INCONTINENCE

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Overview

Although a major cause of physical, functional and psychological morbidity, urinary incontinence remains undx'd in up to 55% of women/78% of men. Fewer than ½ of people with incontinence consult their physician. A good screening question is "Do you ever leak urine when you don't want to?"

Diagnostic Considerations

Be aware of risk factors to identify who should be screened **(Figure 1)**. Elicit the patient's co-morbid medical conditions, medication and surgical history. Consider acute causes using the DRIP mnemonic and treat accordingly **(Figure 2).** If chronic, take hx and perform focused px to classify incontinence subtype **(Table 1)**. *Note: Patient should void before examination Post-void residual volume (PVR) measurement provides valuable information and can be done in the office via PVR ultrasound or bladder catheterization. Catheterization yields clean urine for analysis.

Type	Stress	Urge	Overflow	Functional	Mixed
Etiology	Weakened pelvic floor muscles and/or impaired bladder neck sphincter tone due to: advancing age, multiple vaginal deliveries, inadequate estrogen levels, pelvic surgery, neurologic insult	Due to inappropriate bladder contractions from hyperactive detrusor muscle. 2^0 to stroke, spinal stenosis, bladder inflammation acutely (i.e. UTI, stone) or chronic (i.e. tumor)	Obstruction to urine outflow (i.e. tumor, pelvic organ prolapse, BPH, fecal impaction, scar tissue from past surgery) Underactive bladder muscle due to nerve damage (i.e. DM, alcoholism, B12 deficiency, spinal cord injury, hip fracture, prev. colorectal surgery)	Cognitive or physical impairment that keep patients from urinating normally Reduced mobility (i.e. Parkinson's, severe arthritis) Cognitive decline (i.e. Alzheimer's, severe depression)	Combines stress and urge mechanisms Frail elderly patients may also have detrusor hyperactivity with incomplete contractility (DHIC), characterized by urgency but also retention, despite the absence of outlet obstruction.
Clinical Presentation	Intermittent loss of small amounts of urine	Patients feel sudden need to urinate. Most common form in the elderly Also known as "Overactive Bladder Syndrome" (OAB)	Patients complain of overdistension, leaking small volumes, dribbling and hesitancy	Variable	Mixed features Most common form of incontinence in women
High Yield Question	Do you ever leak urine when you laugh, cough, sneeze or lift something?	Are you unable to hold urine after having the urge to urinate?	Are you unable to fully empty your bladder? Is the urine stream weaker than in the past?	Do you have trouble getting to the washroom?	What do you think is going on?
Associated physical exam findings	Presence of chronic cough Signs of fluid overload	Is the prostate large? Urge incontinence exam often non-specific	Check for bladder distension, abdominal masses, uterine prolapse or cystocele DRE to assess for fecal impaction Abnormal strength, sensation or reflexes of lower extremities may suggest neurologic insult	Can the patient understand the urge to void? Are they physically able to reach toilet?	Mixed findings

Figure 1: Risk factors for urinary incontinence

Older age
Female gender
Multiple vaginal deliveries
Prostatic hypertrophy
Obesity
Diabetes
Neurologic disease (i.e. Stroke)
Dementia or other functional impairment
Restricted mobility
Polypharmacy

Figure 2: Causes of acute, reversible incontinence

D Delirium, drugs (e.g. caffeine, diuretics)

R Restricted mobility, retention

I Infection, inflammation (atrophic vaginitis/urethritis), impaction (fecal)

P Polyuria (DM, CHF)

Consider referral to a urologist / urogynecologist for any of the following

- Suspected bladder neoplasm
- Unresolved hematuria
- Suspected recto-vesicular fistula
- Neurologic conditions (parkinson's, spinal cord injury, possible normal pressure hydrocephalus)
- Organ prolapse beyond the hymen in women
- In men, abnormal prostate examination or elevated PSA
- Patient request for surgical management
- Elevated PVR that persists after treatment of possible causes (medications, stool impaction)

Dr. Michael Evans developed the One-Pager concept to provide clinicians with useful clinical information on primary care topics

Management

Non-Pharmacologic Management

Encourage weight loss in obese patients with stress incontinence

Dietary changes: Eliminating alcoholic, caffeinated and carbonated beverages from the diet may be helpful

