Urinary Incontinence

The A,B,C's of P

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Disclosures

• I have received an honorarium from CME Info for a lecture on urinary incontinence.
Goal:

- Improve ability to manage most cases of urinary incontinence in women that you will see in Family Medicine
Objectives:

• Diagnose the most common causes of urinary incontinence in women
• Prescribe appropriate therapy for patients
• Make timely referrals for patients who need specialty evaluation
• Discuss outcomes of treatment options
Types of Incontinence

• Stress Incontinence (SI)
• Urge Incontinence (UI) / Overactive Bladder (OAB)
• Mixed Incontinence (MI)
• Overflow Incontinence
• Systemic Incontinence
• Functional Incontinence
Physiology Review 1: Storage

• Bladder: low level vesical afferent firing through Pelvic nerve stimulates:
  – Sympathetic outflow to bladder contracts outlet and inhibits detrusor (Hypogastric nerve)
  – Pudendal nerve outflow to external urethral sphincter contracts (mediated by the pontine storage center)
Physiology Review 2: Voiding

- Bladder: intense vesical afferent firing activates spinobulbospinal reflex pathways passing through pontine micturition center
  - Stimulates parasympathetic outflow to bladder and internal sphincter (detrusor contraction and internal sphincter relaxation)
  - Inhibits sympathetic outflow to urethral outlet and bladder and Pudendal nerve outflow to the external urethral sphincter
Physiology: Lesson One

- Increase sympathetic tone or decrease parasympathetic tone favors storage
- Decrease sympathetic tone or increase parasympathetic tone favors voiding
Epidemiology: Prevalence

• Women 26-62%
  – Stress 50%
  – Mixed 34%
  – Urge 16%
Epidemiology

• 45% women with incontinence will seek care (Wait > 1yr to discuss)
• Diabetic less likely to initiate discussion
• Patients with incontinence work less hours, change employment, take early retirement
Epidemiology: Lesson Two

• When patients come in for routine care you should ask about incontinence routinely
• Incontinence has a significant impact on social lifestyle, work and sexual functioning
• Medicare Quality Measure
Etiology: Risk Factors

- Age
- Obesity
- History of UTI
- Physical Limitations/Impaired Mobility: Both
- OCP and HRT: Women

- Parity
  - Childbearing increases risk (17% nulligravid > 20 yr have incontinence)
  - Vaginal delivery > risk of SI
  - Forceps delivery does not increase/decrease risk of incontinence
Etiology: Lesson Three

• No evidence that Cesarean Sections prevent later incontinence
Etiology: Non Medical

- Family History
- Lifestyle
  - Caffeine
  - Tobacco
  - Alcohol
Etiology: Medical Risks

- Cardiac: MI/Angina/CAD/HTN
- Metabolic: Diabetes
- Obstructive Sleep Apnea
- Neuropsychiatric: Parkinson disease, stroke, depression, Dementia, NPH, MS
Etiology: Medical Risks

- Respiratory: asthma, COPD
- Gastrointestinal: IBS, IBD, Constipation
- Musculoskeletal: osteoarthritis
- Cancer
Etiology: Medications

- Alpha-adrenergic blockers: decrease sphincter tone
- Antipsychotics: impaired emptying, retention and constipation
- Calcium channel blockers: impaired detrusor activity
- Diuretics: worsen UI
- Tricyclic antidepressants: inhibit bladder contraction
- Beta-blockers: UI
- Sedatives/Hypnotics: impaired cognition
- Muscle relaxants: inhibit bladder contractions
Etiology: Lesson Four

- Think like a Family Doc
- Is incontinence a marker for some other problem, especially as patients get older-over medication or another medical problem, e.g. neurodegenerative disorder.
- Always review medications with patient
Flow: Case Presentations

• We will address patients presenting with common causes of incontinence
  – Stress Incontinence (SI)
  – Urge Incontinence (UI)
  – Mixed incontinence (MI)

