Geriatric Urinary Incontinence

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UI: The Problem

Prevalence in elderly $\geq 33\%$
Morbidity substantial
Costs $> $83 billion* annually

Coyne KS. J Manag Care Phar 2014;20:130
Geriatric UI and PCP

- UI *never* normal, even at ↑age, ↓MS, NH
- Caused/exac by *medical* diseases, drugs
- Amenable to *medical* Rx and even cure
- Yet, most UI pts are unknown to PCP
  ∴ PCP’s role is crucial
Case

An 88 yo F with Parkinson’s disease suffered a hip frx → confusion, Rx with haloperidol. She became incontinent.

O/E: In wheelchair, Parkinsonian, with CHF, impaction, bladder distention, atrophic vaginitis
Two Months Later...

- Home
- Mentally-intact
- Ambulatory
- Continent

How?
Continence Requires

- Mentation
- Motivation
- Mobility
- Manual Dexterity
- Urinary Tract Function
LUT Changes with Age

**Increased**
- Involuntary contractions
- Nocturnal U.O.
- Prostate size
- PVR

**Decreased**
- Bladder sensation
- Urethral resistance (in ♀)
- Contractility

Resnick *NeuroUrodyyn* 1996, Pfisterer *JAGS* 2006
Principles of Geriatric UI

Aging *predisposes* to UI
Diseases and drugs *precipitate* it
Thus, treatable causes *outside* LUT are more likely

May Rx UI *without* need to Rx LUT!
Transient Causes

- D Delirium
- I Infection (sx UTI)
- A Atrophic urethritis/vaginitis
- P Pharmaceuticals
- E Excess excretion
- R Restricted mobility
- S Stool impaction
Drugs and UI

Long-acting sedative/hypnotics
“Loop” diuretics
Anticholinergic agents
Adrenergic agents
Drugs causing fluid accumulation
  – CCBs, ‘glitazones, NSAIDs, Parkinsons, gabapentin/pregabalin
ACE Inhibitors
Transient Causes

D  Delirium
I  Infection (sx UTI)
A  Atrophic urethritis/vaginitis
P  Pharmaceuticals
E  Excess excretion
R  Restricted mobility
S  Stool impaction
Excess Excretion

- Excess Intake
- Diuretics, Alcohol
- Metabolic (glucose, Ca$^{+2}$, DI)
- Edematous states
  - Congestive heart failure
  - Venous insufficiency
  - Low albumin
  - Drugs (NSAIDs, CCBs, Parkinsons)
Transient Causes

- D Delirium
- I Infection (sx UTI)
- A Atrophic urethritis/vaginitis
- P Pharmaceuticals
- E Excess excretion
- R Restricted mobility
- S Stool impaction
Benefit of Rx Transient Causes

• Cure UI in 1/3 of older patients
• Improves UI in the remainder
• ↑ patients’ responsiveness to further Rx
• Improves other problems and QoL
  – e.g., Rx of atrophic vaginitis
    • ↓ recurrent cystitis
    • ↓ dyspareunia
Causes of Established UI

- Overactive Detrusor/OAB
- Underactive Detrusor
- Stress Incontinence
- Outlet Obstruction
Established UI

Storage
- Overactive Detrusor
- Stress Incontinence

Emptying
- Underactive Detrusor
- Urethral Obstruction
Serious Associated Conditions

- Brain/spinal cord lesions
- Bladder/prostate carcinoma
- Bladder stones
- Hydronephrosis
History

Description of symptoms
DIAPERS causes
Functional assessment
Voiding diary
<table>
<thead>
<tr>
<th>Time</th>
<th>Wet/Dry</th>
<th>Void</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00</td>
<td>D</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>W</td>
<td>50</td>
<td>Dishwashing</td>
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<tr>
<td>12:00</td>
<td>D</td>
<td>125</td>
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<tr>
<td>14:00</td>
<td>W</td>
<td>40</td>
<td>Coughed</td>
</tr>
</tbody>
</table>
Stress Test

Bladder feels full *but* no precipitancy
Relaxed
Strong, *single* cough
Instantaneous leak/cessation?
Replicates symptom?
If *negative*, bladder volume >150 ml?
Examination

Stress test
Bladder distention (±)
Pelvic exam
Rectal exam
Edema/CHF
Neurologic (U/LMN)
Lab Tests

- Metabolic survey
- BUN/Cr
- PVR
- Urinalysis, culture

- Flow rate*
- Renal ultrasound*
- Cytology*
- Cystoscopy*

* in selected cases
Empiric Dx and the PCP

After excluding transient causes
- If retention (or PVR >100), consider referral
- Otherwise, cough stress test (ST). Then,

**Women**
- If ST negative and PVR <50 ml, Rx as DO/OAB
- If ST positive and PVR <100 ml, Rx as SI

**Men**
- If ST negative and PVR <50 ml, behavior Rx
- If ST positive, refer
Most Frequent Causes

- Overactive Detrusor
- Stress Incontinence
- Outlet Obstruction
- Underactive Detrusor
Overactive Detrusor/OAB

50-67% of geriatric UI
“Urge” incontinence
Frequent, periodic voids
PVR generally low
Normal anal reflexes/sensation
May be a/w SI, urethral obstrxn
Rx Principles

• LUT only *one* risk factor

• Minor improvement in many domains reaps major gains
LUT Abnormality vs. UI

# Leaks/Day

Young

DO

Old

Drugs
Diabetes, Ca$^{+2}$
CHF/Edema
Mobility
Impaction

Rx General

- Improve toilet access/schedule
- Adjust fluid excretion
- Improve mobility
- Treat disease outside LUT:
  - e.g., CHF, depression, ↓BP
- Stop other medications
Case

An 88 yo F with Parkinson’s disease suffered a hip frx → confusion, Rx with haloperidol. Incontinence developed.

O/E: In wheelchair, Parkinsonian, with CHF, impaction, bladder distention, atrophic vaginitis
Case - 2

Decompressed bladder
Disimpacted
Diuresed
Discontinued haloperidol
Added estrogen, Sinemet®
Case - 3

- Parkinson’s remits
- CHF resolves
- Bowels regularize
- Mobility improves
- UI lessens
Case - 4

Precipitant UI
Nocturia x 4
No stress sx
Stress test negative
PVR = 75 ml
Urology Department. Can you hold?
Detrusor Overactivity: Rx

Anticholinergic Bladder Relaxants
- Oxybutynin (Ditropan® [IR, XL, patch, gel])
- Tolterodine (Detrol® [LA])
- Darifenacin (Enablex®)
- Solifenacin (Vesicare®)
- Trospium (Sanctura® XR)
- Fesoterodine (Toviaz®)

Beta-3 Agonist: Mirabegron (Myrbetriq®)

DDAVP? **NO**

Neuromodulation (SNS/PTNS)?

Botulinum A toxin?
Therapeutic Myths

- Bladder relaxants → ↓ MSE?
  - Most evidence indirect, w/o clinical correlates
  - 40 yrs oxybutynin → few case reports; tolterod ≡
  - OPERA trial: <1% for each group; all mild
  - MCI: oxy/solifenacin = no problem (Wagg, 2013)
  - Frail/SNF: well-toler. (Lackner ’08; DuBeau ’14)

- “Can’t use bladder relaxants w/ChEIs”
- “Elderly less responsive than young pts”
Bottom Line

• UI is common and under detected
• Never normal, regardless of age, mobility, and cognition, even in NH pts
• Causes multifactorial and beyond LUT
• With stepwise, persistent approach, UI is usually treatable – often curable – without complex tests or surgery