How Can You Tell If Their 80 Is The New 60...

Frailty: testing in multiple spheres of ADLs
- Impaired physical activities
- Reduced mobility
- Balance
- Motor strength
- Motor processing
- Cognition
- Nutrition
- Endurance

Disabled
Frailty does not include comorbidities
Examine the Patient!

- General: ambulation, gait speed, dehydration, LE edema, weight loss, *note it!
- Outlet obstruction: high-grade prolapse, *prostate, impaction, rectal tone
- Skin: Chemical dermatitis, vaginal atrophy
- Behavioral assessment: Voluntary pelvic floor contraction
- Neurologic deficits: able to give their history, *recall

* > Grade 2; To introitus or greater

Assessing The Elderly For Anesthesia

Cardiac Risk Assessment determines need for further assessment:

- Major/Current: severe arrhythmias or valvular disease, uncompensated heart failure, unstable angina

- Risk of MACE (major adverse cardiac events): ACS-NSQIP risk calculator [https://riskcalculator.facs.org/RiskCalculator/](https://riskcalculator.facs.org/RiskCalculator/)

### Scoring the Duke Activity Status Index (in METs)

<table>
<thead>
<tr>
<th>Question</th>
<th>Score Only for Answers: “Yes, With No Difficulty.”</th>
<th>MET Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Take care of yourself, that is, eating, dressing, bathing, and using the toilet?</td>
<td></td>
<td>0.6</td>
</tr>
<tr>
<td>2. Walk indoors, such as around your house?</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>3. Walk a block or two on level ground?</td>
<td></td>
<td>0.8</td>
</tr>
<tr>
<td>4. Climb a flight of stairs or walk up a hill?</td>
<td></td>
<td>1.6</td>
</tr>
<tr>
<td>5. Run a short distance?</td>
<td></td>
<td>2.3</td>
</tr>
<tr>
<td>6. Do light work around the house like dusting or washing dishes?</td>
<td></td>
<td>0.8</td>
</tr>
<tr>
<td>7. Do moderate work around the house like vacuuming, sweeping floors, carrying in groceries?</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>8. Do heavy work around the house like scrubbing floors, or lifting or moving heavy furniture?</td>
<td></td>
<td>2.3</td>
</tr>
<tr>
<td>9. Do yard work like raking leaves, weeding or pushing a power mower?</td>
<td></td>
<td>1.3</td>
</tr>
<tr>
<td>10. Have sexual relations?</td>
<td></td>
<td>1.5</td>
</tr>
<tr>
<td>11. Participate in moderate recreational activities, like golf, bowling, dancing, doubles tennis, or throwing baseball or football?</td>
<td></td>
<td>1.7</td>
</tr>
<tr>
<td>12. Participate in strenuous sports like swimming, singles tennis, football, basketball or skiing?</td>
<td></td>
<td>2.1</td>
</tr>
</tbody>
</table>

**Total Score**

**Source:** Cardisource © 2018 by the American College of Cardiology Foundation
Common Geriatric Problems

- LUTS, especially bothersome is nocturia
- UTIs
- Sexual dysfunction
- Renal Transplantation: increasing ESRD
- Prostate Cancer: affecting screening/treatment
- Bladder Cancer
- “Incidentalomas” incl renal and adrenal masses, but also labs, PSA screening, cytologies

LUTS: Describe As Symptom, Not As An Etiology

Storage
- Daytime frequency
- Nocturia
- Urgency
- Incontinence

Voiding
- Hesitancy (not “prostatism” nor “BPH”)
- Straining
- Stream slow, intermittent
- Hesitancy
- Dribbling, esp. terminally

In the elderly, the diff dx must include UAB, nocturnal polyuria, loss of renal concentrating ability near the top of the differential.
Question #1

An elderly man with LUTS has a large prostate with this uroflowometry:

A. Has BPH.
B. Has LUTS, NOS.
C. Has weak detrusor power.
D. Has BPH and weak detrusor.

AUR

- Painful, palpable or percussable, unable...
- Associated: anesthesia, pain, alcohol, travel, constipation, GU instrumentation, UTI, overdistension
- Studies: BUN/Cr, U/A. Don’t get a PSA acutely; PFS to differentiate BOO from UAB
- Treatment:
  - Decompress and monitor (how long?): hematuria in 2-16%, post-relief of obstruction diuresis in 0.5% to 52% (usually AUR on CUR)
  - α-blocker in all men: TWOC successful in 60%*
Chronic Urinary Retention:
Management and outcomes for non-neurogenic CUR longitudinally are poorly defined. Consensus definition as PVR > 300 for >6 months, documented on two or more occasions.

