
<td>specific/narrow</td>
<td>93%/97%</td>
<td>(randomized controlled trial[Publication Type] OR (randomized[Title/Abstract] AND controlled[Title/Abstract] AND trial[Title/Abstract]))</td>
</tr>
<tr>
<td></td>
<td>specific/narrow</td>
<td>64%/98%</td>
<td>(specificity[Title/Abstract])</td>
</tr>
<tr>
<td>etiology</td>
<td>sensitive/broad</td>
<td>93%/63%</td>
<td>(risk*[Title/Abstract] OR risk*[MeSH:noexp] OR risk*[MeSH:noexp] OR cohort studies[MeSH Terms] OR group*[Text Word])</td>
</tr>
<tr>
<td></td>
<td>specific/narrow</td>
<td>51%/95%</td>
<td>((relative*[Title/Abstract] AND risk*[Title/Abstract]) OR (relative risk*[Text Word]) OR risks[Text Word] OR cohort studies[MeSH:noexp] OR (cohort*[Title/Abstract] AND stud*[Title/Abstract]))</td>
</tr>
<tr>
<td></td>
<td>specific/narrow</td>
<td>52%/94%</td>
<td>(prognos*[Title/Abstract] OR (first*[Title/Abstract] AND episode*[Title/Abstract]) OR cohort*[Title/Abstract])</td>
</tr>
<tr>
<td>clinical prediction guides</td>
<td>sensitive/broad</td>
<td>96%/79%</td>
<td>(predict*[tiab] OR predictive value of tests[mh] OR scor*[tiab] OR observ*[tiab] OR observer variation[mh])</td>
</tr>
<tr>
<td></td>
<td>specific/narrow</td>
<td>54%/99%</td>
<td>(validation*[tiab] OR validate*[tiab])</td>
</tr>
</tbody>
</table>

The Clinical Queries search filters are based on the work of Haynes RB et al.

Medical Genetics Search Filters
Methodological Quality

- AMSTAR 10
Methods: Eligibility Criteria

- Population: ≥60 yrs. and living in the community
- Interventions: Any intervention designed to reduce falls – grouped using ProFaNE
- Comparison: Any comparator including usual care
- Outcomes: Rate or number of falls, number of participants sustaining at least 1 fall
- Study design: RCTs, quasi-RCTs
- Time: Any duration
Results

- 159 trials
- N >79000
- Most common interventions tested:
  - Exercise – 59 trials
  - Multifactorial program – 40 trials
Risk of Bias

- Random sequence generation (selection bias)
- Allocation concealment (selection bias)
- Blinding of participants and personnel (performance bias)
- Blinding of outcome assessment (detection bias): Falls and fallers
- Blinding of outcome assessment (detection bias): Fractures
- Incomplete outcome data (attrition bias): Falls
- Incomplete outcome data (attrition bias): Fallers
- Risk of bias in recall of falls

Legend:
- Low risk of bias
- Unclear risk of bias
- High risk of bias
## Results: Rate of falling

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Number of studies</th>
<th>N</th>
<th>Results (RaN, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicomponent group exercise</td>
<td>16</td>
<td>3622</td>
<td>0.71 (0.63 to 0.82)</td>
</tr>
<tr>
<td>Multicomponent home-based exercise</td>
<td>7</td>
<td>951</td>
<td>0.68 (0.58 to 0.80)</td>
</tr>
<tr>
<td>Tai Chi</td>
<td>5</td>
<td>1563</td>
<td>0.72 (0.52 to 1.0)</td>
</tr>
<tr>
<td>Multifactorial interventions (including risk assessment)</td>
<td>19</td>
<td>9503</td>
<td>0.76 (0.67 to 0.86)</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>9</td>
<td>9324</td>
<td>1.00 (0.90 to 1.11)</td>
</tr>
</tbody>
</table>
Subgroups
- Vitamin D3 (by mouth) vs control or placebo
- Vitamin D3 (by mouth) + calcium vs control or placebo
- Vitamin D3 (by mouth) + calcium vs calcium
- Vitamin D2 (by mouth) + calcium vs placebo + calcium
- Vitamin D2 (by injection) vs placebo
- Vitamin D (by mouth or by injection) with or without calcium vs control: studies with multiple arms...
## Results: Risk of falling

