Innovative Treatment Options for Refractory Urge Urinary & Fecal Incontinence

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Agenda:

• OAB/FI
  – Definitions
  – Prevalence
  – QOL
  – Guidelines
• OAB Evaluation
• Sacral Neuromodulation
• Questions?
Definition of Overactive Bladder (OAB)

• **OAB** is a symptom complex characterized by:

1. Daytime **frequency** >8x/day
2. **Nocturia** - 1x/night
3. **Urgency** - sudden compelling desire to urinate
4. +/- **Urge urinary Incontinence** (UUI)

-In the absence of pathologic or metabolic conditions that might explain these symptoms (DM, UTI, neurologic conditions)
Definition of Fecal Incontinence (Fl)

• “The accidental passing of bowel movements ranging from an occasional leakage of stool while passing gas to a complete loss of bowel control”

• Fecal Urge incontinence is the most common type

• Usually due to nerve damage or muscle injury of the pelvic floor muscles which are too weak to hold back a bowel movement
Prevalence of OAB and FI vs. Other Health Conditions in the U.S.

- More than **37 million** adults in the United States – 1 in 6 suffer from OAB.\(^1,2\)
- More than **20 million** adults in the United States – 1 in 12 suffer from FI.\(^4,5\)
- OAB and FI rank high among other diseases in prevalence.\(^1-8\)

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PREVALENCE
DUAL INCONTINENCE (U.S.)

OAB and Quality of Life

• National Association for Continence (NAFC) survey participants reported that their OAB caused them to:
  – alter their behavior in social situations.
  – refrain from both normal and intense physical activity.
  – refrain from physical intimacy.
  – cancel social plans.

• Primary reasons patients seek OAB treatment:
  – Frustration from living with symptoms (78%)
  – Embarrassment (42%)
  – Physical discomfort (38%)

Source: Survey for the National Association for Continence (NAFC), sponsored by Medtronic, Inc. and conducted by Kelton Research, April 2009. The online survey was conducted using an email invitation. Respondents were 611 nationally representative American women ages 40-65 with overactive bladder.
Fecal Incontinence Quality of Life Scale (FIQOL) Scores

Note: Higher scores translate to higher quality of life

Medtronic data on file. InterStim Therapy for Bowel Control Prospective Clinical Study. PMA#P080025.
Patient Education Needed

Studies suggest that only **15%– 45%** of FI patients seek treatment\(^1,2\).

Consider the following statistics that support the claim that

**fecal incontinence is a hidden condition:**

- **For 84%** of patients with FI, the **physician was unaware** of the patient’s disorder\(^1\)
- **54%** of patients with FI had **not discussed the problem with a professional**\(^2\)
- **65%** of patients with severe or major FI which had an impact on the quality of life **wanted help** with their symptoms\(^3\)

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Patients are considered refractory after failing behavioral therapy of sufficient length and at least **ONE** anti-muscarinic for 4-8 weeks.
Strong Recommendation: SNM for the Treatment of Fecal Incontinence
OAB Evaluation

1. **Minimum evaluation**: careful history, focused physical exam and urinalysis

2. **Advanced evaluation**: urine culture, cytology, cystoscopy, post void residual, +/- urodynamics

3. **Pelvic Exam**: evaluate for stress urinary incontinence (SUI), urethral mobility, pelvic organ prolapse.
OAB Conservative treatments

• Designated as first line treatments by AUA and Intl Continence Society (ICS) because it is as effective as medical therapy at reducing OAB sx’s but require adherence and compliance

• 1. Education
• 2. Dietary and lifestyle modification-decreasing caffeinated/carbonated beverages, limiting fluids
• 3. Bladder training- scheduled voiding, emptying bladder at night
• 4. Pelvic floor muscle therapy- physical therapy to strengthen pelvic floor muscles
• 5. Bladder diaries- track drinking and urinating behaviors
Medical therapy for OAB:

