Advances in Geriatrics 2010

Primary Care Medicine: Principles and Practice

October 29, 2010

Louise Aronson, MD, MFA
Associate Professor
School of Medicine
Department of Medicine
Division of Geriatrics

Methods
• Literature review October 2009 – September 2010
• Potential to change, inform or confirm practice
• Methodologically sound
• Reviewed in ACP Journal Club, Geriatrics Journal Club or Journal Watch
• Avoid overlap with other presenters

Life Expectancy 1850 - 2007

Christensen, K., et al.
Lancet 2009;374:1196-1208
“The Aging Century”

- Visits to physicians in many IM and surgical specialties are already disproportionate for patients aged 65 years or older:
  - General primary care 28%
  - Internal medicine 43%
  - IM subspecialties 44%
  - Cardiology 60%
- The proportion of visits by older patients increases by 1% annually
- 10% of 80-year-olds die in less than 2 years, but nearly 50% live a decade or more longer

Topics

- Dementia
  - Risk, Driving, Late stage
- Falls
  - New risk factor
- Heart Failure
  - BNP
- (Back) pain
  - Vertebroplasty and spinal fusion
- Advance Care Planning

The great secret that all old people share is that you really haven't changed in seventy or eighty years. Your body changes, but you don't change at all. And that, of course, causes great confusion.

Doris Lessing
BJ is a 76 year old woman with HTN and stress incontinence comes to clinic for a routine visit. As you walk toward the exam room, an older man introduces himself as her husband and says, “She doesn’t see it but she’s losing her memory.” The patient herself does not raise the issue and when asked about memory reports no problems. She gives a clear, accurate history and says she continues to do all the housework and volunteer at her church. What is the diagnosis?

A. Normal aging
B. Mild cognitive impairment
C. Early dementia
D. Hearing loss
E. Unable to determine

---

Mild Cognitive Impairment

Articles and abstracts 1990-2008:

Flowchart for the diagnosis of mild cognitive impairment (MCI) and its subtypes
Age-related Cognitive Change

• Most common complaint: word (name) finding
• Primary problem in long term memory is recall (accessing the info), not recognition
• More trouble with difficult tasks when distracted
• Slower information processing
• Some decline in process-oriented aspects of short term memory

How to diagnose MCI?

• The Mini-cog
  – 3 item recall + Clock Drawing Test (CDT)
    • Give 3 items and ask pt to repeat and remember them
    • Divert using CDT
    • Ask for recall of 3 words

• Scoring
  – 1 point for each recalled word
  – CDT Normal if the patient places the correct time (1 point) and the clock appears grossly normal (1)
• MCI
  – Pt misses 1-2 words on recall OR 1 recall + 1 clock OR nl memory abnl clock and other MCI criteria
Why diagnose MCI?

• Increase risk of progression to dementia
  – 6-10% per year vs 1-2% in those without MCI
• Increased need for follow up
  – Functional status
  – Behavior
  – Driving
• Treatment of depression
• Participation in trials of disease modifying agents
• Safety of patient and others
• Planning for the future

SBA is an 81 yo man with h/o CABG + MVR, prostate CA, massive GIB, HTN, hypothyroidism and mild dementia who comes in for f/u. His daughter sends an email saying she doesn’t think he can drive safely anymore. The patient says he has no driving problems. He’s had no accidents and really only drives short distances. For the last couple of years, his wife has done the night and highway driving. Which part of this history is NOT useful in determining driving safety?

A. History of mild dementia
B. Email from daughter
C. Self-rating of driving ability
D. Absence of history of accidents/citations
E. Self-limitation of driving distance and type

Safety: Driving and Dementia

• Practice Parameter update: Evaluation and management of driving risk in dementia
• Systematic literature review
  – Recommendations mostly based upon level B or C evidence
  – No single test or attribute that accurately predicts risk
  – Even patients with mild dementia are at high risk for unsafe driving
• Article provides
  – Risk algorithm
  – Patient and caregiver questionnaires
Dementia and Driving

- Patient is at increased risk for unsafe driving if:
  - Clinical Dementia Rating scale score ≥ 0.5 (A)
  - Caregiver rates patient’s driving ability as marginal or unsafe (B)
  - Pt has a history of crashes or traffic citations (C)
  - Pt has reduced driving mileage or self-reported situational avoidance (C)
  - Mini-Mental State Examination scores ≤ 24 (C)
  - Pt exhibits aggressive or impulsive personality characteristics (C)

