Updates in Urinary Incontinence

Lisa Ward, MD, MSPH, MS
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UCSF Family Medicine Board Review Course
Outline

• Definitions of incontinence
• Work up with focused examination
• Management
• Treatment
• Surgical Options
Impact of Incontinence: Quality of Life

• Relationships:
  – Social
  – Interpersonal
  – Sexual
• Activities of Daily Living
• Work
• Mood
  – Depression
  – Self-concept
  – Self-assessed health status
  – Sleep
• Cost of continence supplies
Types of Urinary Incontinence

Overflow
- Neuro
- Obstruction
  - Medications
  - Diabetic Nephr
  - Sp Cord Injury
  - Pelvic Surgery
  - Bladder CA

Stress
- Urethral Hypermobility
- Sphincter Deficiency

Urge
- No Leak
- Leak
  - UTI
  - IC
  - Detrusor Overactivity
  - Neurologic

Mixed

Functional
- Pain
- Mobility
- Dexterity

IC=Interstitial Cystitis
MS=Multiple sclerosis
Definitions of Incontinence

- **Stress**
  - Involuntary leakage of urine with effort or increased intra-abdominal pressure
  - Triggers
    - Cough
    - Sneeze
    - Laugh
    - Exercise
Definitions of Incontinence

- **Urge**
  - Urgent, involuntary need to urinate
  - Cannot be deterred
  - Triggers
    - Running water
    - Key in the door
    - Hand washing
    - Going into the cold
  - Drops to soaking
Definitions of Incontinence

• Mixed

- Involuntary leakage of urine with a sense of urgency and exertion
- Predominance of urgency or exertion may vary
- Most common kind of incontinence in women
Definitions of Incontinence

• Overflow

• Involuntary leakage of urine that is continuous slow leak
• “Overflow Incontinence”
• Incomplete bladder emptying
• Symptoms
  – Dribbling
  – Intermittent or continuous
  – Weak stream
  – Hesitancy
  – Nocturia
  – Frequency
Etiology of Overflow Incontinence

• Who: older women, 5-10% of incontinence
• Detrusor underactivity
• Bladder outlet obstruction (uncommon in women)
  – Scarring from previous anti-incontinence surgery
  – Bladder neck distortion due to pelvic organ prolapse
  – Suprasacral spinal cord injury that creates bladder contraction with sphincter contraction
Definitions of Incontinence

• Functional

• Involuntary leakage of urine that is worsened by mobility or access

• Think about
  – Joint pain
  – Use of canes, walkers or wheelchairs
  – Coordination
  – Habitus
  – Home environment
  – Access to toilet
Physical Exam-1

- CV: gallop, murmur, rales, pedal edema
- Abd: masses, tenderness (not sensitive for bladder distension)
- Extremities: ROM, joints, edema
- Neuro:
  - Perineal sensation, rectal tone, anal wink, bulbocavernosus reflex (sacral nerve integrity)
  - Vibratory sense, sensation in extremities (peripheral neuropathy), DTRs
Physical Exam-2

- **GYN:**
  - Vaginal mucosa atrophy, infection or inflammation
  - Introitis: narrowing, posterior synechia, vault narrowing
  - Urethral obstruction like a caruncle
  - Urethral swing with cough (urethral hypermobility)
  - Bladder prolapse or cystocele anteriorly
  - Rectocele posteriorly
  - Bimanual exam for masses, organomegaly, or tenderness
  - Rectal exam for occult lesions, tone, impaction
Laboratory Testing

- Urinalysis-infection, hematuria
- Urine culture-sx, bleeding, UA suspicious
- Post void residual-sx of urinary retention
- Urine cytology-if hematuria, pelvic pain
- Vitamin B12-if suspected neuropathy
- Glucose/a1c-if suspected diabetes
Consider Referral to Urogynecology

- Persistent symptoms despite adequate therapeutic trial, especially severe urge incontinence unresponsive to several anti-muscarinic medication trials
- Uncertainty in diagnosis and inability to develop a reasonable treatment plan based on the evaluation
- Significantly elevated PVR that does not resolve after treatment of possible precipitants
- Prior pelvic surgery, pelvic cancer, or pelvic irradiation
- Evaluation for surgical treatment for bothersome stress incontinence
Immediate Referral to Urogynecology

- Incontinence with abdominal and/or pelvic pain
- Hematuria with no UTI suspected fistula
- Complex neurological conditions
  - Parkinson disease
  - Spinal cord injury
  - Suspect normal pressure hydrocephalus
- Abnormal exam findings
  - Pelvic mass
  - Symptomatic organ prolapse beyond the hymen
Treatment for Urinary Incontinence

- Surgery
- Medication
  - Estrogen
- Behavioral
- Lifestyle
Lifestyle Interventions

- Weight loss and stress incontinence
  - 338 overweight and obese women
  - Reduction in clinically relevant incontinence defined as a 70% reduction in episodes
    - ↓ in stress-incontinent episodes (p=0.009)
    - ↓ in urge-incontinent episodes (p=0.04)

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Activity</th>
<th>Mean Weight Loss (kg)</th>
<th>Incidence of Weekly Incontinence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervent’n</td>
<td>6 month intensive weight loss program</td>
<td>7.8 kg</td>
<td>-47%</td>
</tr>
<tr>
<td>Control</td>
<td>Group education</td>
<td>1.5 kg</td>
<td>-28% (p=0.01)</td>
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</tbody>
</table>

Lifestyle Interventions

- Weight loss and stress incontinence
  - ~2000 women with DM
  - Mean age 50 years, BMI 35 kg/m²
  - 3 year follow-up

