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*

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/)

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.
ARS Q1:

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.

Answer: B

B. Has LUTS, NOS

• The uroflow is a screening study and does not make the diagnosis of either obstruction (from any source) nor a weak detrusor.
• This represents LUTS, but can not further be determined why...could be UAB or BOO or both.
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*. 
ARS Q2:

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

Answer: B

B. She has had a prior outlet procedure, such as a sling.

• A prior outlet procedure is a common cause of outlet obstruction in women. None of the others mandate a UDS.
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.*
ARS Q3:

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
Answer: C

C: She is poorly ambulatory due to severe osteoarthritis and leaks on the way to the bathroom.

Bladder is firing before she can reach the toilet. Although a large mobility component is present, this is OAB. Management of the mobility component will be a major part of her treatment plan.

• The patient with hematuria may have these irritative symptoms due to a bladder cancer and requires a hematuria evaluation. Not OAB.
• The patient with a known neurologic disease that commonly produces storage symptoms has a neurogenic bladder. Not OAB.
• The patient with an elevated PVR may have UAB leading to overflow incontinence, a weak detrusor. Not OAB.
• OAB is a symptom-complex wherein symptoms are bothersome to the patient.

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 α-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

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, 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…
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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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.

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

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?

Drink lots of water.

Is vague guidance, at best.
### OAB and Non-Compliance with Pharmaceuticals

#### Drug Discontinuation:  

1. Lack of efficacy  
2. TEAEs  
3. Cost

#### Response:  

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

2. TEAEs  
3. Cost

Use extended release, treat AE  
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_  

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### 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.”

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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!
ARS Q4:

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

Answer: B

B. Increase with age

• Nighttime urine volumes increase with age, but are only rarer larger than diurnal volumes. Urine volumes at night >35% of total 24 h volumes defined nocturnal polyuria and is not normal.
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” (?)→spincter and detrusor dysfunction.
    • In the elderly, can be 2⁰ to uninhibited detrusor contractions leading to sensation of urge.
  • Associated (not causal) increase in UTIs.

More Tidbits: Lichen Sclerosus:

No longer called BXD, nor LS et atrophicus.

• 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 obliterative scarring.
• 5% with SCC, biopsy if ulcerated.
• 1⁰ 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.
| Statement strength | Evidence Strength A  
(Moderate Certainty) | Evidence Strength B  
(Moderate Certainty) | Evidence Strength C  
(Low Certainty) |
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<td>Balance between Benefits &amp; Risks/Burdens unclear</td>
<td>Alternative strategies may be equally reasonable</td>
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Net benefit (or net harm) is substantial

Best action depends on individual patient circumstances

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.

AUA Guidelines are the distillation of the best evidence and are a major emphasis in resident education, board certification, and MOC.

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