

Primary Care Clinician Educational Module on Urinary Incontinence

Northwestern Medicine is participating in a practice improvement study funded by the Agency for Healthcare Research and Quality (grant number: U18HS028744) to improve the screening, identification and treatment of urinary incontinence in women. This brief (< 10 minute) module includes educational material covering current evidence-based best practices for various types of incontinence. These include 1 clinical vignette for each of the 5 topics covered.

Case 1

Mary is a 57 year-old woman who is in your office for her annual exam. She has hypothyroidism, hyperlipidemia and osteoarthritis, all of which are well-controlled. Her BMI is 29 and you encourage her to begin an exercise program to help with weight loss. She says that she has stopped exercising because she leaks urine when she does sit-ups or squats. On further discussion she says that she has been decreasing her fluid intake in general because she has urinary frequency every 2 hours and gets up 3 times at night. She says the last 2 years of working from home have been a blessing because she is always by a bathroom. Leaving the house to go shopping or commute to the office makes her nervous, and she wears a pad on those days. Based on Mary's symptoms, you can assume that she has:

- A. Normal urinary changes of aging
- B. Stress urinary incontinence
- C. Mixed urinary incontinence
- D. Overactive bladder

case_1 education

The correct answer is (C): Mixed urinary incontinence.

There are 4 common types of urinary incontinence and 2 rare types of urinary incontinence. The 4 common types are urgency incontinence, stress incontinence, mixed incontinence (a mix of urgency and stress) and functional incontinence

Urgency incontinence is leakage that is often preceded by a sudden urge to urinate or large gushes that seemingly "come out of nowhere." Often associated with nocturia and daytime frequency. Stress incontinence is leakage that happens with rises in abdominal pressure (coughing, exercise, jumping, running, laughing,). Mixed incontinence is a mixture of both symptom types and is very common. Functional incontinence - leakage that occurs due to a mental or physical impairment to get to a bathroom in a timely fashion - is also quite common. It is often present in women with advanced dementia or in women with a recent history of an orthopedic injury or surgery.

Overflow incontinence, which often presents like urgency incontinence but is differentiated by the presence of a high post-void residual, is rare and typically not dangerous in women unless they have a known spinal cord injury. Psychogenic incontinence is even more rare and is easy to identify from the history.

Diagnosis of incontinence subtype is important to choosing a treatment. The diagnosis usually can be made with a good history and typically does not require any testing or complex exams. A cough stress test in the office (having a woman cough with a full bladder while visualizing the urethra) can be done easily in a primary care office if pelvic exams are part of your routine practice. However, this test is not necessary for initiating conservative treatment options. You can consider a urine culture to rule out a UTI as contributing to the incontinence if the symptoms seem new or suddenly worsening.

Case 2

Leann is a 37 year old woman who recently moved to Illinois and is establishing care with a new primary care physician. She has a 2 year old and a 5 year old at home and works as a realtor. She tells you she "lives out of her car" and "eats at drive-throughs and whatever her kids leave on their plates." She discloses that she keeps a "pee jar" in the car because she can't always find a public bathroom fast enough, and she has chronic constipation from fluid restricting. She leaks urine when she jumps on the trampoline with her kids. You think she might benefit from some pelvic floor therapy, but she says she is very busy and asks if she can just do Kegels at home.

- True
- False

True or False: Home based, self-directed, physical therapy has been shown to be effective and equivalent to specialist-guided pelvic floor physical therapy for the treatment of urinary incontinence.

case_2 education

The correct answer is "False."

Pelvic floor physical therapy is a certified sub-specialty within the American Physical Therapy Association and has evolved substantially as a field over the last 30 years. Supervised pelvic floor physical therapy, by a PT subspecialist with significant additional training and certification in women's health, offers much more than a program of unsupervised home training. Pelvic floor PT is much more than Kegels, or pelvic floor muscle contractions, and should not be considered equivalent to doing Kegels at home. Appropriate pelvic floor physical therapy consists of manual myofascial massage, biofeedback, strength training programs, guided bladder retraining, management of constipation and fluids and more. NM employs more than two dozen subspecialized pelvic floor PTs. Pelvic floor PT can be effective for both stress and urgency incontinence.