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Number of studies</th>
<th>N</th>
<th>Results (RR, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicomponent group exercise</td>
<td>22</td>
<td>5333</td>
<td>0.85 (0.76 to 0.96)</td>
</tr>
<tr>
<td>Multicomponent home-based exercise</td>
<td>6</td>
<td>714</td>
<td>0.78 (0.64 to 0.94)</td>
</tr>
<tr>
<td>Tai Chi</td>
<td>6</td>
<td>1625</td>
<td>0.71 (0.57 to 0.87)</td>
</tr>
<tr>
<td>Multifactorial interventions (including risk assessment)</td>
<td>34</td>
<td>13617</td>
<td>0.93 (0.86 to 1.02)</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>13</td>
<td>26747</td>
<td>0.96 (0.89 to 1.03)</td>
</tr>
</tbody>
</table>
Bottom Line

- Group and home-based exercise programs reduce rate of falls and risk of falling
- Multifactorial assessment and intervention programs reduce rate of falls but not risk of falling
- Tai Chi reduces risk of falling
- Vitamin D supplementation does not appear to reduce falls but may be effective in people with lower vitamin D levels
Practice and Research Implications

- Most studies excluded patients with cognitive impairment
- Definition of falls varied and not always provided
- Need better descriptions of ‘dose’ and ‘formulation’ of the interventions
- Few head to head trials
  - Role for network meta-analysis
Scenario

- Your patient who was recently diagnosed with Mild Cognitive Impairment asks about a recent study he read about in the paper suggesting benefit for medications for prevention of dementia – he wants to know if he can get a prescription for one

- In patients with MCI, does treatment with a cholinesterase inhibitor decrease progression to dementia?
mild cognitive impairment

Your query matches more than one term. Please select one of the following terms: impaired cognition (finding); minimal cognitive impairment

Narrow Your Search

<table>
<thead>
<tr>
<th>Content Type</th>
<th>x Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal Articles (8)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Article Type</th>
<th>x Clear</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP Journal Club (3)</td>
<td></td>
</tr>
</tbody>
</table>

TODIC

- elderly (5)
- dementia (4)
- impaired cognition (finding) (4)
- minimal cognitive impairment (3)
- cholinesterase inhibitors (2)
- alzheimer's disease (1)
- bone density (1)

Specify Date Range

- From: mm/dd/yyyy
- To: mm/dd/yyyy

Apply

Showing 1-8 of 8 results

Sort By: Best Match | Most Recent

<table>
<thead>
<tr>
<th>View</th>
<th>Basic</th>
<th>Expanded</th>
</tr>
</thead>
</table>

ACP Journal Club | 20 September 2011

Inability to correctly identify year or month was accurate for detecting cognitive impairment in older patients

Rosanne M. Leipzig, MD, PhD

ACP Journal Club | 16 October 2012

The Mini-Cog had sensitivity similar to the longer 3MS for detecting cognitive impairment or dementia

Calvin Hirsch, MD

ACP Journal Club | 17 February 2009

High-dose vitamin B supplements did not slow cognitive decline in mild-to-moderate Alzheimer disease

Sudeep S. Gill, MD, MSc

ACP Journal Club | 20 May 2008

Testosterone supplementation did not prevent cognitive decline or increase bone mineral density in older men

Eef Hogervorst, PhD

ACP Journal Club | 19 February 2013

Review: Cholinesterase inhibitors do not reduce progression to dementia from mild cognitive impairment

Nassee Masoodi, MD, MBA, FACP

ACP Journal Club | 21 April 2009

Review: Long-term annual conversion rate to dementia was 3.3% in older adults with mild cognitive impairment

David Burke, BMed, MRCPsych
Therapeutics

Review: Cholinesterase inhibitors do not reduce progression to dementia from mild cognitive impairment


Clinical impact ratings:  

Question
In adults with mild cognitive impairment, what are the efficacy and safety of cholinesterase inhibitors (ChEIs)?

Review scope
Included studies compared ChEIs (donepezil, rivastigmine, galantamine, or tacrine) with placebo for \( \geq 1 \) month in adults with mild cognitive impairment (as defined by each study but including subjective memory complaint and relatively preserved daily functioning). Primary outcomes were progression to dementia, which included Alzheimer disease (National Institute of Neurological and Communicative Disorders and Stroke and Alzheimer’s Disease and Related Disorders Association criteria); vascular dementia (consensus criteria); and Lewy body dementia (consensus criteria).

