Overactive Bladder – Taking Control

Supported by an educational grant from Astellas

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Program Overview:
Overactive bladder (OAB) is an embarrassing, disruptive, chronic medical condition that affects more than 34 million men, women, and children of any age or race in the U.S. Predominantly, it affects nearly one of every five adults over the age of 45. This program will assist pharmacists in understanding the embarrassment and disruption felt by patients who are dealing with overactive bladder as well as the benefits of alleviating victims of this challenge. It will also enhance their knowledge of available options for those patients living under such circumstances. The program includes information on pharmacologic treatments, patient counseling and a question/answer period.

Objectives:
• Describe the detrimental affects that overactive bladder may have on its victim's lives, incorporating information on the prevalence of this unnecessary problem.
• Identify, educate, and treat patients seeking relief from overactive bladder.
• Specify the pharmacological bladder control options for patients suffering from urinary incontinence to include their mechanisms of action, efficacy, dosing, safety, and tolerability profiles.

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Overactive Bladder – Taking Control

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University Of Pittsburgh School of Medicine

Biography: Kip Benko, MD Graduate of Juniata College in Molecular Biology and Georgetown University in Human Physiology and Biophysics with University of Pittsburgh Affiliated Residency in Emergency Medicine. He is currently an attending physician at Mercy Hospital of Pittsburgh. Dr. Benko is also a clinical associate professor of Emergency Medicine at University of Pittsburgh School of Medicine and Developer, Founder, President of Dental Box Co. Inc. Additionally, he is a command physician for the University of Pittsburgh Medical Center’s Stat Medevac in the city of Pittsburgh EMS and Medical Jet Assistant for commercial airlines. He is also a consultant for Saint Francis University’s Center of Excellence for Remote and Medically Under-Served Areas.

Speaker Disclosure: Dr. Benko has no actual or potential conflicts of interest in relation to this program

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OAB---What is it?

International Continence Society

---A symptom complex characterized by urinary urgency, with or without incontinence, usually with frequency & nocturia

---The above symptoms are in the absence of any proven or obvious pathology, such as UTIs, bladder CA, neurologic abnormalities, etc.
Overactive Bladder

Normal Bladder

- detrusor muscle contracting when bladder is full

Overactive Bladder

- detrusor muscle contracting before bladder is full

![Diagram showing normal and overactive bladders](image-url)
acetylcholine
What Distinguishes OAB From Other Common Urinary Disorders?

OAB symptoms

Mixed symptoms

Mixed incontinence

SUI

UUI

SUI: stress urinary incontinence
UUI: urge urinary incontinence

Adapted from Wein AJ. J Urol. 2006;175(3 pt 2):S5-S10.
### Important Components of OAB

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Urgency</strong></td>
<td>Sudden compelling desire to pass urine, difficult to defer</td>
</tr>
<tr>
<td></td>
<td>- <em>Urges</em> normal, <em>urgency</em> is pathologic</td>
</tr>
<tr>
<td></td>
<td>- <em>Urgency</em> is “key” symptom</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>Voiding too often during the day (&gt; 8 times/day)</td>
</tr>
<tr>
<td><strong>Nocturia</strong></td>
<td>Waking up to void (≥ 1 time/night)</td>
</tr>
<tr>
<td><strong>Urge urinary incontinence</strong></td>
<td>Each decrease in involuntary leakage episodes with urgency is meaningful to the patient</td>
</tr>
<tr>
<td><strong>Mixed UI</strong></td>
<td>Combination of OAB with SUI</td>
</tr>
<tr>
<td></td>
<td>Women with SUI may have frequency</td>
</tr>
</tbody>
</table>
By the numbers.....

- Estimated 33 million adults in the US experience OAB
- 33% of these report incontinence episodes
- 33-40% of people don’t seek treatment
Overactive Bladder Is Very Prevalent

OAB is equally prevalent in men and women and increases with age.

OAB is a more prevalent condition than chronic sinusitis or heart disease.

