A new look at urinary incontinence evaluation and management

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Disclosure

• Consultant to AMS 2012-2013

Case

• 52 yo woman presents with bothersome leakage of urine with any physical activity and sometimes with urgency. She is wearing 2 pads each day. What does the evidence say about the following?
  • Necessary testing?
  • Likelihood of success with pessary vs PT vs combo?
  • Likelihood of success of PT vs sling?
  • Behavioral strategies vs drug therapy?

True or False?

• The combination of PT and pessary is better than only PT for SUI
• Only 8% decrease in BMI results in 50% reduction of UI episodes
• All drug therapy for urgency incontinence is contraindicated in patients with glaucoma
• Injection of OnabotulinumtoxinA into the bladder is superior to drug therapy for urge UI
• Urodynamic testing helps predict which kind of sling would be more beneficial for your patient

Objectives

• Review a non-specialist evaluation algorithm for UI
• Understand the difference between SUI and OAB
• Describe evidence-based treatment algorithms for SUI and OAB
• Review new guidelines for hematuria evaluation
What history is necessary?

• What makes them leak?
• Urgency/Freq/nocturia?
• Pain?
• # pads/ coping strategy?
• Treatment history
• Bulge and bowel habits?
• Medications: Diuretics/ Beta-blockers

Don't forget that UI can be a sign of CNS disease

• Ask briefly about the following:
  • Dizziness
  • Gait change
  • Visual changes
  • Memory deficits
• Diseases to consider:
  • TIA/CVA
  • Brain tumor
  • Multiple Sclerosis
  • Dementia

Evaluation and management

• Urinalysis
• Standing cough stress test with full bladder
• Simple pelvic examination: R/o bulge and pelvic mass
• Only check PVR if planning surgery
• Bladder diary

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Take the Floor
Join the Conversation
Find a Provider
Join the Movement
Start Vosing Today

Intake and Vosing Diary

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>1st Urine (oz)</th>
<th>Last Urine (oz)</th>
<th>Activity during last hour</th>
<th>Walk more on legs</th>
<th>Fluid intake (oz)</th>
<th>Activity level</th>
<th>Pain</th>
<th>Heart rate</th>
<th>Incontinence</th>
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Nocturia versus nocturnal polyuria

- Determined by simple 24 hour urine collection
- Common causes: Sleep apnea (ANP), CHF, diabetes mellitus
- Sleep Apnea
  - Most under-recognized cause of nocturnal polyuria
  - Treatment with CPAP significantly reduces nocturnal frequency (Fitzgerald et al, Am J Obstet Gynecol, 2006).

Most common error that I see:

- Drug therapy for SUI

Is urodynamics helpful for SUI?

A Randomized Trial of Urodynamic Testing before Stress-Incontinence Surgery

- Significant urgency and urgency incontinence symptoms that are refractory to initial management
- Unable to demonstrate stress incontinence on examination
- Voiding dysfunction symptomatology
- Very rigid bladder neck and suspecting ISD
- Recurrent stress incontinence
- Unexplained incontinence after prolapse operation

When is UDT helpful?

- No!
Treatment options

- Weight loss
- Pelvic floor exercises
- Incontinence pessary (ring with a knob) or tampon
- Medication
- Referral for surgery (minimally invasive sub-urethral sling)

PRIDE Study: 8% decrease in BMI results in 50% reduction in UI

Weight loss works! Use it for all UI

Pelvic Muscle Rehabilitation: How effective is it?

PFMT is BETTER than placebo or no treatment in women with ALL types of UI

Who will benefit from pelvic PT for SUI?

- Observational study of 447 women with SUI to determine predictors of treatment failure
- Three independent predictors of failure:
  - >2 leakages per day (p<.001)
  - Use of psychotropic medication (p=.002)
  - Baseline positive stress test at first cough (p=.042)
- Odds only 15% for successful treatment if all 3 present

Pelvic PT and exercise adherence?

- Less than ¼ of women continued exercises
- No difference in rate of subsequent SUI surgery in women who had intensive pelvic PT versus not
- Marked benefit of initial therapy not maintained 15 years later

Bo and Nygaard. Obstet Gynecol, 2005

Cross-over rates

Study Overview

<table>
<thead>
<tr>
<th>Adverse Event</th>
<th>Physical Therapy Group (N=200)</th>
<th>Surgery Group (N=221)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of events (%)</td>
<td>No. of events (%)</td>
</tr>
<tr>
<td>Serious adverse events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladder perforation</td>
<td>0</td>
<td>6 (2.6)</td>
</tr>
<tr>
<td>Vaginal epithelial perforation</td>
<td>2 (1.0)</td>
<td>8 (3.7)</td>
</tr>
<tr>
<td>Reoperation for tape exposure</td>
<td>1 (0.5)</td>
<td>5 (2.5)</td>
</tr>
<tr>
<td>Reoperation to loose tape</td>
<td>0</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Postoperative bleeding</td>
<td>1 (0.5)</td>
<td>0</td>
</tr>
<tr>
<td>Hernia/uterus</td>
<td>4 (2.0)</td>
<td>16 (7.4)</td>
</tr>
<tr>
<td>Blood loss ≤500 ml</td>
<td>1 (0.5)</td>
<td>2 (0.9)</td>
</tr>
<tr>
<td>New urge urinary incontinence</td>
<td>5 (2.5)</td>
<td>13 (6.0)</td>
</tr>
</tbody>
</table>

* Adverse events occurred in 41 women in total; § All adverse events in the physiotherapy group occurred in women who crossed over to the surgery group; § P=0.01.