Pads and protective garments: Used as an adjunct to incontinence therapy. Choice of item depends on gender, incontinence subtype and volume of leaked urine Information on pad varieties is available from the National Association for Continence (www.nafc.org)

Pelvic floor muscle exercise (Kegels): For stress incontinence. Although interruption of urination regularly is not recommended, patients may try this initially to help identify the pelvic floor muscles. The correct muscle contractions should generate a mild sense of pressure on a finger inserted in the vagina. The contraction should be held for about 10 seconds, and repeated up to 40 times per day. Kegel exercises are of particular benefit when done during a stimulus which would normally cause incontinence (coughing, sneezing, etc.).

Vaginal pessaries: For pelvic organ prolapse (POP) and stress incontinence in women. Useful in patients preferring non-surgical treatment and for patients who are poor surgical candidates.

Behaviour training: For urge incontinence. Scheduled voiding (q2h during the day, before bed, q4h when asleep if nocturnally incontinent). The goal of scheduled voiding is to keep total volumes low so bladder reflex not stimulated. Use techniques to minimize post-void residual (PVR), which include bending forward, applying suprapubic pressure, and voiding twice consecutively. If voiding too frequently (e.g. <q2h), patients feeling the urge to void should stand still or sit down, take a slow deep breath and picture the urge as a "Wave that peaks and falls". Once control over the urge has been established, the patient should toilet normally.

Pharmacotherapy for Urinary Incontinence

Drug	Dose	Type of Incontinence	Mechanism	Side Effects
Anticholinergics				
Oxybutynin IR (Ditropan™, Ditropan XL™, Oxytrol Patch™)	IR: 2.5mg-5.0 bid-tid, up-titrate as needed qweekly, max 20mg/day in divided doses XL: 5mg OD, up-titrate as needed, max 30mg Patch: apply twice weekly topically (3.9 mg oxybutynin/day)	Urge, Stress with detrusor instability IR useful if protection wanted at specific times	Antispasmodic effect on bladder smooth muscle. Increases bladder capacity	Dry mouth, blurry vision, raised intra-ocular pressure, constipation, QT prolongation, confusion, dizziness Generally less side effects with XL preparations Metabolized by P450 3A4. Interactions with inhibitors/ inducers of 3A4. Worsen dementia with cholinesterase inhibitors.
Tolterodine (Detrol IR™, Detrol LA™)	IR: 1-2mg bid LA: 2-4mg OD			
Darifenacin (Enablex™)	7.5-15.0 mg daily			
Solfenacin (Vesicare™)	5-10 mg daily			
Trospium (Trosec™)	20 mg BID (dose reduced in renal failure)			
Alpha adrenergic antagonist Tamsulosin (Flomax™), IR or CR formulations Alfuzosin (Xatral™ ER) Terazosin (Hytrin™)	0.4mg OD, may increase to 0.8mg OD after 2-4 weeks 10mg OD Taken qhs. 1mg, increase as needed qweekly. Most require 10mg. Max 20mg.	Overflow or urge associated with BPH Can be used in women with stress incontinence	Relax smooth muscle of urethra and prostate	Rule out prostate cancer prior to use Dizziness, headache, orthostatic hypotension, floppy iris syndrome
5-alpha reductase inhibitors (use only in men) Finasteride (Proscar™) Dutasteride (Avodart™)	5mg OD 0.5mg OD	Overflow or urge associated with BPH	Reduction of prostate volume over time (may take 6 months for effect)	Rule out prostate cancer prior to use Erectile, ejaculatory dysfunction, gynecomastia
Hormonal therapy: Conjugated estrogen cream (Premarin™) Estradiol tablets (Vagifem™)	0.5-1.0mg intravaginally, daily for 3 weeks and then twice weekly 25mcg intravaginally daily for 2 weeks and then twice weekly	Stress, Urge with atrophic vaginitis	Increases periurethral blood flow and strengthens tissues	With topical cream, no need for progesterone treatment for endometrial cancer prevention **Studies have shown that this is not useful for incontinence that is not associated with atrophic vaginitis

IR: immediate-release, XL: extended-release, LA: long-acting, BPH: benign prostatic hyperplasia