Assess risk and symptoms to determine recommended treatment.
Underactive Bladder “UAB”

- LUTS symptoms are non-specific.
- BOO can progress to UAB, unknown risk factors and incidence.
- UAB may be thought of the presenting clinical syndrome with poor detrusor contractility the UDS diagnosis.

![Diagram showing overlap of Underactive Bladder and Chronic Urinary Retention]

An elderly woman presents with chronic urinary retention; she should undergo a UDS to determine if this is secondary to outlet obstruction if:

A. The post void residual is greater than 1 l.
B. She has had a prior outlet procedure, such as a sling.
C. She is less than 65 years old.
D. She is asymptomatic and this was an incidental finding.

Question #2
Urge, Urge Incontinence is a Symptom, Not a Diagnosis.

- Obstruction in women produces storage symptoms (urge, urge incontinence) more commonly than voiding symptoms.

- “Neurogenic bladder” occurs only in the setting of a defined neurologic disease that is associated with those LUTS symptoms, eg. spinal cord injury, multiple sclerosis, post- CVA, etc. Don’t use NGB for urge, urge incontinence symptoms.

- **Overactive Bladder is, by definition, idiopathic.** And not neurogenic! Don’t use OAB when you mean NGB if the patient has relapsing remitting MS with significant storage symptoms.
An elderly woman has urge and urge incontinence. The finding most consistent with the diagnosis of OAB is:

A. She has hematuria.
B. She has Parkinsonism.
C. She is poorly ambulatory due to severe osteoarthritis and leaks on the way to the bathroom.
D. Her post void residual volume is 250 cc.
E. Her daughter is the only one complaining of the leakage, the patient is unconcerned.
Impact of High Grade Incontinence

- Social withdrawal: affecting sense of hygiene, odor, especially when pads insufficient.
- Disturbed sleep.
- Fall risk.
- Chemical Dermatitis, decubitus risk.
- Always ask about coexisting fecal incontinence as patients will not volunteer this information.

With increasing longevity, there’s a longer time to live with poor QOL.

Medications and the Elderly

The Beers Criteria for Potentially Inappropriate Medication (PIM) use in Older Adults AUA White Paper 2015

- Common meds included as PIMs are long-term nitrofurantoin, as well as $$\alpha$$-1 blockers, antimuscarinics, sedatives...
- HEDIS® HRM list of these PIMs has been implemented as a negative quality indicator, though not originally intended as such.
Polypharmacy and the Elderly

• Average elderly patient is on 2-6 prescription meds and 1-3 OTCs.
• Anticholinergics, anesthetics, analgesics, sedatives, antidepressants, all neuroleptics are commonly associated with weakening detrusor function.
• Antihypertensives, diuretics, ACE inhibitors with increase in nocturia, urge, urge incontinence symptoms.

Hall SA, Chiu GR. Commonly Used antihypertensive and LUTS: Results from the BACH Survey, BJU Int 109, 2012

• Pharmacologic changes with Age:
  – Decreased muscle mass, increased body fat → decrease in total body water. [Lipid-soluble drugs] will ↑, [water-soluble drugs] will ↓.
  – Protein binding usually ↓, [barbiturates, benzodiazepines, opioids] ↑.
  – Decreased renal function will ↓ clearance of most antibiotics, X Fosamycin which can be used with Cr Cl of 20 ml/mg or higher.

Ex. Antimuscarinics & Impaired Cognition

• Commonly UI & dementia coexist.
• Dementia is underdx by non-geriatricians, esp. if mild!
• Antichol more likely to be used in dementia.+
  • Should not be used concomitantly with cholinesterase inhibitors (the dementia, Parkinson’s drugs, sleep disorders)
• Avoid antimuscarinics b/c ↑vulnerability to cognitive & functional AE. *

*Gormley AE, Lightner DJ, OAB, AUA Guideline 2012; Beers Criteria AGS, 2015
+Green AN, Use of Antimuscarinics, 2017
Are our elderly patients are missing out on the benefits of antimuscarinics? Consider, in those best of all possible worlds drug trials…