Case 3

Susan is a 71 year old patient with a medical history notable for depression, anxiety and hyperlipidemia. She is otherwise healthy and continues to work part-time, helps to watch her grandkids, and travels a lot. She reports that she has been struggling with urgency incontinence and has tried to make behavioral changes without much improvement. She has heard there are pills for overactive bladder, and she asks you for a prescription to try. Her current medications are paroxetine and atorvastatin. She has Medicare and supplemental private drug coverage. The best medication to maximize efficacy and reduce side effects and drug risks is:

- A. Solifenacin 10mg daily,
- B. Mirabegron 50mg daily
- C. Trospium 20mg TID
- D. Oxybutinin 5mg BID

Case_3 education

The correct answer is (B): Mirabegron 50mg daily.

There are 2 classes of medications available for the treatment of overactive bladder (anticholinergics and beta 3 agonists). Until 2012, when Beta 3 agonists were first FDA approved in the US, physicians were limited to using anticholinergics that were known to carry the risks of constipation, dry mouth, and confusion. Second generation anticholinergics were marketed as more targeted drugs with fewer side effects, and Trospium was marketed as a quaternary amine that could not cross the blood-brain barrier and therefore could not cause confusion.

Recently, concerns have emerged that prolonged use of anticholinergic medications is associated with an increased risk of cognitive impairment, dementia, and Alzheimer disease in the general population.

As detailed in the AUGS Clinical Consensus Statement:

"A prospective cohort study of 3434 participants sampled from an integrated health care delivery system described the association between cumulative anticholinergic use and the risk of dementia. Participants in the highest exposure category-corresponding to oxybutynin chloride 5 mg taken daily for more than 3 years-had a significantly increased risk of dementia (adjusted hazard ratio [HR], 1.54; 95% confidence interval, 1.21-1.96) or Alzheimer disease (adjusted HR, 1.63; 95% confidence interval, 1.24-2.14) compared with those with no use. These risks are higher in women taking antidepressants with anticholinergics properties. Another study examined the association between anticholinergic medication use and neuroimaging biomarkers of brain metabolism and atrophy in a cohort of participants from 2 longitudinal studies. Significant differences in memory and executive function were noted in measures of cognitive performance when comparing anticholinergic users and nonusers. In addition, anticholinergic users showed significantly reduced brain glucose metabolism and evidence of temporal lobe and whole-brain atrophy compared with nonusers. Anticholinergic medication use was also associated with progression to mild cognitive impairment and/or Alzheimer disease (P = 0.01; HR, 2.47). Finally, most of the available studies on effect of anticholinergic medications on cognitive function do not make distinction on their capacity to cross the blood-brain barrier. Although some anticholinergic medications seem less likely to cross the blood-brain barrier, there are insufficient clinical data to demonstrate safety with regard to cognitive concerns."

Gray SL, Anderson ML, Dublin S, et al. Cumulative use of strong anticholinergics and incident dementia: a prospective cohort study. *JAMA Intern Med* 2015;175:401-407.

Risacher SL, McDonald BC, Tallman EF, et al. Association between anticholinergic medication use and cognition, brain metabolism, and brain atrophy in cognitively normal older adults. *JAMA Neurol* 2016;73: 721-732.

Given the available evidence, clinicians should counsel on the associated risks, prescribe the lowest effective dose, and consider alternative medications in patients at risk. As recommended by the American Urogynecologic Society, use of anticholinergic medications to treat OAB in women older than 70 years should be avoided.

The two available beta agonists are mirabegron (which may have better insurance coverage but is not recommended in patients with uncontrolled hypertension and may have a few more drug interactions such as with metoprolol or warfarin) and vibegron (can be used without regard to BP and has no drug interactions but is not covered by Medicare or Medicaid yet). Unless there are drug interactions or coverage issues that prevent the use of beta 3 agonists, these should be used as first choices for medication treatment of urgency incontinence.

Case 4

Latasha is a 52 year old woman with a medical history notable for osteoarthritis and an MI who tells you during her annual exam that she has had overactive bladder for 2 years, but recently she has become anxious about leaving the house because she has so many bladder accidents each week. She has started to buy adult diapers and has to change them twice a day. She has noticed that at least once a week she has a bowel accident too with small amounts of formed stool. She has no other neurologic complaints and just had a normal colonoscopy last year. She says she is not very good about remembering to take pills and wants to know if you have heard of any other treatments for her problems.

