
The Role of the Health Care Provider in Improving Quality of Life for Patients with Overactive Bladder

Association of Reproductive Health
Professionals
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Acknowledgement

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Faculty Disclosure

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Nothing to disclose.

Medical Advisory Committee

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Learning Objectives

At the conclusion of this program, participants will be able to:

- Demonstrate effective counseling skills in order to facilitate conversations about OAB with appropriate patients
- Recognize the signs of OAB and formulate an appropriate differential diagnosis in order to provide evidence-based care

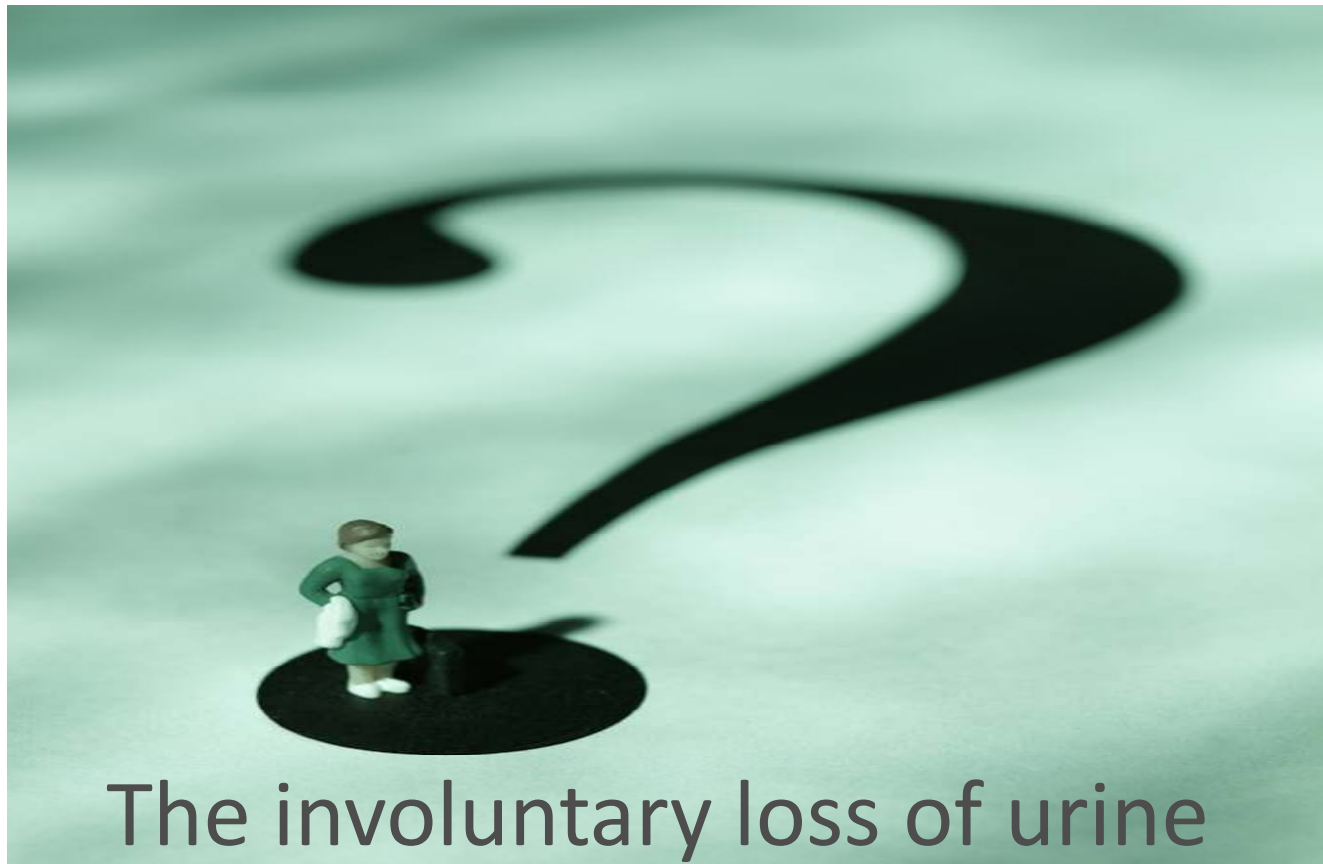
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Learning Objectives (continued)

At the conclusion of this program, participants will be able to:

- Provide pharmacological and non-pharmacological treatments, emphasizing adherence
 - Develop strategies for patient centered care, including when to refer to a specialist
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What is urinary incontinence?



Is it just about getting old?



No! Urinary Incontinence is NOT a normal part of getting older!