Main results
The main results are in the Table.

Conclusion
In adults with mild cognitive impairment, cholinesterase inhibitors do not differ from placebo for progression to dementia at 1 and 3 years but increase nonserious adverse event rates.

Source of funding: No external funding.

For correspondence: Dr. T.C. Russ, University of Edinburgh, Edinburgh, Scotland, UK. E-mail tom.russ@hbs.net.

Commentary
The results of the review by Russ and Morling confirm that, despite their widespread use, we do not yet have clear evidence to support the use of cholinesterase inhibitors in dementia.
Methodological Quality

- AMSTAR II
Methods: Eligibility Criteria

- Population: Patients with MCI (any definition)
- Intervention: Cholinesterase inhibitors
- Comparison: Placebo
- Outcomes: Primary – progression to dementia, adverse events
- Study Designs: RCTs
- Time: Any duration
Results

- 9 RCTs
- N = 5149
Risk of Bias

- Selection bias – low risk in all
- Performance bias – low risk in all
- Detection bias – low risk in all
- Attrition bias – high risk in all
<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Number of trials (n)</th>
<th>Weighted event rates</th>
<th>At 16 wk. to 3 y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ChEls</td>
<td>Placebo</td>
</tr>
<tr>
<td>Dementia at 1 y</td>
<td>3 (2560)</td>
<td>7.6%</td>
<td>12%</td>
</tr>
<tr>
<td>Dementia at 2 y</td>
<td>2 (2048)</td>
<td>12%</td>
<td>18%</td>
</tr>
<tr>
<td>Dementia at 3 y</td>
<td>2 (1530)</td>
<td>20%</td>
<td>24%</td>
</tr>
<tr>
<td>Serious adverse events</td>
<td>6 (4207)</td>
<td>19%</td>
<td>19%</td>
</tr>
<tr>
<td>Any adverse event</td>
<td>6 (4207)</td>
<td>89%</td>
<td>82%</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>7 (4761)</td>
<td>29%</td>
<td>18%</td>
</tr>
<tr>
<td>Nausea</td>
<td>7 (4761)</td>
<td>22%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Mortality</td>
<td>7 (4719)</td>
<td>3.3%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>
Bottom Line

- Cholinesterase inhibitors don’t impact conversion to dementia up to 3 years and they increase the risk of adverse events
  - No prescription for your patient
- With longer follow up will a difference be noted?
- Study didn’t report arrhythmia separately
- Different definitions of MCI used
Welcome to the CEBM

The goal of this website is to help develop, disseminate, and evaluate resources that can be used to practice and teach EBM for undergraduate, postgraduate and continuing education for health care professionals from a variety of clinical disciplines. This site also serves as a support for the book entitled, Evidence-based Medicine: How to Practice and Teach EBM by Sharon E. Straus, W. Scott Richardson, Paul Glasziou, and R. Brian Haynes.

For evidence-based urology, please go to The International Evidence Based Urology Working Group.

About KT Clearinghouse

KT Clearinghouse is supported by the Canadian Institutes of Health Research (CIHR)

- **Objectives:**
  - analyze the efficacy, safety, and comparative effectiveness of drugs for **clinically important patient-centered outcomes**, including continence and quality of life;
  - analyze **long-term adherence** to drug treatments;
  - analyze **which characteristics** of women, including demographic characteristics, comorbid conditions, and type and severity of UI, can **modify treatment**
• Only urgency UI in community-dwelling women
• “Clinically important” outcomes:
  – 50% reduction in UI frequency
  – clinically important threshold change in QOL on validated scales
  – All self-reported adverse effects irrespective of authors conclusions about causality
  – Broad definition of adverse effects and harms

• AMSTAR 11
94 RCTs included
80% women, most with daily urgency incontinence
~34,000 patients
Drugs always compared to placebo or another drug, not to non-surgical management options (ie pelvic floor exercises, biofeedback, etc.)
Figure 1. Continence with drugs for urgency urinary incontinence (pooled with random effects from randomized, controlled trials).