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Weight Change</th>
<th>Odds of Weekly Incontinence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle</td>
<td>-3.4 kg</td>
<td>0.76 (95% CI 0.61-0.95)</td>
</tr>
<tr>
<td>Metformin</td>
<td>-1.5 kg</td>
<td>1.09 (95% CI 0.87-1.36)</td>
</tr>
<tr>
<td>Placebo</td>
<td>-0.5 kg</td>
<td>X</td>
</tr>
</tbody>
</table>

Brown JS, etc. Diabetes Prevention Program Research Group, Diabetes Care. 2006;29(2):385
Behavioral Interventions:
Dietary Triggers for Urge Incontinence

- Coffee & tea
- Alcohol
- Carbonated beverages
- Citrus fruit & juices
- Tomato products
- Chocolate
- Artificial sweeteners
Behavioral Interventions for Urge Incontinence

- Use of incontinence pads
- Reduce volume and type of fluid intake
- Voiding interval change
  - Decreased interval (stress)
  - Increased interval (urge)
  - Scheduled voiding (urge and mixed)
  - Voiding diaries
Behavioral Interventions-Kegel’s

1. Turn off flow: Quick repetitions of fast fibers
2. Sphincter tone: Hold 10 seconds, 20 reps, twice a day, 3 months
Behavioral Interventions-Kegel’s

• Kegel’s\(^1\)
  – 38% cure for pure stress incontinence
  – 3 months of exercises
  – Intervention is patient ed handout

• Kegel’s with weighted cone\(^2\)
  – Biofeedback with increasingly heavy weights

• Electrical stimulation of pelvic floor\(^3\)
  – Cure or improvement in 48% of women
Medication: Estrogen for Prevention of Urge Incontinence

• HERS
  – 1208 women without UI at baseline
  – Sub-group of HERS
  – Mean age 67 years
  – All had heart disease, all had uterus

  – Higher rate of NEW Stress Incontinence and Urge Incontinence in women taking HT
Medication: Estrogen for Prevention of Urge Incontinence

- WHI
  - Women with no incontinence at baseline
  - Sub-group analysis of WHI
  - 9180 women
  - Estrogen/Progestin and Estrogen Only arms

- In E/P arm more likely to develop stress incontinence
- In E Only arm more likely to develop both stress and urge incontinence
Medication: Vaginal Estrogen for Treatment of Urge Incontinence

<table>
<thead>
<tr>
<th>Study Year</th>
<th>Sample</th>
<th>Type</th>
<th>Hormone Tx</th>
<th>Tx Length</th>
<th>Tx Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>26</td>
<td>SI/UI</td>
<td>Premarin Cream</td>
<td>6 mo</td>
<td>No effect</td>
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<tr>
<td>1991</td>
<td>40</td>
<td>SI/UI</td>
<td>Estradiol Cream</td>
<td>4 mo</td>
<td>No effect</td>
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<tr>
<td>1992</td>
<td>105</td>
<td>SI/UI</td>
<td>Vagifem</td>
<td>12 mo</td>
<td>No effect</td>
</tr>
<tr>
<td>2003</td>
<td>220</td>
<td>SI/UI</td>
<td>Estring</td>
<td>3 mo</td>
<td>No effect</td>
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</tbody>
</table>
Treating Urge Incontinence
Treatments for Urge Incontinence

- **Antichololnergics**
  - Oxybutinin (*ditropan*)
  - Tolterodine (*detrion*)
  - Solifenacin (*vesicare*)
  - Darafenacin (*enablex*)
  - Trospium (*sanctura*)
  - Botox

- **TCAs**
  - Imipramine for mixed incontinence

- **Sacral nerve stimulation**
Tibial Nerve Stimulation

• Which patients?
  – Overactive bladder
  – Detrusor overactivity
  – Urge incontinence
  – Non-obstructive non-neurogenic bladder (MS, Parkinson’s)

• Needle electrodes placed above the ankle
• 1-3 30 minute sessions a week
• 12 weeks of therapy
• Efficacy equal to tolterodine in non-blinded study of 100 people
Treating Stress Incontinence
Treatments for Stress Incontinence

• Pessaries
  – Occlusive pressure supports bladder neck
  – May unmask other incontinence

• SNRIs
  – Duloxetine (Cymbalta)
  – Not FDA approved, but some efficacy
Mid-Urethral Sling Procedure for Stress Incontinence

- Less morbidity than a Burch
  - Less voiding dysfunction de novo urinary retention
  - Less de novo urgency or urge incontinence
- Shorter operative time than Burch or other surgeries
- Shorter hospital stay by ½ a day
- More cost-effective
- Equal efficacy as a Burch & other procedures
- Lifespan of 10-15 years
Surgery-Burch Procedure for Stress Incontinence

- Adds a sling under the bladder neck
- May be modified
  - abdominal approach
  - laproscopically
- Up to 25% failure rate at 5 years, but lower than other procedures
  - Less post operative catheterization time
  - May also fix anterior wall defects
- Reserved for women with contraindications to or failure of mid-urethral sling procedures
Bulking Agents

• Methods
  – Materials injected around the urethra
    • Beads-carbon-based beads
    • Bulking agents-cow derived collagen

• Reserved for women who cannot tolerate pelvic surgery or anesthesia

• Symptoms controlled for up to 12 months

• Usually repeated treatments to achieve outcomes
Summary

• Invest early in Lifestyle and Behavioral Interventions
  – Weight loss
  – Kegel’s
  – Biofeedback and electrical stimulation
• Hormone Therapy—consider vaginal estrogen but evidence does not support use of oral HT
• Surgical options are narrowing based on evidence of efficacy
References