- Your responsibility
  - Laws vary by state

---

Iverson et al. Neurology 2010;74:1324

---

Risk Factors

<table>
<thead>
<tr>
<th>Level A evidence</th>
<th>Level B evidence</th>
<th>Level C evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other

- Visual impairment, early delusions, visual impairment, motor impairment

Risk Assessment

- Clinical Dementia Rating scale score ≥ 0.5
- Caregiver rates patient’s driving ability as marginal or unsafe
- Pt has a history of crashes or traffic citations
- Pt has reduced driving mileage or self-reported situational avoidance
- Mini-Mental State Examination scores ≤ 24
- Pt exhibits aggressive or impulsive personality characteristics

Risk Management

- Encourage family support for alternate transportation
- Engage moderate interventions: driving evaluation, modified DNR, alternate or professional driving evaluation
- Report to state guidelines

---

Intervention guidelines: DNR, alternate transportation, professional driving evaluation.
Which of the following is true?

A. African-Americans and Latinos are 1.5 times more likely than whites to develop Alzheimer’s
B. A 2010 study showed a mean 6.7 year survival after diagnosis with dementia in primary care setting
C. Incidence and prevalence of dementia are higher in women than in men
D. Between 2000-2006, deaths from CAD, CVA and HIV declined while deaths from Alzheimer’s increased by 46%
E. All of the above

Advanced Dementia

• 7th leading cause of death
• The clinical course of advanced dementia has not been well studied
• The study
  – 18-month, multicenter, prospective study of 323 nursing home residents with advanced dementia
  – Goal: describe their clinical course with attention to
    • hospital utilization
    • quality of life
    • use of palliative care

Clinical Course of Advanced Dementia

• Eligibility criteria
  – Age ≥ 60 + dementia
  – Cognitive Performance scale 5-6 (= MMSE of 5)
  – Global Deterioration scale stage 7 (range 1-7)
  – Availability of an English-speaking health care proxy
• Survival and clinical complications
  – 55% died; adjusted mean survival 478 days
  – Complications common:
    • Pneumonia 41%, febrile episode 53%
    • Eating problem 86%
    • Sentinel event in 9%, rare in last 3 mos life
Distressing symptoms:
- Dyspnea (>5 d.) 46%
- Pain (>5 d.) 40%
- Agitation 30%

Burdensome interventions in final 3 months:
- Parenteral therapy 29%
- Hospitalized 12%
  - Pneumonia 68%
  - Other infection 14%
- Emergency Department visit 3%
- Tube feeding 7%
Clinical Course of Advanced Dementia

- Hospice referral
  - Overall 22%
  - Among those who died:
    - 30% referred
    - 0-7d 26%
    - 8-90d 30%
    - 91-180d 17%
    - >181d 26%

- Health care proxies
  - 18% had received prognostic information from physicians.
  - 32% were informed by their physicians of probable complications

Bottom Line

- Advanced dementia is a terminal illness
  - Few patients died from acute events or other terminal diseases
  - Life expectancy was similar to metastatic cancer and stage IV heart failure

- Physicians do a poor job of communicating prognosis
  - Although the goal was comfort for 96%, physical suffering was common
  - When proxies were aware of prognosis, patients were less likely to receive burdensome care (OR=.12)
  - Infections and eating problems can be used to inform prognosis

Alzheimer’s is, in fact, like an insidious fog, barely noticeable until everything around has disappeared. After that, it is no longer possible to believe that a world outside fog exists.
Topics

- Dementia
- Falls
- Heart Failure
- (Back) Pain
- Advanced care planning

Which of the following is NOT a risk factor for falls in older adults?