Which of the following are true about Latasha's options:

- A. She would not be able to get a sacral nerve stimulator because she may need MRIs for her arthritis in the future
- B. She could consider getting intravesical onabotulinumtoxinA injection
- C. She needs to try 2 medications first before any insurance will approve invasive procedures for her symptoms
- D. Sacral neuromodulation is effective for the treatment of both urinary and bowel incontinence
- E. Any invasive treatment she chooses to get will require multiple trips to the operating room and you would not recommend this given her history of MI.
- F. B and D
- G. B, C, D and E

Case_4 education

The correct answer is (F): She could consider getting intravesical onabotulinumtoxinA injection. AND Sacral neuromodulation is effective for the treatment of both urinary and bowel incontinence.

There are currently 3 procedural therapies for urgency urinary incontinence: intravesical onabotulinumtoxinA injection (Botox), sacral neuromodulation (SNM), and peripheral tibial nerve stimulation (PTNS). The first two are more effective and durable than PTNS and therefore more commonly chosen by patients.

Botox injection is performed in the office during a 20 minute appointment without any need for sedation. Patients tolerate the procedure very easily and can drive themselves home. Patients may notice symptoms improvement as soon as 3-4 days later, but maximal efficacy occurs at 2 weeks. Symptom control can last anywhere from 4-12 months, after which the procedure can be repeated. On average, Botox reduces the number of leaks per day by 3, and 25% of patients become completely continent.

Sacral neuromodulation involves the implantation of a stimulation lead next to the S3 nerve root along with a battery that generates impulses to the lead that interfere with the "overactive signals" from the bladder and bowel. The lead and battery are both MRI-safe, and the rechargeable battery lasts for 15 years. SNM can be performed with one or two short trips to the operating room under MAC anesthesia. SNM is effective for the treatment of both urgency urinary and bowel incontinence. On average, SNM is similar to Botox in the mean reduction in leaks and urgency episodes per day, but more patients receiving SNM become completely continent.

Many insurance plans no longer require that patients "try and fail" conservative or medication treatments before progressing to these more effective and durable therapies.

Case 5

Rosa is a 45 year old woman you have taken care of for years who has prediabetes and a BMI of 31. You are counseling her today about the importance of weight reduction. She tells you that she cannot go to the gym to exercise because she leaks urine with weight-lifting or any high impact activity like jogging. She has heard from a friend that there may be a surgery for her incontinence, but she has also seen commercials for mesh lawsuits on TV and wants to know what you think. Which of the following statements about midurethral slings is correct?

Which of the following statements about midurethral slings is correct?

- A. The mid-urethral sling is considered safe and effective by the FDA and is not included in the FDA warnings about vaginal mesh kits used for prolapse.
- B. The midurethral sling procedure is the most studied surgery to treat stress urinary incontinence and continues to be the gold standard for the surgical treatment of SUI.
- C. Rosa should lose weight first or else the midurethral sling will not be effective for her.
- D. The midurethral sling is the only surgery or procedural treatment for stress incontinence so Rosa's options are either to accept the risks or continue with conservative management.
- E. A and B
- F. A, B, C and D

Case_5 education

The correct answer is (E): The mid-urethral sling is considered safe and effective by the FDA and is not included in the FDA warnings about vaginal mesh kits used for prolapse. AND The midurethral sling procedure is the most studied surgery to treat stress urinary incontinence and continues to be the gold standard for how the condition is treated.

The polypropylene mesh midurethral sling is the current gold standard for the surgical treatment of SUI and is the most studied surgical procedure in the field. There are over 2000 comparative trials on the midurethral sling. This procedure has essentially replaced open and transvaginal suspension surgeries for uncomplicated SUI, although these older surgeries are still performed in select cases, and some patients may choose them. The midurethral sling is associated with less pain, shorter hospitalization, faster return to usual activities, and reduced costs as compared to historic options. Polypropylene material has been used in most surgical specialties (including general surgery, cardiovascular surgery, transplant surgery, ophthalmology, otolaryngology, gynecology, and urology) for over five decades, and the material is known to be safe in humans. Despite the advertising done by some lawyers, the midurethral sling for stress incontinence is not included in any FDA recalls or warnings.

A prospective cohort study that followed women for up to 17 years after a retropubic midurethral sling procedure reported objective cure rates of 90 percent and subjective cure rates of 87 percent. More recent studies have suggested that success rates are lower in women with class 3 obesity, but there is no evidence to suggest that women should lose weight to improve the efficacy of the procedure.