Overactive bladder

- What is overactive bladder (OAB)?
 - Urinary urgency with or without incontinence
 - Urinary frequency (voiding > 8 times in 24 hours)
 - Nocturia (awakening ≥ 1 or more times to void)

Urgency: A compelling urge to urinate which is difficult to defer

Urge Incontinence

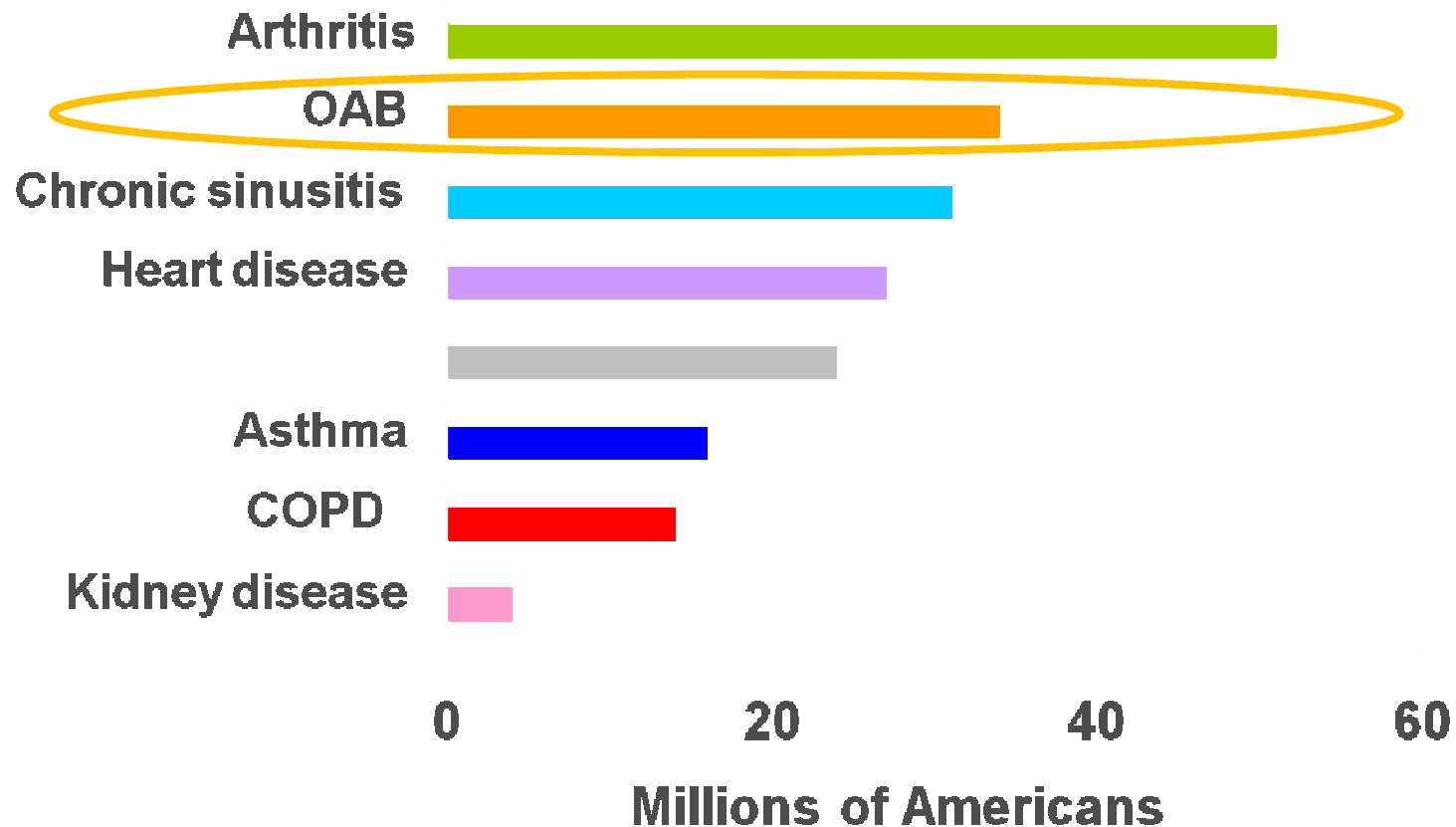
- Incontinence associated with urgency



Prevalence of OAB

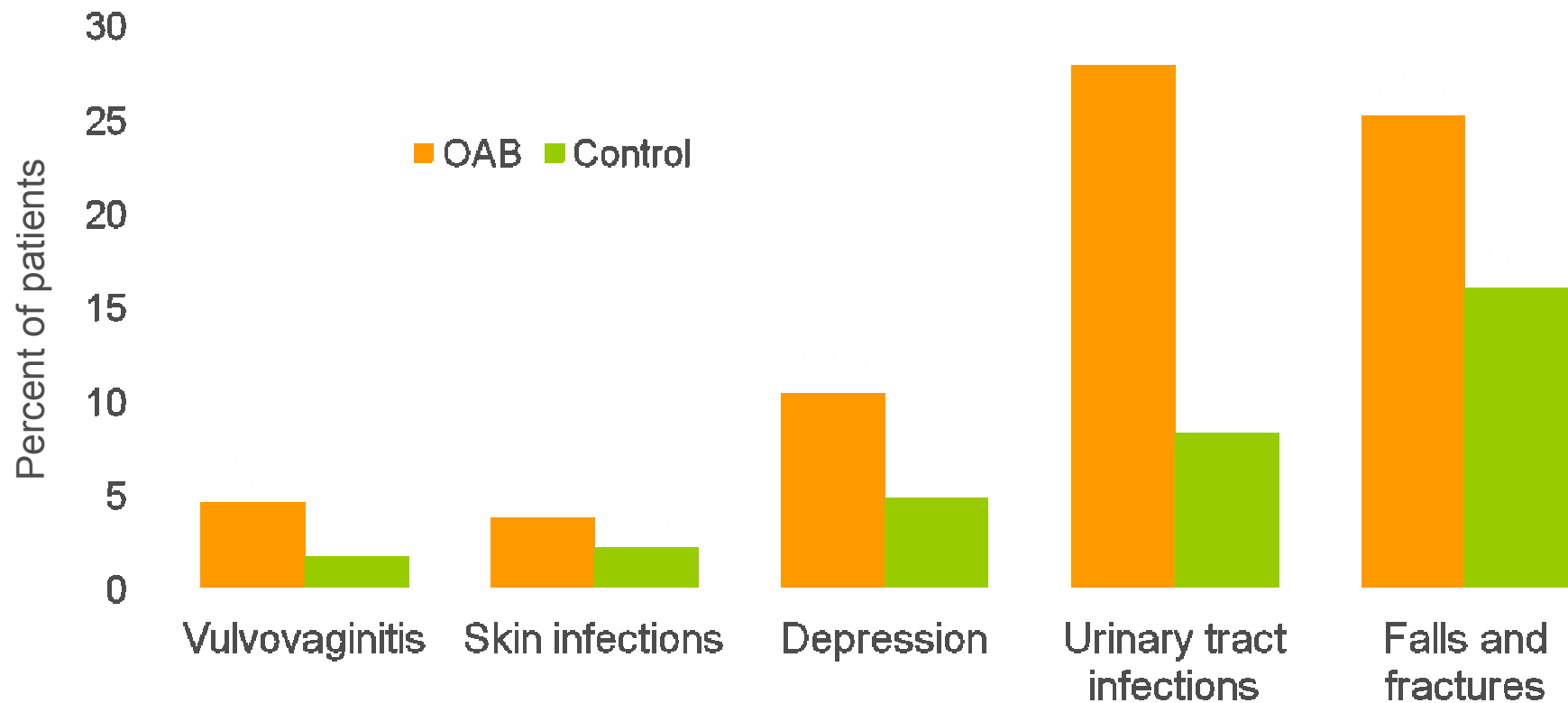
- 17% of adults > 18 y/o
- Increases with age (30% over the age of 65)
- 63% of OAB patients are continent
- 37% of OAB patients are incontinent

Prevalence of OAB Compared with Other Chronic Conditions



National Centers for Health Statistics. FastStats. <http://www.cdc.gov/nchs/fastats/default.htm>. Accessed February 5, 2010; American Diabetes Association. Diabetes Statistics. <http://www.diabetes.org/diabetes-basics/diabetes-statistics/>. Accessed February 8, 2010; Hu T, et al. Urology. 2004;63(3):461-465.

Prevalence of OAB Comorbidities



Adapted from Darkov T, et al. *Pharmacotherapy*. 2005;25:511-519.