A. Previous fall
B. Hearing impairment
C. Fear of falling
D. Taking > 4 medications
E. All are risk factors

Perceived and Physiologic Fall Risk

- Study
  - Prospective cohort study
  - To investigate the relationship between fear of falling (both too much or too little), physiologic fall risk and falls
- Sample
  - 494 community-dwelling Australians
  - Age 70-90, mean 78; 54% women
- Exclusion
  - Dementia, Parkinson’s, MS, other neuro disease
- Fall = 1 injurious or 2 non-injurious
## Fall Risk Results

- 30% reported falls in previous year; 43% fell in the 1 year follow up
- In multivariate analysis perceived & physiologic risk were independent predictors (p= 0.001)

<table>
<thead>
<tr>
<th>Odds ratio (95% CI) of fall in 1 year</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiological fall risk (physiological profile assessment)</td>
<td>1.23 (1.01 to 1.49)</td>
</tr>
<tr>
<td>Perceived fall risk (falls efficacy scale international)</td>
<td>1.29 (1.06 to 1.57)</td>
</tr>
</tbody>
</table>

## Four types of fallers

- **“Anxious fallers”**
  - Low physiologic, high perceived risk
  - More female, depressed, low QOL and executive function, high self-rated disability and neuroticism than ‘vigorous’ group (low/low)
  - No difference in exercise/activity between anxious & vigorous but twice as many falls
- **“Stoic fallers”**
  - High physiologic, low perceived risk
  - Younger, less depression, fewer meds, high QOL, more exercise, low self-rated disability, stronger and more coordinated than ‘aware’ group (high/high)
  - 82% remained unconcerned even after they fell
Bottom Line

- Almost 1/3 (31%) of older people inaccurately assess their fall risk
- Low fear doesn’t lead to risk taking behavior and may decrease falls
- Ask about fear of falling
- Use both physiologic and perceived risk to direct management
  - For ‘anxious’ and ‘aware’ fallers
    - CBT to address depression, fear, perceived disability
    - Increase exercise
  - For ‘stoic’ and ‘aware’ fallers
    - Fall risk reduction exercise programs

Topics

- Dementia
- Falls
- Heart Failure
- (Back) Pain
- Advanced care planning

All diseases run into one, old age.

Ralph Waldo Emerson
• It’s 2 AM. The ED calls because Mrs. B, a 94 y. o. patient of yours, has presented with new onset SOB and they need PMH. You turn on your computer and securely access Mrs. B’s record which reveals she has no significant PMH. She lives independently and comes in “for a check up” every 2 years “so someone will know me when I die.”
• The ED doc says Mrs. B is in SR at 92bpm with bilateral rales and bibasilar infiltrates on CXR. Her BNP is 672 but the ED doc is going with dx of pneumonia since all “seriously old” patients have high BNPs.

How useful is BNP in the very old?
• Two studies
  – Retrospective analysis 335 VA ED visits for SOB
  – 42 month prospective, observational, population-based study of 274 nonagenarians (Leiden 85+)
• Study questions
  – How do patient characteristics other than CHF affect BNP levels?
  – Is BNP a specific marker of cardiac disease in very elderly people independent of the presence of non-cardiac diagnoses?

Improving the utility of BNP
• 4 factors altered BNP levels
  • BNP cut-offs w/ 91% sensitivity for each factor:
    – 150 pg/mL in patients with AF
    – 449 pg/mL in patients with Cr ≥ 2mg/dL
    – 25 pg/mL in patients with BMIs 35 kg/m²
    – 184 pg/mL in patients aged 75
• Use of cut offs significantly improve dx with BNP x for BMI
• Regression model developed for pts with >1 factor
BNP in Nonagenarians

- BNP does not correlate with markers of poor health or functional status

Bottom Line

- Strong correlation between BNP and cardiac disease even in the old and very old
- Using a higher cut off improves sensitivity
- BNP levels useful independent of overall health and functional status
- Additional finding in Leiden Study
  - Elevated BNP is a marker for mortality in patients with (HR = 2.8) and without (HR = 3.5) cardiac diagnoses
  - What are we missing?
You know you're getting old when everything hurts. And what doesn't hurt doesn't work.

Topics
- Dementia
- Falls
- Heart Failure
- (Back) Pain
- Advanced care planning

SLW is a 75 yo woman with osteoporosis who comes to clinic c/o sudden onset low back pain while lifting a heavy box. Plain films shows a new L1 compression fracture.