* Overall prevalence, with and without urge incontinence
N = 5204, P = NS women vs men

Life can stink…

Impact on Quality of Life With Disease Progression

- Early Stage: Inconvenience and Coping Mechanisms
- Mid Stage: Depression, Anxiety, Job Loss, Isolation
- Late Stage: Medical Consequences
  - Assisted Living and Long-term Care
OAB Negatively Affects Many Quality-of-Life Aspects

**Physical**
- Limitations/cessation
- Disturbed sleep
- Difficulties concentrating
- Tiredness
- Overeating

**Sexual**
- Avoidance of sexual contact

**Domestic**
- Specialized underwear, bedding
- Precautions with clothing

**Psychological**
- Depression
- Lack of self-esteem
- Lacking bladder control
  - Urine odor

**Social**
- Reduction in social interaction
- Rely on toilet accessibility

**Occupational**
- Absence from work
- Decreased productivity
- Early retirement

Quality of life
OAB impacts *Physical Aspects* …

- Sleep
- Fatigue
- Overeating
- Can’t concentrate
OAB affects SEX

Avoidance
OAB affects your *Domestic Life*

**Specialized Clothing, bedding & underwear**

Consequently, people don’t travel as much
OAB has *Psychological* impact…

- Depression
- Anxiety
- Loss of Self Esteem
OAB impacts your *Social* life

Reduction in personal interaction

--(proximity to bathroom)
OAB impacts your Occupation

- Loss of Productivity
- Absence from Work
- Early Retirement
Coping Strategies

Defensive Voiding!

Use of Pads/Diapers

Restrictive Fluid Intake

Dark & Baggy Clothes

Toilet Mapping
Why do Patients Cope, Rather than Seek Help?
(Barriers to Communication)

- Fear of Embarrassment
- Fear resulting from misconceptions about OAB
- Differences in perception of symptom severity, degree of bother, willingness to seek treatment
Reasons Why Patients With OAB Eventually Seek Treatment

- Concern that their condition could get worse
- Concern that urinary leakage is a symptom of a more serious condition
- Concern that their condition is not normal
- Worry that others could smell the odor caused by leakage or involuntary loss of urine
- Increasing concern about possibility of an embarrassing accident

- Older women seek help because of long symptom duration, comorbidities, and severity of UI
- Men seek help because of frustration and anger at symptoms
### OAB Diagnosis Has a Positive Impact on Knowledge, Communication, and Management

<table>
<thead>
<tr>
<th></th>
<th>Diagnosed</th>
<th>Not diagnosed but having symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of life has improved</td>
<td>47%</td>
<td>32%</td>
</tr>
<tr>
<td>Higher sense of self-esteem</td>
<td>40%</td>
<td>21%</td>
</tr>
<tr>
<td>Likely to discuss condition with spouse/partner</td>
<td>62%</td>
<td>27%</td>
</tr>
<tr>
<td>Likely to discuss condition with doctor/nurse</td>
<td>95%</td>
<td>31%</td>
</tr>
<tr>
<td>Seeking information</td>
<td>24%</td>
<td>3%</td>
</tr>
<tr>
<td>Managing the symptoms</td>
<td>97%</td>
<td>44%</td>
</tr>
</tbody>
</table>


N = 1420 online interviews
Treatment Goals for OAB

- Eliminate or improve urinary urge incontinence
- Reduce urgency and frequency episodes
- Ensure treatment compliance for multiple long-term benefits
  - Comorbidities, cost, improved quality of life
- Consensus with the patient’s treatment expectations
Treatment Options/Approach for OAB

- Behavioral Modification
- Drug Therapy
- Neuromodulation
- Augmentation
- Diversion

- Denervation
- Electromagnetic Therapy
Behavior Modification

- Education
- Timed voiding
- Pelvic floor muscle exercises
- Bladder retraining
- Reinforcement
Behavior Modification
Education & Lifestyle Changes
Behavior Modification
Pelvic Floor Muscle Exercises

Kegels!

Named after Dr. Arnold Kegel
Behavior Modification
Do Pelvic Floor Exercises Work?

- Subjective Improvement
  --50-80%
- Objective Improvement
  --50%
- Cures--25%
- Requires 3-4 months of training and may last indefinitely
- Combined with drug Rx
  --Improvement in > 70%
Behavior Modification
Bladder Retraining/Timed Voiding

- Simple form of behavior therapy to decrease urgency, frequency and urge incontinence
- Involves voiding by the clock, NOT by how you feel.
- Involves gradually increasing the time between voids until a normal interval is reached
- Studies show a 50-60% improvement
The Problem with Behavior Modification?