- **Anticholinergics/Antimuscarinics**
  - (Ditropan, Detrol, Vesicare, Toviaz, Sanctura, etc)
    - Block *acetylcholine* binding to detrusor *muscarnic receptors* thus *suppressing contractions*.
    - No one drug is superior, marginal efficacy, dry mouth, constipation, contraindicated in narrow angle glaucoma

- **β-3 Agonists** (Mirabegron):
  - Impact *β3 adrenergic receptors* to *relax detrusor* muscle during filling
  - As a result, Mirabegron *increases bladder capacity*
  - Approved in 2012, no long term data or drop out rates
  - Still has many insurance hurdles
OAB Rx Adverse events

• **Antimuscarinics:**
  – Dry mouth
  – Constipation
  – Cognitive (confusion)

• **β-3 Agonists**
  – Can increase blood pressure
  – Periodic BP check recommended
  – Contraindicated in pts with severe uncontrolled HTN (>180/110 mm Hg)
Adherence to oral OAB medications is poor

“One of the main limitations of anti muscarinic therapy is that the majority of the patients discontinue after a few weeks or months’~ AUA Guidelines
OAB Advanced Therapy Options

• OnabotulinumtoxinA Injections (Botox)
  – Neurotoxin **blocks Ach release** from presynaptic membrane resulting in temporary calming of muscle contractions
  – Pt must be willing to check frequent PVR’s and self catheterize
  – Can take up to 6m to clear from body

• Peripheral Tibial Nerve Stimulation (PTNS)
  – **Indirect** electrical stimulation of sacral nerve plexus via tibial nerve
  – 30 min stimulation/weekly x 12 weeks

• Sacral Neuromodulation (SNM/Interstim)
  – **Direct** stimulation of sacral nerve plexus responsible for bladder contractions.

• Surgery (Augmentation cystoplasty/urinary diversion)
  – Very invasive, rare- procedure of last resort
• **Sacral Neuromodulation (SNM)**

  - Delivers mild electrical pulses to the afferent fibers that accompany the sacral spinal nerves via an implanted neurostimulator and lead

  - **These nerves** control the pelvic floor muscles, lower urinary tract, anal sphincters, and colon.\(^1\)-\(^3\)

  - Differs from oral meds/\textit{Botox} for OAB which target the muscular component of bladder control.\(^2,\(^3\)

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* While the precise mechanism of action of Sacral Neuromodulation has not been fully established, efficacy has been proven in clinical studies.
Provided by the InterStim® System

- Only system currently available

- Indications:
  - Urge incontinence
  - Urgency-frequency
  - Non-obstructive urinary retention
  - Chronic fecal incontinence
Benefits of the InterStim® System for Bladder Control and Bowel Control

• FDA approved since late 1990’s
• Proven clinical safety and efficacy
• Received by more than 250,000 patients worldwide
• Test for potential success prior to long-term therapy
• Does not preclude use of alternative treatments
Test for Potential Success

Basic Evaluation

• **Temporary (non-tined) lead** is placed during a simple awake procedure and connected to an external stimulator

• Patient tests therapy effects for **3-7 days**

• If successful, patient may proceed directly to long-term (tined) lead and device implant through an outpatient procedure

• If test is inconclusive or unsuccessful, the advanced evaluation via the staged test is recommended

• **GOAL IS ATLEAST 50% IMPROVEMENT IN SX’s**
Test for Potential Success

Advanced Evaluation

• Utilizes a tined lead that anchors in place
• Placed in the Operating Room during an outpatient procedure under sedation and utilizing fluoroscopy
• Patient assesses therapy effects for 7-14 days
• If test successful, tined lead remains in place and device implanted as an outpatient procedure
• **GOAL IS ATLEAST 50% IMPROVEMENT IN SX’s**
INTERSTIM™ THERAPY PROCEDURE
EVALUATION METHODS

Basic Evaluation (PNE)

Inconclusive

Successful

Advanced Evaluation (Stage 1)

Successful

Neuromodulator (lead & INS)
Implant

- With successful test results the device is implanted
SNM for Bladder Control Outperforms Medications (SMT) at 6 Months*¹


*anticholinergic/antimuscarinic

Superior Efficacy

Percent of OAB Responders

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<thead>
<tr>
<th></th>
<th>SNM</th>
<th>SMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>76%</td>
<td>49%</td>
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</table>

Numbers reflect as treated results, defined as subjects with diary data at baseline and 6 months (p=0.002).

