



# URGENCY INCONTINENCE

FLAME LECTURE: 175

BURNS / TABIT 3.17.17

# Learning Objectives

- ▶ Discuss etiology and risk factors for urge urinary incontinence
- ▶ Describe the workup for urge urinary incontinence
- ▶ Describe management of urge urinary incontinence
- ▶ Prerequisites:
  - ▶ NONE
- ▶ See also – for closely related topics
  - ▶ FLAME LECTURE 174 – Urogyn H&P
  - ▶ FLAME LECTURE 176 – Stress Urinary Incontinence
  - ▶ FLAME LECTURE 177 – Urinary Retention

# Etiology

- ▶ Urge Incontinence is the urge to void immediately preceding or accompanying an involuntary leakage of urine
  - ▶ Most commonly due to detrusor muscle overactivity
  - ▶ Overactive Bladder (OAB) – syndrome with urgency (with or without leakage); often accompanied by nocturia and increased frequency
  - ▶ Bladder overactivity found in 21% of healthy elderly patients<sup>1</sup>
- ▶ Look for other causes contributing to urgency:
  - ▶ Bladder infection/inflammation
  - ▶ Bladder stones
  - ▶ Obstructed bladder opening
  - ▶ Bladder cancer
  - ▶ Neurologic issues
  - ▶ Often specific etiology is unknown

## Risk Factors

- ▶ Obesity
- ▶ Smoking
- ▶ Diabetes
- ▶ Caffeine
- ▶ Family history
- ▶ Impaired mental status
- ▶ History of bladder infections
- ▶ Childhood enuresis and bladder dysfunction

# Physiology - Bladder Muscle Function

- ▶ **Detrusor Muscle** – smooth muscle layer of bladder which relaxes to allow bladder filling and contracts to facilitate urination
- ▶ **Sphincter** – control bladder outlet (internal sphincter is under autonomic control, external sphincter is under somatic control)
- ▶ **Levator ani** – voluntary muscle of pelvic floor that assists in urine retention

# Physiology – Nervous Stimulation

- ▶ Sympathetic stimulation maintains continence
  - ▶ *Hypogastric n.* inhibits detrusor muscle, relaxing bladder
  - ▶ *Pudendal n.* contracts sphincter, preventing bladder outflow
- ▶ Parasympathetic stimulation assists in urination
  - ▶ Bladder filling causes stretch receptors to send afferent signals to brain that create parasympathetic outflow via *pelvic splanchnic n.'s* which cause detrusor muscle contraction

# Evaluation – History

## During the last 3 months, did you leak urine:

- when you were performing some physical activity (coughing, sneezing, lifting, exercise)?
- 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?
- without physical activity and without a sense of urgency?

## During the last 3 months, did you leak urine *most often*:

- when you were performing some physical activity (coughing, sneezing, lifting, exercise)? = **SUI**
- 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? = **Urgency Incontinence**
- without physical activity and without a sense of urgency? = **Incontinence of other predominant cause**
- About equally as often with physical activity as with a sense of urgency = **Mixed incontinence**

# Evaluation – History

- ▶ Associated symptoms

- ▶ Dysuria, nocturia, hematuria, pelvic pain, fever
  - ▶ if present consider UTI as source of incontinence

- ▶ Neurologic symptoms

- ▶ Impact and quality of life

- ▶ Which symptoms are most bothersome? How have the symptoms changed since the last visit?

# Evaluation - Physical Exam

- ▶ Speculum Exam
  - ▶ Should be done on any woman with urinary incontinence symptoms. Look for vaginal atrophy, pelvic masses, anterior vaginal wall prolapse
- ▶ Post-void Residual
  - ▶ Useful in evaluating for urinary retention
  - ▶ PVR <50ml is normal; > 200mL abnormal
- ▶ Bladder Stress Test
  - ▶ Used to rule out stress incontinence. While standing, patient with full bladder is asked to valsalva or cough while examiner looks for leakage from urethra
- ▶ UA/UCx
  - ▶ Useful in ruling out UTI

# Treatment – Lifestyle Modifications

- ▶ Diet modifications
  - ▶ Decrease nighttime fluid
  - ▶ Decrease alcohol, caffeine, carbonated drinks
  - ▶ Increase fiber - constipation
- ▶ Smoking cessation
- ▶ Bladder training:
  - ▶ Timed voids – using voiding diary, identify shortest voiding interval, and schedule regular voids at this interval
  - ▶ Voiding intervals are increased until patient is voiding 3-4x/day
- ▶ Pelvic floor exercises (Kegel exercises)
  - ▶ 10 second contractions of muscles that are used to prevent urination

# Treatment



- ▶ Topical vaginal estrogen (Premarin, Estrace, Vagifem, Estring)
  - ▶ Vaginal atrophy can lead to symptoms of urinary frequency and dysuria and can contribute to incontinence
  - ▶ Topical vaginal estrogen has been shown to restore the normal vaginal acidic pH and microflora, thicken the epithelium, and reduce the incidence of UTIs and overactive bladder symptoms
  - ▶ Systemic absorption is low, but may be contraindicated in certain women with estrogen-dependent tumors

# Treatment - Medical

- ▶ *Antimuscarinics – counteract parasympathetic activation of detrusor muscle thereby decreasing bladder contractility*
  - ▶ Available in immediate and extended release
  - ▶ Patients should receive post-void residual testing to monitor for urinary retention
  - ▶ Adverse effects: dry mouth, blurred vision, constipation, hyperthermia, flushing, urinary retention, ileus
  - ▶ Contraindications: gastric retention/paresis, acute angle closure glaucoma
- ▶ *Mirabegron – Beta<sub>3</sub> agonist – activates sympathetic tone in detrusor bladder leading to increased bladder relaxation*
  - ▶ Contraindication: hypertension

Darifenacin (Enablex)

Fesoterodine (Toviaz)

Oxybutynin (Ditropan)

Tolterodine (Detrol)

Solifenacin (Vesicare)

Trospium (Sanctura)

Hot as a hare  
Dry as a bone  
Red as a beet  
Blind as a bat

# Treatment – Nerve Modulation

## ▶ **Sacral nerve modulation** (Interstim)

- ▶ Has been shown to be beneficial for OAB symptoms
- ▶ Placement of a wire lead into the S3 foramen to increase sympathetic stimulation of bladder
- ▶ Test phase: lead wire placed, tunneled through skin, and connected to a temporary stimulation device
  - ▶ Patient is asked to maintain voiding diary for 2 weeks to assess whether there is a 50% reduction in urinary urgency, frequency, and leakage
- ▶ Implantation phase: if test phase is successful, a permanent stimulation device is implanted under the skin of the back

# Treatment – Nerve Modulation

- ▶ Percutaneous tibial nerve stimulation (PTNS)
  - ▶ Has been shown to be beneficial for detrusor overactivity
  - ▶ Placement of an acupuncture needle medially behind the ankle with electrical stimulation administered for 30 minute sessions weekly for 12 weeks, followed by maintenance therapy monthly
- ▶ Detrusor Botulinum Toxin Injections
  - ▶ Office procedure involving 10-20 injections into the various locations within the bladder; effects last 3-9 months

# IMPORTANT LINKS / REFERENCES



1. [Pelvic Floor Distress Inventory](#)
2. [Pelvic Floor Impact Questionnaire](#)
3. [AUA Guidelines – Guideline for the Surgical Management of Female Stress Urinary Incontinence \(2009\)](#)