<table>
<thead>
<tr>
<th>Drug (Randomized Trials/Participants, N/n)</th>
<th>Attributable Events per 1000 Treated (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy</td>
<td></td>
</tr>
<tr>
<td>Fesoterodine (2/2465)</td>
<td>130.00 (58.00 to 202.00)</td>
</tr>
<tr>
<td>Oxybutynin (4/992)</td>
<td>114.00 (64.00 to 163.00)</td>
</tr>
<tr>
<td>Solifenacin (5/6304)</td>
<td>107.00 (58.00 to 156.00)</td>
</tr>
<tr>
<td>Tolterodine (4/3404)</td>
<td>85.00 (40.00 to 129.00)</td>
</tr>
<tr>
<td>Tropium (4/2677)</td>
<td>114.00 (83.00 to 144.00)</td>
</tr>
<tr>
<td>Comparative effectiveness</td>
<td></td>
</tr>
<tr>
<td>Fesoterodine vs. tolterodine (2/3312)</td>
<td>55.00 (21.00 to 88.00)</td>
</tr>
</tbody>
</table>

Favors Active Drug: 0 to 250
### CGS 2013 - Top Articles from 2012

#### Figure 2
Treatment discontinuation due to adverse effects from drugs for urgency urinary incontinence (pooled results from randomized, controlled trials by using rate arcsine transformation).

<table>
<thead>
<tr>
<th>Drug (Randomized Trials/Participants, N/n)</th>
<th>Attributable Events per 1000 Treated (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td></td>
</tr>
<tr>
<td>Darifenacin (7/3136)</td>
<td>4.00 (−12.00 to 23.00)</td>
</tr>
<tr>
<td>Fesoterodine (4/4433)</td>
<td>31.00 (10.00 to 56.00)</td>
</tr>
<tr>
<td>Oxybutynin (5/1483)</td>
<td>63.00 (12.00 to 127.00)</td>
</tr>
<tr>
<td>Solifenacin (7/9080)</td>
<td>13.00 (1.00 to 26.00)</td>
</tr>
<tr>
<td>Tolterodine (10/4466)</td>
<td>5.00 (−11.00 to 26.00)</td>
</tr>
<tr>
<td>Trospium (6/3936)</td>
<td>18.00 (4.00 to 33.00)</td>
</tr>
<tr>
<td>Comparative safety</td>
<td></td>
</tr>
<tr>
<td>Fesoterodine vs. tolterodine (4/4440)</td>
<td>17.00 (5.00 to 31.00)</td>
</tr>
<tr>
<td>Oxybutynin vs. tolterodine (6/2323)</td>
<td>72.00 (7.00 to 154.00)</td>
</tr>
<tr>
<td>Solifenacin vs. tolterodine (3/2755)</td>
<td>12.00 (−1.00 to 28.00)</td>
</tr>
<tr>
<td>Trospium vs. oxybutynin (2/2015)</td>
<td>1.00 (−32.00 to 48.00)</td>
</tr>
</tbody>
</table>
• See “Table 2 – Conclusions about Pharmacologic Management of UI in Women”

• Issues:
  – Trials all very short (2-3 months)
  – Very few include older women, or focus on elder (6)
  – Adverse effects more common in patients taking 7 or more medications
Bottom Line:

• Community-dwelling patients with urgency UI
• All drugs for UI have similar small effect size (less than 200 continent patients per 1000 treated) on clinically important outcomes compared to placebo
  BUT
• Adherence rates are low, discontinuation common and adverse effects higher in persons taking 7 or more medications. Long term safety not known.

- Meta-analysis to:
  
  examine the long-term efficacy and safety of the new oral anticoagulants compared to warfarin in preventing stroke and systemic embolism in patients with atrial fibrillation (AF)
n=3 RCTs included (apixaban, rivaroxaban and dabigatran)

44,563 patients

Mean age 70-73 +/- 8 years

CHADS scores equally distributed in 2 studies, third had almost 90% of patients CHDS 3-6

Follow-up averaged ~ 2 years

AMSTAR 10
Figure 2. Forest plot for (A) all-cause stroke and systemic embolism, (B) ischemic and unspecified stroke, and (C) hemorrhagic stroke, new oral anticoagulants (NOA) versus warfarin in patients with AF.
Figure 3. Forest plot for (A) major bleeding, (B) intracranial bleeding, and (C) gastrointestinal bleeding, new oral anticoagulants (NOA) versus warfarin in patients with AF.
Bottom Line:

- In patients with atrial fibrillation, new oral anticoagulants reduced the risk for any stroke or systemic embolism compared to warfarin, and showed a trend towards better secondary outcomes including ischemic stroke, hemorrhagic stroke.
- Inconclusive with respect to major or GI bleeding, but showed lower risk of intracranial bleeding.
- Supports the use of new oral anticoagulants as an alternative to warfarin as long term anticoagulation in AF.