SURGERY = ADVERSE EVENTS

Take home message...

- Younger women with moderate to severe SUI will likely benefit more from going ahead with a sling

Who do pessaries work for?
PT vs. Pessary vs. Both: 49% in behavior vs 33% in pessary were dry

Take home message
- Try PT before a pessary
- No benefit of both compared to PT only
- Set patient expectations
- Remember the rule of 1/3

Surgical options for SUI
- Retropubic slings
- Pubic Symphysis
- TVT Needle
- Anterior Abdominal Wall

Pessary for SUI: 1/3 find it effective
Inferior epigastric vessels
Obturator vessels
Ext iliac vessels
Narrow margin of safety – 3.5 cm
Transobturator slings
Mini-Sling
The Evolution of Stress Incontinence Surgery
**Cure at Long Term Follow up:**

- **Retropubic**
  - TVT 90% @ 11.5 yrs (Nilson)

- **Transobturator**
  - TVT-O 82.4% @ 4 yrs (Liapis)
  - TOT 88.4% @ 3 yrs (Waltregny)

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**Overall Cure**

**Retropubic vs Transobturator**

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**When would I always do a Retropubic?**

- Recurrent Stress Incontinence
- Intrinsic Sphincter Deficiency

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**There is no FDA warning on slings for SUI**

*Position Statement on Mesh Midurethral Slings for Stress Urinary Incontinence*

The polypropylene mesh midurethral sling is the recognized worldwide standard of care for the surgical treatment of stress urinary incontinence. The procedure is safe, effective, and has improved the quality of life for millions of women.
Evidence-based algorithm for urgency incontinence

Tier 1
- Behavioral therapies
- Dietary strategies

Tier 2
- Drug therapy

Tier 3
- OnabotulinumToxinA
- Sacral neuromodulation
- PTNS

AHRQ Comparative Effectiveness Reviews 2012

Caffeine Causes OAB by releasing intracellular Ca++

Ca++
Parasympathetic Nerve
Sympathetic Nerve

1Ca+

Parasympathetic Nerve
Sympathetic Nerve

Receptor Selectivity

Inhibition Constant Ratio (K) for Muscarinic Receptor Subtypes*

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Inhibition Constant Ratio (K) for Muscarinic Receptor Subtypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tresplum</td>
<td>1.3</td>
</tr>
<tr>
<td>Tolterodine</td>
<td>3.6</td>
</tr>
<tr>
<td>Solifenacin</td>
<td>12</td>
</tr>
<tr>
<td>Oxybutynin</td>
<td>12.2</td>
</tr>
<tr>
<td>Darifenacin</td>
<td>59.2</td>
</tr>
</tbody>
</table>

*Animal models. Please see full prescribing information.

Anticholinergic drugs: No real difference

Anticholinergic drugs versus non-drug active therapies for non-neurogenic overactive bladder syndrome in adults (Review)

Rut RP, Cody JD, Alhamzah A, Stewart L.

THE COCHRANE COLLABORATION®

Cochrane results (2012)
- More symptomatic improvement when anticholinergics were compared with bladder training alone
- More improvement when combined drug + bladder training versus training alone
New target receptor: Beta-3 agonist

OAB Pharmacotherapy

• Name 2 warnings for mirabegron
  No CONTRAINDICATIONS just warnings/precautions
  1. ↑ in BP: not recommended if severe uncontrolled htn; 50mg ↑SBP/DBP by 3.5 / 1.5 mmHg
  2. Urinary retention
  3. 25mg dose if severe renal impairment or moderate hepatic impairment; Not recommended if ESRD or severe hepatic impairment
  4. Mirabegron is a moderate CYP2D6 inhibitor so careful w/ drugs with narrow therapeutic windows & metabolized by CYP2D6 (thioridazine, flecaïnine, propafenone)

OAB Pharmacotherapy

• Which medications are generic?
  - Oxybutynin chloride 5mg tablets (90 tabs $7)
  - Oxybutynin ER (30 tabs $38 at Walmart)
  - Trospium chloride (60 tabs $65 at CVS)
  - Tolterodine tartrate (60 tabs $77 at CVS)
  - "Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations"

Side effects?

My treatment algorithm for OAB

• Eliminate caffeine
• Reduce fluids to 48 oz per day
• Timed voiding: Bladder retraining
• Add medication if bladder retraining not effective after 6 weeks: Mirabegron if can afford
• Refer to specialist if refractory after these measures: Peripheral nerve stimulation; Onabotulinum toxin injection; Sacral nerve stimulation
Cause for alarm: Persistent irritative sx may be a sign of bladder cancer

Send microscopic UA if positive blood on urine dip

Microscopic hematuria workup
- ≥ 3 RBC per HPF
- Negative urine culture
- Order CT Urogram and diagnostic cystoscopy
- NO ROUTINE CYTOLOGY


Conclusions
- Simple questions can discriminate between basic types of UI
- Look for underlying medical conditions and medications that exacerbate the problem
- Check UA on women with any UI or irritative voiding sx
- Don’t “screen” for hematuria in asymptomatic patients
- A small amount of weight loss goes a long way
- Don’t treat SUI with any drugs
- Initiate treatment or make a referral