<table>
<thead>
<tr>
<th>Drug</th>
<th>Continence—attributable events per 1,000, n (range)</th>
<th>Continence—number needed to treat (NNT), n (range)</th>
<th>Clinically meaningful improvement—attributable events per 1,000, n (range)</th>
<th>Improvement NNT, n (range)</th>
<th>Discontinuation for adverse events compared to placebo (%)</th>
<th>Dry mouth compared to placebo (%)</th>
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</thead>
<tbody>
<tr>
<td>Danitramin</td>
<td>NA</td>
<td>NA</td>
<td>117 (57–177)</td>
<td>9 (6–18)</td>
<td>46/13 (%)</td>
<td>22/5.6</td>
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<tr>
<td>Pirenidone</td>
<td>100 (64–183)</td>
<td>9 (6–16)</td>
<td>167 (95–224)</td>
<td>6/10 (4–11)</td>
<td>10/5 (4–11)</td>
<td>34/15</td>
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<tr>
<td>Oxybutinin</td>
<td>102 (210–216)</td>
<td>10 (7–14)</td>
<td>102 (212–212)</td>
<td>5 (4–6)</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Tolterodine</td>
<td>50 (60–70)</td>
<td>50 (60–70)</td>
<td>6/10 (4–11)</td>
<td>5.0/4.0</td>
<td>27/7.0</td>
<td>18/12.0</td>
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<tr>
<td>Tresptomide</td>
<td>91 (70–93)</td>
<td>91 (70–93)</td>
<td>91 (70–93)</td>
<td>6/10 (4–11)</td>
<td>40/3 (10–30)</td>
<td>18/12.0</td>
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</table>

*The figures relate to available anticholinergic agents and head-to-head comparisons with placebo or other anticholinergics. Attributable events represent the difference between placebo response and active drug response.*

Neurology and Urodynamics DOI: 10.1002/nau

Continued:
What about Mirabegron in BPW trials?

SCORPIO: Achieving Zero incontinence @ 12 wks:
- Mirabegron 50 mg 45.1%
- Tolterodine 4 mg 47.3%
- Placebo 40.5%

TAURUS: 1 yr,
- Not designed to demonstrate differences, efficacy “appears maintained”
- A safety study
Pharmacotherapy Trials are “BPW” Results

- Motivation of the patient is high
- Intensive follow-ups are required
- Generally of moderate severity for entry
- Excluded comorbidities including diseases with failure to concentrate, cardiac and vascular disease, frailty, immobility, psychiatric disorders, polydipsia...

These trial results will not be achieved in our general urology patients! Let alone the geriatric ones!

Primary treatment of bothersome urge, urge incontinence, like OAB, is also behavioral.

- Education on normal physiology.
- Fluid intake, fruits, vegetables, fluid schedules.
- Restore/maintain general health, weight, and bowel function.
- Cognitive and mobility issues: Timed and prompted voiding.
- Pelvic floor muscle re-education: especially Quick Flicks for urge suppression +/- formal biofeedback.
Bladder Diary at 1st visit! : Why volumes, not just time…

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<tr>
<th>Time</th>
<th>Volume</th>
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<tr>
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<td>200 cc</td>
</tr>
<tr>
<td>8:15am</td>
<td>75 cc</td>
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<tr>
<td>9:00am</td>
<td>100 cc</td>
</tr>
<tr>
<td>12:30pm</td>
<td>125 cc</td>
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<tr>
<td>2:00pm</td>
<td>75 cc</td>
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<tr>
<td>3:15pm</td>
<td>75 cc</td>
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<td>4:30pm</td>
<td>100 cc</td>
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<tr>
<td>8:00pm</td>
<td>125 cc</td>
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<tr>
<td>10:30pm</td>
<td>100 cc</td>
</tr>
<tr>
<td>3:00am</td>
<td>175 cc</td>
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<table>
<thead>
<tr>
<th>Time</th>
<th>Volume</th>
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<tbody>
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<td>8:15am</td>
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<tr>
<td>10:30pm</td>
<td>500 cc</td>
</tr>
<tr>
<td>3:00am</td>
<td>800 cc</td>
</tr>
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</table>

Setting Realistic Expectations

- Understanding Bladder Physiology and their bladder.
- Cure Rates with OAB, the easier one than poor cognition…
  - Studies report mean change, not generally cure.
  - These are generally intact and not declining adults.
  - Yet, in best practices, ex. TAURUS and SCORPIO trials, “% of responders incontinence at baseline and became dry post-baseline was numerically (although not statistically significantly) higher for mirabegron 50 and tolterodine than for placebo” (emphasis mine)
- Commitments over time, multiple modalities, costs.
- Demonstrable improvements for the patient: Use of validated Questionnaires and bladder diaries.