“Does the relationship between elevated BP and mortality vary by objectively measured walking speed among a nationally representative sample of elderly adults?”. 
Data subset from NHANES study, 1999-2000 and 2001-2002

- 2438 elders age 65 and older who completed a questionnaire and exam
- 3-4 BP measurements and 6 m walk test (if they could walk independently)
- Slow walkers = <0.8 m/sec
Figure 2. Sensitivity analyses of the association of elevated systolic blood pressure (SBP) (≥140 mm Hg) and mortality, stratified by walking speed, in National Health and Nutrition Examination Survey participants 65 years and older (1999-2002), followed up until December 31, 2006.
Bottom Line:

- Higher SBP (>140 mm Hg) associated with increased risk of mortality amongst older adults with medium to fast walk speed.
- No association between SBP or DBP (>90 mm Hg) and mortality amongst slower walking adults.
- Amongst those who could not complete the walk test, increased SBP and DBP was strongly and independently associated with lower risk of dying.
- Gait speed as a vital sign in the elderly?

“Whether a non-pharmacological intervention delivered by family members could reduce the incidence of delirium, as compared with standard management of elderly inpatients at intermediate or high risk of developing this condition during the course of hospitalization”
• Single-blind RCT
• Included all adults admitted to general medicine ward in hospital over a 10 month period who were at risk of delirium:
  – >70 years
  – Hx of cognitive impairment with MMSE <24 at baseline
  – Alcoholism
  – “metabolic disturbances” on admission
• Excluded those with delirium on admission, no family, not on GIM, in a room with >2 patients
**Intervention:**
- 10 minute education of family members plus pamphlet covering features and prognosis of acute confusion
- Clock and calendar in room
- Avoidance of sensory deprivation
- Presence of familiar objects in room (photos, cushions, radio)
- Reorientation of patients by family members (date, time recent events)
- Extended family visiting (5 h per day)

**Outcome:** CAM positive or negative

1285 potential patients, 287 randomized
Results:
- Mean age 78 +/- 6 years
- 60% male

Table 2. Study outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Control group (n = 143)</th>
<th>Intervention group (n = 144)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident delirium, no. (%)</td>
<td>19 (13.3)</td>
<td>8 (5.6)</td>
<td>0.027</td>
</tr>
<tr>
<td>Mixed delirium, no. (%)</td>
<td>9 (6.3)</td>
<td>2 (1.4)</td>
<td></td>
</tr>
<tr>
<td>Hypoactive delirium, no. (%)</td>
<td>8 (5.6)</td>
<td>2 (1.4)</td>
<td></td>
</tr>
<tr>
<td>Hyperactive delirium, no. (%)</td>
<td>2 (1.4)</td>
<td>4 (2.8)</td>
<td></td>
</tr>
<tr>
<td>Median delirium duration (days) (IQR)</td>
<td>3 (1−5)</td>
<td>2 (1−2)</td>
<td>0.37</td>
</tr>
<tr>
<td>Falls, no. (%)</td>
<td>4 (2.8)</td>
<td>0 (0)</td>
<td>0.06</td>
</tr>
<tr>
<td>Median hospital stay (days) (IQR)</td>
<td>9 (5−12)</td>
<td>9 (6−13)</td>
<td>0.36</td>
</tr>
</tbody>
</table>
Cumulative Incidence of Delirium by Study Group

Figure 2. Time-to-event curves of the studied patients.
Limitations:

- Contamination of control group as randomization occurred within same unit
- Non-blinded outcome assessors
- 1 or 2 patients per room – is this realistic?
- Family cooperation and involvement essential
Bottom Line:

• In older adults at risk for delirium admitted to a general medicine unit, a multi-component intervention delivered by family members was effective at reducing the incidence of delirium compared to usual care.

• Low cost, low risk intervention, therefore we should have low threshold for implementation.