• Which of the following may NOT be effective in relieving her pain?
  A. Calcitonin
  B. NSAIDS
  C. Vertebroplasty
  D. Opioids
Vertebroplasty

- Vertebroplasty procedures have doubled in the past 6 years
- Benefit claims:
  - Pain relief
  - Improved functional capacity
  - Limitation of spinal deformity
- RCTs until recently compared vertebroplasty to non-surgical therapy

Two studies in the NEJM in August 2009
- Both compared vertebroplasty to a sham procedure
- Combined total of 202 patients studied
  - 1-3 fx, fx <12 mo (9-18 average pain), VP or sham
- Primary Outcomes
  - No difference in overall pain/disability
  - No difference in pain at 1, 3 and 6 months
- Question: Were patients enrolled too late?
Vertos II Trial

- Open-label, randomized
- Unblinded; controls received usual care, not sham
- MRI confirmed fractures present < 6 weeks
- 431 eligible patients, mean age 75, 70% female
  - 229 spontaneous pain relief
  - 202 randomized “persistent pain”
- Average pain duration at surgery = 4 weeks
- Outcome measures: pain relief at 1mo & 1yr
- Results: faster and greater pain relief with VP


Bottom Line

- If useful, vertebroplasty should be done sooner rather than later (but not too soon!)
- Important to remember
  - Most patients improve with just analgesia
  - Vertebroplasty is not without its hazards
- These results should at least add to our discussion with patients about the risks and benefits of this procedure
- Stay tuned for results of trials comparing vertebroplasty and kyphoplasty

Spinal Stenosis: Do No Harm

- Lumbar decompression can be better than conservative care in SS with radicular pain
- Increase in rates of complex v. simple fusions
- Study of Medicare data 2002-7
  - 15x increase in complex fusions (1% -> 15%)
- 2007 cohort of 32,000 patients
  - CF higher complications (5.2% v. 2.1%)
  - CF 2x higher mortality (0.6% v. 0.3%)
  - CF 3x the cost
  - Surgeon reimbursement: up to 10x
- Prospective trials needed; caution for now

Deyo RA et al. JAMA 2010 Apr 7; 303: 1259-1265.
And in the end, it's not the years in your life that count. It's the life in your years.

Abraham Lincoln

Topics

• Dementia
• Falls
• Heart Failure
• (Back) Pain
• Advanced care planning
Advance Care Planning

- Prospective RCT in single university hospital in Australia
- 309 medical inpatients ≥ 80 yo followed 6 mos
  - Facilitated ACP vs. usual care
  - Trained RNs and allied health workers facilitated
  - Intervention based on “Respecting Choices”
    - reflect on goals, values, religious and cultural beliefs
    - consider future medical treatment preferences
    - appoint a surrogate
    - document wishes for end of life care
- Doctors participated prn so pts understood their illness, tx options and likely prognosis

Advance Care Planning

- ACP done by 125 intervention patients (81%) and 1 control patient
  - 84% expressed wishes, appointed surrogate or both
- 56 patients dead at 6 months

<table>
<thead>
<tr>
<th></th>
<th>EOL wishes known and followed</th>
<th>Impact of events scale</th>
<th>Family very satisfied with death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>96% (25/26)</td>
<td>5</td>
<td>83% (24/29)</td>
</tr>
<tr>
<td>Control</td>
<td>30% (8/27)</td>
<td>15</td>
<td>48% (13/27)</td>
</tr>
</tbody>
</table>

p<0.001
p<0.001
P=0.02

Qualitative Data:

Control group quotes

He should have had more say. He couldn’t do the rehabilitation. He knew he was dying, but the doctors didn’t seem to get it.

Mum didn’t want heroics. She knew she was dying. I was horrified when I heard she got 45 minutes of CPR. She did not want it. All anyone had to do was ask. I feel very hurt and hurt for mum and my sister.
We felt really comfortable making decisions because we had discussed it with him.

We had a clear plan so could just relax and enjoy time with dad.

**Bottom Line**

- Code discussions ≠ ACP
- Most pts welcome ACP and expect health professionals to initiate it
  - Increased satisfaction with hospital stay (p<0.001)
- ACP increases
  - Chances that wishes will be known and followed
  - Patient satisfaction with care on hospital admission
  - Family’s sense of patient’s satisfaction with death
- Most pts did not want life prolongation
  - No difference in survival rates at 6 months
  - Large potential savings in suffering and $

**Topics**

- Dementia
  - Risk, Driving, Late stage
- Falls
  - New risk factor
- Heart Failure
  - BNP
- (Back) pain
  - Vertebroplasty and spinal fusion
- Advance Care Planning