• Who to refer after initial evaluation and treatment
Case 1

- 44 yr G3P3 presents for annual exam. No chronic medical problems, no meds. She does not smoke, ETOH glass of wine with dinner on weekends, no drugs. On review of systems she has gained 25 pounds in the last year due to stopping her regular exercise routine due to urinary incontinence which started after her last delivery but has increased in frequency in the past year.
Case 1: cont’d

• Incontinence occurs:
  – Whenever she coughs, sneezes or bearing down
  – While running
  – No urgency
  – No dysuria
  – No nocturia, however, she has to be careful getting out of bed in the morning with a full bladder as sometimes sitting up will cause her to loose urine.
Case 1: cont’d

• Physical examination
  – BMI 32
  – Abdomen soft, non-tender, no masses
  – Pelvic exam normal
    • No rectocele or cystocele or fecal impaction
    • Observed Kegel: perineal body moved appropriately
    • Cough Stress test positive for a small amount of urine
  – Neurological exam intact
  – Urinalysis is normal
Case 1: Diagnosis

- Stress Incontinence
- Typical case: increases in abdominal pressure will result in leakage
Testing Overview

- **Urinalysis always**
- Urine Culture only if UA positive
- Cough Test
- Consider Serum Creatinine if bladder outlet obstruction is suspected
- Post Void Residual
Post Void Residual

- Specific neurological diseases
- Recurrent UTIs
- Detrusor underactivity or bladder outlet obstruction
- History of urinary retention
- Severe constipation
- Significant pelvic organ prolapse
- DM with peripheral neuropathy
- Medications that alter detrusor or sphincter muscles
Testing: Choose Wisely

- Urodynamic Studies are NOT INDICATED prior to conservative treatment*
  - Not associated with better outcomes in nonsurgical patients
  - Voiding diary and cough stress test have high diagnostic value compared to UDS
  - May change clinical decision making but no evidence that will result in a better outcome in incontinence rates post treatment**

**Clement KD et al. Cochrane Database of Systematic Reviews. 2013, Issue 10. Art. No.: 003195
SI: Therapy Overview

- Lifestyle Changes
- Behavioral Therapy
- Pessaries
- Medication
- Surgery
Therapy: Lifestyle Changes

- Fluids: limit to 2 liters per day, timing
- Caffeine
- ETOH
- Tobacco
- Weight Loss (Subak et al NEJM 2009: 360: 481-90)
Quality of studies to support lifestyle changes is low.

Imamura et al. Cochrane Database of Systematic Reviews, 2015, Issue 12. Art. No.: CD003505
Therapy: Behavioral

- Pelvic Floor Muscle Training (PFMT)
  - Kegel Exercises: 3 sets 10 slow velocity contractions sustained for 6-8 seconds each 3-4 times per week 12-20 weeks
  - No benefit to adding vaginal cones if able to stop urine flow with contraction of pelvic floor
  - Biofeedback is useful for patients who cannot get the muscles to contract (Medicare will cover after 4 week trial of behavioral treatment)

Therapy: Pessary for SI

- Candidates: Patient preference, medical comorbidities contraindicate surgery, need to delay surgery
- Contraindications:
  - Local infection of vagina or pelvis
  - Latex allergy
  - Noncompliance as patient can develop fistula
  - Sexually active women who cannot remove or replace—does not apply to a Ring Pessary
Pessary in place
Pessaries: complications

- Vaginal Erosions ~10%
- Malodorous vaginal discharge from colonization by coloform bacteria due to higher vaginal pH in atrophic vagina
- Prevention: periodic removal and cleaning
- Treatment: topical estrogen cream helps restore tissue and pH.
SI: Therapy Overview

- Lifestyle Changes
- Behavioral Therapy
- Pessaries
- **Medication**
- Surgery
SI: Medication therapy

ACP recommends against treatment with systemic pharmacologic therapy for Stress Incontinence
  (Strong recommendation, low-quality evidence)
Stress Incontinence: Surgical Options

- Vaginal Approaches: midurethral sling; bladder neck sling
- Abdominal Approach: Burch retropubic colposuspension, or autologus rectus fascial sling
- Balloons: Adjustable Continence Therapy or Intravesicle Balloon (limited low grade evidence)
- Periurethral Bulking Agent if fail conservative therapy and declines or can not tolerate surgery
SI: Surgery Summary