Device-related adverse events occurred in 31% of SNM patients, and medication-related adverse events occurred in 27% of SMT patients.

Criteria for success are: >/= 50% improvement in leaks/voids or return to normal voids.

3 Times Greater Improvements in Total Quality of Life

Mean Improvement from Baseline to Month 6

<table>
<thead>
<tr>
<th></th>
<th>SNM</th>
<th>SMT</th>
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<tr>
<td>Concern</td>
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<td>16</td>
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<tr>
<td>HRQL Total</td>
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</tbody>
</table>

Criteria for success are: >/= 50% improvement in leaks/voids or return to normal voids.
InterStim Delivers Clinical Efficacy
12-month clinical success for Urinary Control

79% of urge incontinence patients achieved clinical success
- 45% remained completely dry
- An additional 34% experienced ≥50% reduction in leaking

64% of urgency-frequency patients achieved clinical success
- 31% returned to normal voids (4 to 7 voids/day)
- An additional 33% experienced ≥50% reduction in number of voids

77% of urinary retention patients achieved clinical success
- 61% eliminated use of catheters
- An additional 16% experienced ≥50% reduction in catheterized urine volume

1. Medtronic-sponsored research: InterStim Therapy - Clinical Summary, 2011.
InterStim Therapy for Urinary Control

Lasting Efficacy - Proven in a 5-year Clinical Trial

Urge Incontinence

- **59%** of urge incontinent patients achieved ≥ 50% reduction in leaks/day*
- **71%** of those urge incontinent patients who reported heavy leaks at baseline achieved ≥ 50% reduction in leaks per day†

* 59% in evaluable patient population (n=61) and 37% in intent-to-treat population (n=96)
† 71% in evaluable patient population (n=49) and 42% in intent-to-treat population (n=84)

1. Medtronic-sponsored research: InterStim Therapy - Clinical Summary, 2011.
InterStim Therapy for Urinary Control

Lasting Efficacy - Proven in a 5-year Clinical Trial

Urgency-Frequency

56% of urgency-frequency patients achieved ≥50% increase
in volume voided/void and improved degree of urgency*

* 56% in evaluable patient population (n=18) and 40% in intent-to-treat population (n=25)

1. Medtronic-sponsored research: InterStim Therapy - Clinical Summary, 2011.
InterStim Therapy for Urinary Control

Lasting Efficacy - Proven in a 5-year Clinical Trial

Urinary Retention

78% of urinary retention patients achieved ≥ 50% reduction in volume/catheterization*

* 78% in evaluable patient population (n=23) and 58% in intent-to-treat population (n=31)

1. Medtronic-sponsored research: InterStim Therapy - Clinical Summary, 2011.
The InterStim for Bowel Control prospective clinical study demonstrates that Sacral Neuromodulation patients experienced significant improvement in their FI from baseline to 5 years ($P < 0.001$).

- **89%** of patients achieved clinical success* at 5 years.
- **36%** of patients achieved complete continence at 5 years.

Most adverse events were treated successfully with medication or device reprogramming. The most common adverse events were implant site pain, paraesthesia, change in sensation of stimulation, and implant site infection.

*Clinical success defined as ≥50% reduction of episodes/week.*

Summary

• OAB and FI are very common conditions which significantly impact a patient’s quality of life.

• Patients may be embarrassed to discuss symptoms and are often unaware of all the treatment options available.

• If conservative treatments have been unsuccessful, please refer patients to a specialist for advanced diagnostic and alternative treatment options.

• By partnering with a specialist, treatment options can be expanded to help find the best solution to manage your patients’ with OAB and/or FI.
Questions??