Falls & Fractures

- In women > 65 years with urge incontinence 1 or more times per week
 - 19 - 42% sustain falls
 - Fractures occur in 4–9% of falls
 - Frequent urge incontinence found to be an independent risk factor for falling (OR = 1.26)

Why Patients Don't Seek Care

- Embarrassment
- Failure to see symptoms as abnormal
- Belief that symptoms are self-limited
- Perception of lack of treatment efficacy
- Fear of procedure
- Fear of cost of treatment

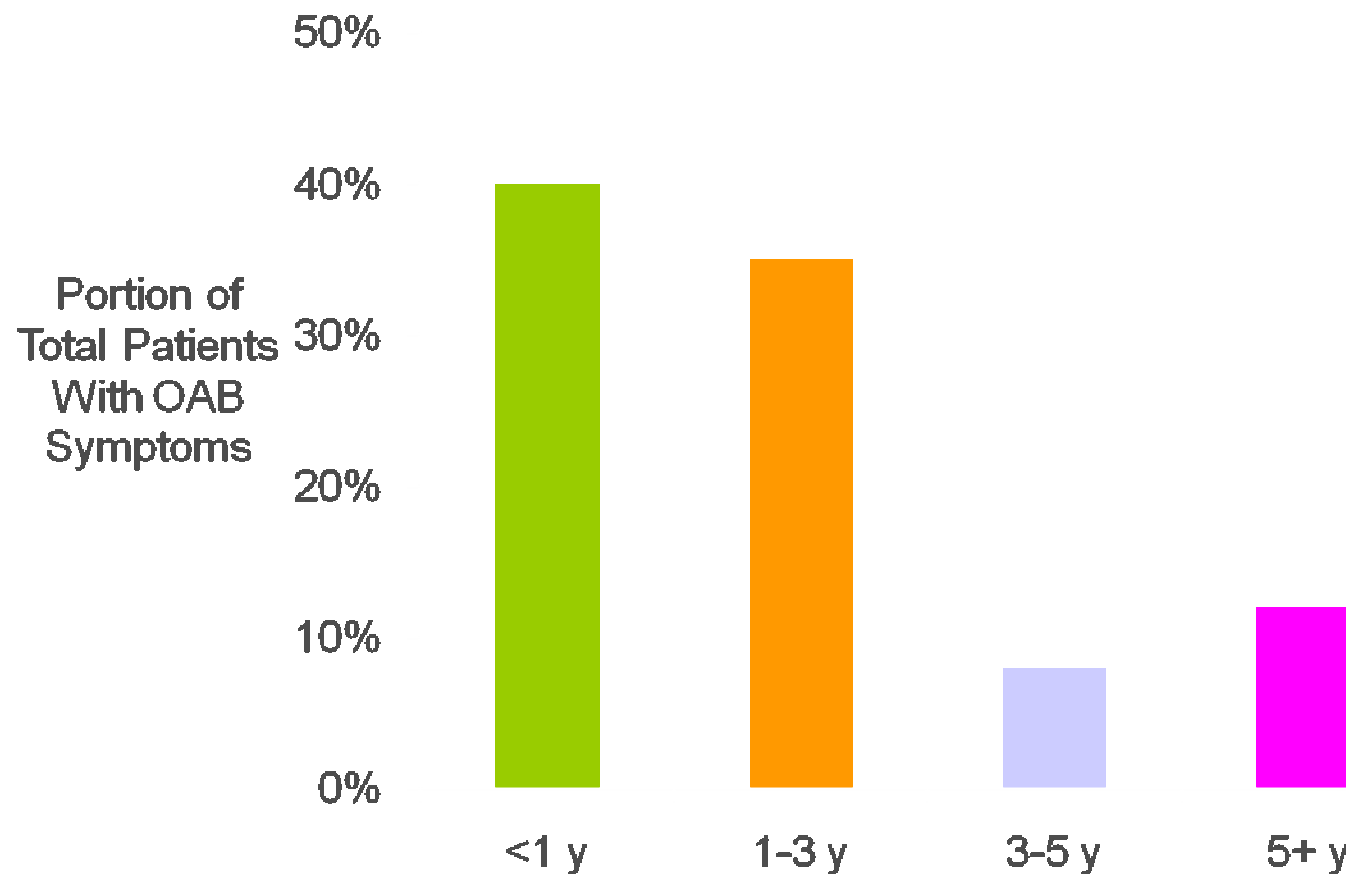
Clinician Factors

- Dismisses symptoms as unimportant
- Considers OAB a natural part of aging
- Perceives treatment is ineffective
- Unaware of the differential diagnosis

Clinician Factors

- Dismisses the impact on Quality of Life
- Does not consider potential complications:
 - Depression
 - Skin infections
 - Falls & fractures