- Limited head to head studies of procedures most compare to “conservative” therapy
- Vaginal or open procedures improved outcomes with minimal complication rates
- Balloons have high explantation rates especially in elderly
- Limited low quality evidence for bulking agents
SI: Value Based Care

• One cost effectiveness analysis of PFMT/pessary vs mid urethral sling suggests that surgery is superior*
• Sensitivity analysis PMFT would be superior if subjective cure rate >40.5%
• Cochrane review 56% cured PFMT**

*Richardson ML, Sokol ER Am J Obstet Gynecol 2014; 211:565.e1-6
** Demoulin et al. Cochrane Database of Systematic Reviews, 2014, Issue 5. Art. No.: 005654
Case 2

56 yr old G2P2 comes in for routine follow up of hypertension controlled with chlorthalidone 25 mg daily. As you finish the visit she says “By the way, I am loosing control of my bladder.” What do you do—you are already 30 min behind schedule?

– Complete “The 3 incontinence questions” (3IQ)
– “Voiding diary”- record all instances of passing urine, incontinence episodes, liquid consumed
– [Free Voiding Diary apps for smart phones](#)
“3IQ”

• 1. During the last 3 months, have you leaked urine (even a small amount)?
“3IQ”

• 2. During the past three months, did you leak urine: (Check all that apply)
  – When you were performing some physical activity-coughing, sneezing, lifting or exercise?
  – When you had the urge or feeling that you need to empty your bladder, but could not get to the toilet fast enough?
  – Without physical activity and without a sense of urgency?
“3IQ”: cont’d

3. During the last 3 months, did you leak urine most often: (Check only one)
   – A. When you were performing some physical activity, such as coughing, sneezing, lifting or exercise?
   – B. When you had the urge or the feeling that you needed to empty your bladder, but you could not get to the toilet fast enough?
   – C. Without physical activity and without a sense of urgency?
   – D. About equally as often with physical activity as with a sense of urgency
Case 2 cont’d: 3 days later

- 3IQ: suggests Urge incontinence
- Diary: Episodes clearly associated with urge to void
- Normal neurologic and pelvic exam, normal Cough Stress Test and urinalysis
Diagnosis: Case 2

• Urge Incontinence

• Without incontinence diagnosis would be OAB
Case 2: Urge Incontinence Therapy

- Pelvic Floor Muscle Exercises
- Weight loss if overweight
- Alter fluid intake
- Caffeine reduction
- Bladder Training
- Timed voiding
Therapy: Urge Incontinence

• Bladder Training:
  – Voluntary timed voiding at intervals of 2 hours or less depending on patient record
  – Urgency controlled with relaxation, contracting pelvic muscles, mental distraction, then void when feel in control
  – Will take several weeks
Case 2

• Pt returns to your office after six weeks and reports some improvement but wishes to try a medication she heard on TV
Case 2: Urge Incontinence- Med Rx

- **Antimuscarinic Medications:** decrease parasympathetic tone
  - darifenacin (Enablex)
  - fesoterodine (Toviaz)
  - oxybutinin (Ditropan)
  - solifenacin (Vesicare)
  - tolterodine (Detrol)
  - trospium (Sanctura)

- **Adverse Effects:** constipation, dry mouth, blurred vision, dry eye, confusion and sedation
Case 2: Urge Incontinence- Med Rx

- **Beta 3 Agonist:** increase sympathetic tone
  - mirabegron (Myrbetriq)
- **Monitor for high blood pressure** (do not start if uncontrolled hypertension)
Choosing Agent: Pharmacological Considerations

- Cost and Coverage
- Cognitive impairment: some risk with all
- Cardiovascular diseases: Tachyarrythmias-all; QTc prolongation-solifenacin, tolterodine
- Avoid co administration with drugs with strong anticholinergic side effects: 1st Gen antihistamines, TCAs, muscle relaxants,
- Trospium not metabolized by CYP, low risk interactions
UI: Pharmacological Considerations