The elderly will be more challenged with any and all of these expectations placed upon them.
When you assess the bladder diary, surprise!

How many recurrent stone formers will consume over 4.9 l in 24 h to avoid another stone?

Fluid Schedules: based on FBC
Timed Voiding: based on inter‐void intervals

OAB and Non‐Compliance with Pharmaceuticals

Drug Discontinuation: Response:

#1. Lack of efficacy
   a. Duration of use
   b. Switch (1° to reduce TEAEs)
   c. Start and/or continue behavioral tx! *

2. TEAEs
   Use extended release, treat AE

3. Cost
   Use inexpensive generics

* 13 clinical trials, 1.8K patients, pharmacotx better than retraining alone, but both better than pharmocotx alone. Alhasso et al, Cochrane ,2006
OAB and Cortical Function

- **OAB is defined as idiopathic.**
- Frontal micturition center which is normally suppressive is deactivated in OAB.
- Tolterodine-induced changes in NIRS-UDS improved prefrontal cortex activity and reduced bladder urge sensations. Sakakibara et al, NeuroUrol 2014
- NB- requires higher brain function to have socially acceptable bowel and bladder & get out of diapers.
- “Poor short-term memory? Don’t expect continence.”

Will You Recognize Normal Pressure Hydrocephalus?

- Potentially treatable cause of incontinence.
- Triad: Typical gait “magnetic feet”, slowness of thought/actions, urinary incontinence
- If you suspect it, refer it!
Nocturia: ICS Definition is at Least Once After Sleep

- Nocturnal polyuria often a manifestation of systemic disease, i.e. cardiac, renal disease, vascular insufficiency, sleep disorders, BPO, late day polydipsia.

- Global polyuria secondary to global polydipsia!

Weiss JP, Lee, CL and Blaivas JG. Nocturia in Adults, AUA Update 27, 2008

Question #4

Nocturnal Total Urine Volumes:

A. Decrease with age.
B. Increase with age.
C. Are normally larger than diurnal volumes.
D. Are normally greater than 35% of total 24 h volume.
Dysfunctional Voiding (DFV)

- Hallmark is urge, frequency; women > men, all ages.
- Both storage and voiding symptoms
  - Intermittency or fluctuating due to non-neurologic involuntary intermittent contractions of the pelvic floor. Can be highly obstructive.
  - Disturbance of coordination & induction of voiding by PMC, perhaps “abnormal guarding” (?) → sphincter and detrusor dysfunction.
    - In the elderly, can be 2 distributions leading to sensation of urge.
  - Associated (not causal) increase in UTIs.

More Tidbits: Lichen Sclerosus:

- Chronic inflammatory dermatitis, unknown etiology, immune components likely.
- Can be obstructive. In both men and women.
- 3 to 10: 1 W:M.
- Two incidence peaks: premenstrual & elderly. Estimated to occur in 1 in 30 nursing home female residents.
- White, intensely pruritic papules coalescing into plaques → adhesive and obliterator scarring.
- 5% with SCC, biopsy if ulcerated.
- 1 tx with clobetasol, gentle hygiene.

Lichen sclerosus demonstrating classic hourglass or figure 8 vulvar and perianal distribution. Courtesy of Wilford Hall Medical Center slide files, and emedicine. Medscape. Accessed 8-12-17.
AUA Guidelines are the distillation of the best evidence and are a major emphasis in resident education, board certification, recertification and MOC.

<table>
<thead>
<tr>
<th>AUA Guidelines Statement revision 2014</th>
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<tbody>
<tr>
<td>Evidence Strength A (High Certainty) ²</td>
</tr>
<tr>
<td>Strong Recommendation¹</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Moderate Recommendation²</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Conditional Recommendation (No apparent net benefit or harm)</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

Statement strength is linked to the evidence strength, i.e.
1. Applies to most patients in most circumstances (MCMC).
2. Future research is unlikely to change confidence.
4. Better evidence is likely to change confidence.

This is my thank you dance!

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