Summary Management Algorithm of Urinary Incontinence

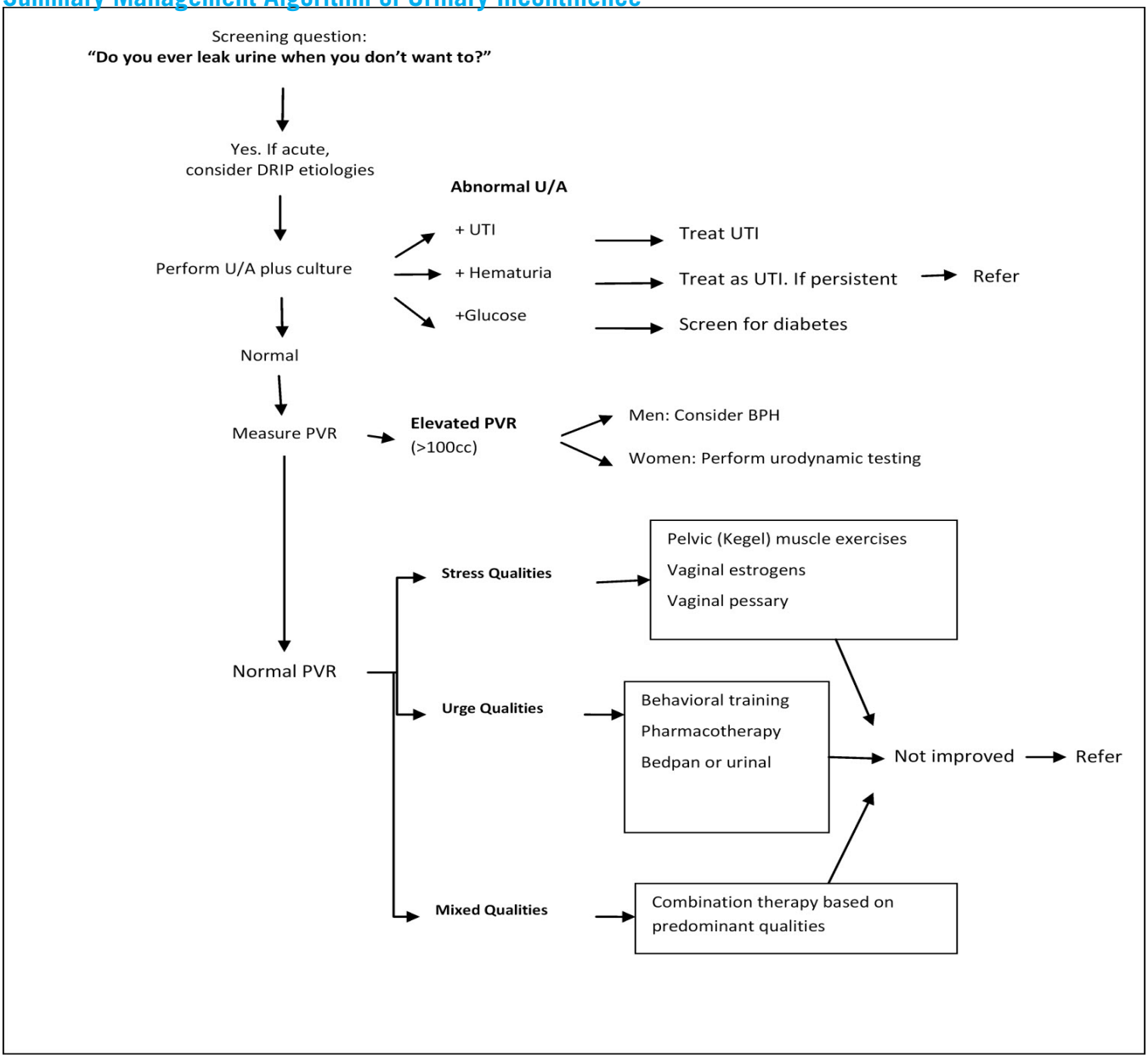

Table 1: Key Features in Classifying Incontinence

Patient Resources

uptodate.com/patients Patient-level reading. Search: "Incontinence incontinence treatments" or "Pelvic muscle exercises"

familydoctor.org A less detailed alternative

powderroom.ca For short or long-distance travel, updated maps provide cross-Canada bathroom locations for patients to plan voiding

References

Emedicine.com

Uptodate.com

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