*In a Word..Compliance!*
Anticholinergic Drugs for OAB

- Mainstay of therapy of OAB
- Reasonably effective (rate approx 70%)
- Tolerability may limit persistence
- Dose, delivery method influences side effects
<table>
<thead>
<tr>
<th>Agent</th>
<th>Half-life, h</th>
<th>Dose</th>
<th>Metabolism</th>
<th>Side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darifenacin (Enablex)</td>
<td>7.4–19.95</td>
<td>7.5–15 mg/d</td>
<td>CYP450, CYP2D6, CYP3A4</td>
<td>Dry mouth, constipation, dyspepsia, asthenia</td>
</tr>
<tr>
<td>Oxybutynin chloride Immediate-release (Ditropan)</td>
<td>~4</td>
<td>5 mg tid</td>
<td>CYP450, CYP3A4</td>
<td>Dry mouth, constipation, somnolence</td>
</tr>
<tr>
<td>Extended-release (Ditropan XL)</td>
<td>~12</td>
<td>5–30 mg/d</td>
<td>CYP450, CYP3A4</td>
<td>Dry mouth, constipation, headache, somnolence</td>
</tr>
<tr>
<td>Transdermal patch (Oxytrol) (changed twice weekly)</td>
<td>NA</td>
<td>3.9 mg/d</td>
<td>CYP450, CYP3A4</td>
<td>Dry mouth, skin reactions</td>
</tr>
<tr>
<td>Syrup</td>
<td>~4</td>
<td>5–15 mg/d</td>
<td>CYP450, CYP3A4</td>
<td>Dry mouth</td>
</tr>
<tr>
<td>Solifenacin succinate (Vesicare)</td>
<td>45–68</td>
<td>5–10 mg/d</td>
<td>CYP450, CYP3A4</td>
<td>Dry mouth, constipation, blurred vision, fatigue</td>
</tr>
<tr>
<td>Tolterodine tartrate Immediate-release (Detrol)</td>
<td>2.2–9.6</td>
<td>1–2 mg bid</td>
<td>CYP450, CYP2D6</td>
<td>Dry mouth, constipation, headache, somnolence</td>
</tr>
<tr>
<td>Extended-release (Detrol LA)</td>
<td>~8</td>
<td>2–4 mg/d</td>
<td>CYP450, CYP2D6</td>
<td>Dry mouth, constipation, headache, somnolence</td>
</tr>
<tr>
<td>Trospium chloride (Sanctura)</td>
<td>~20</td>
<td>20 mg bid</td>
<td>Ester hydrolysis, CYP450 (minimal)</td>
<td>Dry mouth, constipation, headache, fatigue</td>
</tr>
</tbody>
</table>

CY = cytochrome.
Which Drug is Best?

- No one drug is best
- Prescribing is by trial & error or comfort
- Sometimes dosing & delivery can be adjusted to accommodate side effects
Anticholinergic Side Effects

- Dry as a Bone
- Mad as a Hatter
- Blind as a Bat
- Red as a Beet
- Hot as Hades
Concerns with Pharmacologic Therapy

- **Tolerability Limitations**
  - dry mouth, constipation, heat prostration

- **Safety Concerns**
  - possible CNS issues with some agents (elderly & neurogenic patients)

- **Cardiac Concerns?**
Other Options if Meds Fail

- Botulinum Toxin
- Neuromodulation
- Augmentation/
  Urinary diversion
Botulinum toxin blocks Ach release and, therefore, the detrusor muscle activity is blocked.
Neuromodulation

- Reserved for those who fail other less invasive treatments.

- Mechanisms still not clearly known.

- Most patients get at least partial success
Augmentation/Urinary Diversion

- Last Resort

- Only used in patients who have no hope of getting help with other modalities.

- Is invasive and destructive

Bladder is removed. Urine drained to outside thru piece of small bowel.
Maximize oral therapy

Additional Therapies (comorbidities)

Botulinum toxin type A injection

Neuromodulation

Augmentation / Urinary diversion

Alternative drug delivery
Questions