- Avoid immediate release drugs in frail elderly
- 4 week trial of a new drug treatment
- Intolerant of PO, offer transdermal formulation
- Review use annually or q6mos for >75 yr
UI: Pharmacological Considerations

- Cochran review, 23 trials, 3,685 adults
  - NNT 5-20 for rx vs bladder training
  - NNT 4-18 for rx+bladder training vs BT alone
  - RR of reporting no improvement .74-.57
  - RR of adverse affects 14-17
    - NNH 1-15
Case 2: Med options

- Oxybutinin 2.25-5mg BID-TID (max 5 mg QID)
- Oxybutinin ER 5-10 mg/day, increase weekly 5mg/day (max 30 mg/day)
- Oxybutinin TD patch (3.9 mg patch) 2Xweek
- Oxybutinin TD gel (1 gel pack daily=100 mg)

- Adverse effects: constipation, dry mouth, blurred vision, dry eyes, confusion and sedation
Comparative Effectiveness

- Per 1000 treated women, continence restored in:
  - 130 with fesoterodine
  - 114 with trospium
  - 114 with oxybutynin
  - 107 with solifenacin
  - 85 with tolterodine
Comparative Effectiveness

• Per 1000 treated women, tx stopped due to SE in:
  – 63 with oxybutinin
  – 31 with fesoterdine
  – 18 with trospium
  – 13 with solifenacin

Ann Intern Med 2012 Jun 19;156(12):861
Case 2: Med options

- Mirabegron 25-50 mg daily
- Side effects: hypertension and headache
- Phase III trials reduction by less than 1 episode per day (-0.44, 95% CI -0.59 to -0.29)
- 66% of patients will discontinue by 1 yr
  - 26% lack of efficacy
  - 10% side effects
Case 2: Med options-combined therapy

• European studies suggest treating with both an anticholinergic and beta 3 agonist can be more effective than either agent alone

• Monitor post void residual at first follow up or if urinary hesitancy, incomplete emptying, frequency or increased incontinence
UI/OAB: Other options

- Acupuncture: limited studies, insufficient evidence
- Botulinum toxin injection of detrusor muscle: equal to anticholinergics less side effects
- Percutaneous Tibial Nerve Stimulation (TNS)
- Sacral Neuromodulation (SNM): mixed evidence compared to Botulinum toxin
Mixed Urinary Incontinence (MI)

- Patient has features of both SI and UI on history and/or the 3IQ
- Initial treatment: Which symptoms cause the patient the most distress
  - PFMT
  - Timed Voiding
  - Bladder Training
  - Weight Loss
MI: Subsequent Options

• SI predominant
  – Pessary
  – Referral for surgical options
• UI predominant
  – Trial of medications- anticholinergic or beta-agonist
  – Referral for acupuncture, TNS
  – Referral for bladder botulinum toxin injections, SNM
Other Pearls

• Fluid overuse: urine volume >2100 cc/day
• Badly timed medication intake: alpha-blockers or diuretics shortly before bed or activities where getting to a toilet difficult
• Pregnant Women: BT for both SI and UI (oxybutinin Category B, all others category C)
• Lower extremity edema with postural diuresis
When to Refer?

- Microscopic hematuria
- Recurrent/persistent UTI with hematuria in women > 40 yrs old
- Anatomic abnormality
- Incontinence with pelvic or abdominal pain
- Suspected fistula
- Complex neurologic conditions e.g. spinal stenosis, PD, NPH, MS
Refer: When initial treatment fails

• Symptoms continue despite adequate trial of treatment
• Uncertainty regarding diagnosis
• Prior pelvic surgery or radiation
• Desires surgery primarily for SI
Summary

• Common problem – Ask!
• Always review medications
• Consider as a symptom of another systemic problem
• Impact of comorbidities on your treatment outcomes
• Stress, Urge and Mixed Incontinence can be managed in a primary care setting
  – Lifestyle change and Behavioral Therapy first line
  – Meds help with Urge incontinence, not SI
  – Expensive tests are not indicated: Voiding Diary (App for cell phones) and 3 Incontinence Questions
Thank You