Elapsed Time Before Seeking Treatment

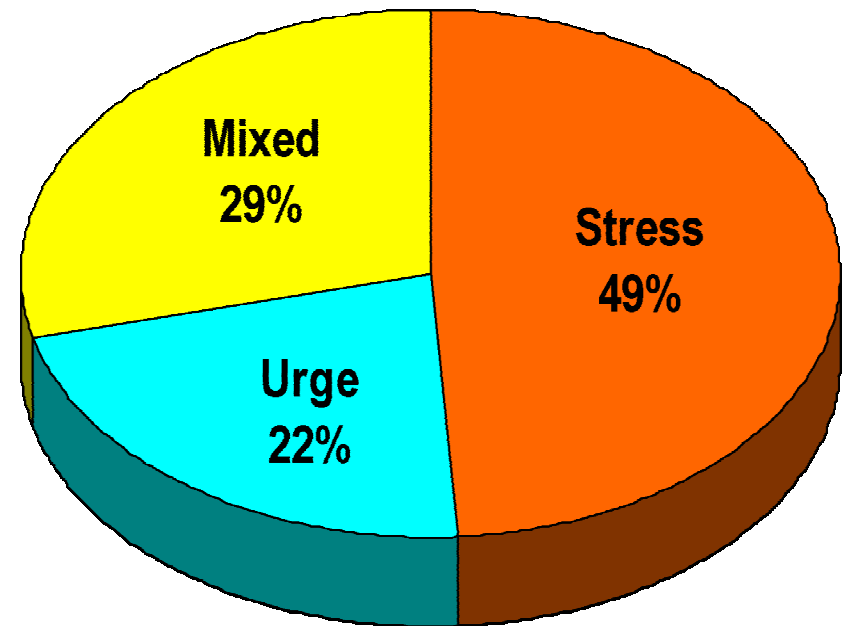


Harris Interactive, 2001.

Dmochowski RR et al. *Curr Med Res Opin.* 2007;23(1):65-76.

Three major types of incontinence

- Stress Incontinence
- Urge Incontinence
- Mixed Incontinence



OAB, SUI, and UTI

Symptoms	OAB	SUI	UTI
Urgency	Yes	No	Yes
Frequency	Yes	No	Yes
Leaking during physical activity	Sometimes	Yes	No
Amount of leakage	Variable	Variable	Small
Urge incontinence	1/3	No	Sometimes
Nocturia	Usually	sometimes	Usually
Urinalysis & culture	Normal	Normal	Abnormal

Clinical Presentation of OAB

- “I have OAB” – the patient self diagnoses
 - The patient complains of lower urinary tract symptoms (LUTS) & the primary health care provider (PHCP) elicits OAB symptoms
 - The PHCP probes a reluctant patient who admits she has OAB symptoms
-

Differential Diagnosis in Women

Uro-gynecologic

- Urinary tract infection
- Stress incontinence
- Pelvic organ prolapse
- Neurogenic bladder
- Postsurgical
- Interstitial cystitis
- Urethral diverticulum
- Bladder cancer

Medical

- Polyuria / polydipsia
- Diabetes
- Congestive heart failure
- Medications

Diagnostic Evaluation

- History & questionnaire
 - Physical exam
 - Urinalysis & culture
 - Bladder diary
-

Focused History & Questionnaire

- Lower urinary tract symptoms
 - Diabetes
 - Neurologic disorders
 - Recurrent UTI
 - Hematuria
 - Kidney stones
 - Prior lower abdominal / pelvic surgery
 - Women – prolapse, vaginitis
-

LUTS Symptoms

Storage Symptoms

- Urinary Frequency
- Urgency
- Nocturia
- Incontinence
- Pain

Voiding Symptoms

- Hesitancy / Weak Stream / Straining
 - Incomplete emptying
 - Pain
 - Post-void dribbling
-

Useful Questions for OAB

- “Are you bothered or worried by your urine control?”
 - “Do you have strong, sudden urges to urinate?”
 - “Do you go to the bathroom so often that it interferes with your activities?”
 - “Do you frequently get up at night to urinate?”
 - Do you leak urine on the way to the bathroom?”
-

Neurologic Disorders

- Multiple sclerosis
 - Stroke
 - Parkinson's disease
 - Spinal cord Injury
 - Spina bifida
-

Physical Examination

- General
 - Neurologic
 - Urologic / gynecologic
 - Neuro-urologic
-

Physical Examination

Vaginal exam:

- Assess perineal sensation, reflexes
 - Assess post-void residual volume
 - Atrophic vaginitis
 - Pelvic organ prolapse
 - Masses
 - Tenderness
 - Urethral diverticulum
-

Pelvic Organ Prolapse

- Grade 0 - No descent
- Grade 1 - Descent halfway to hymen
- Grade 2 - At the hymen
- Grade 3 - Halfway past hymen
- Grade 4 - > Halfway past hymen



Grade1 POP



Grade 2 POP



Grade 3 POP

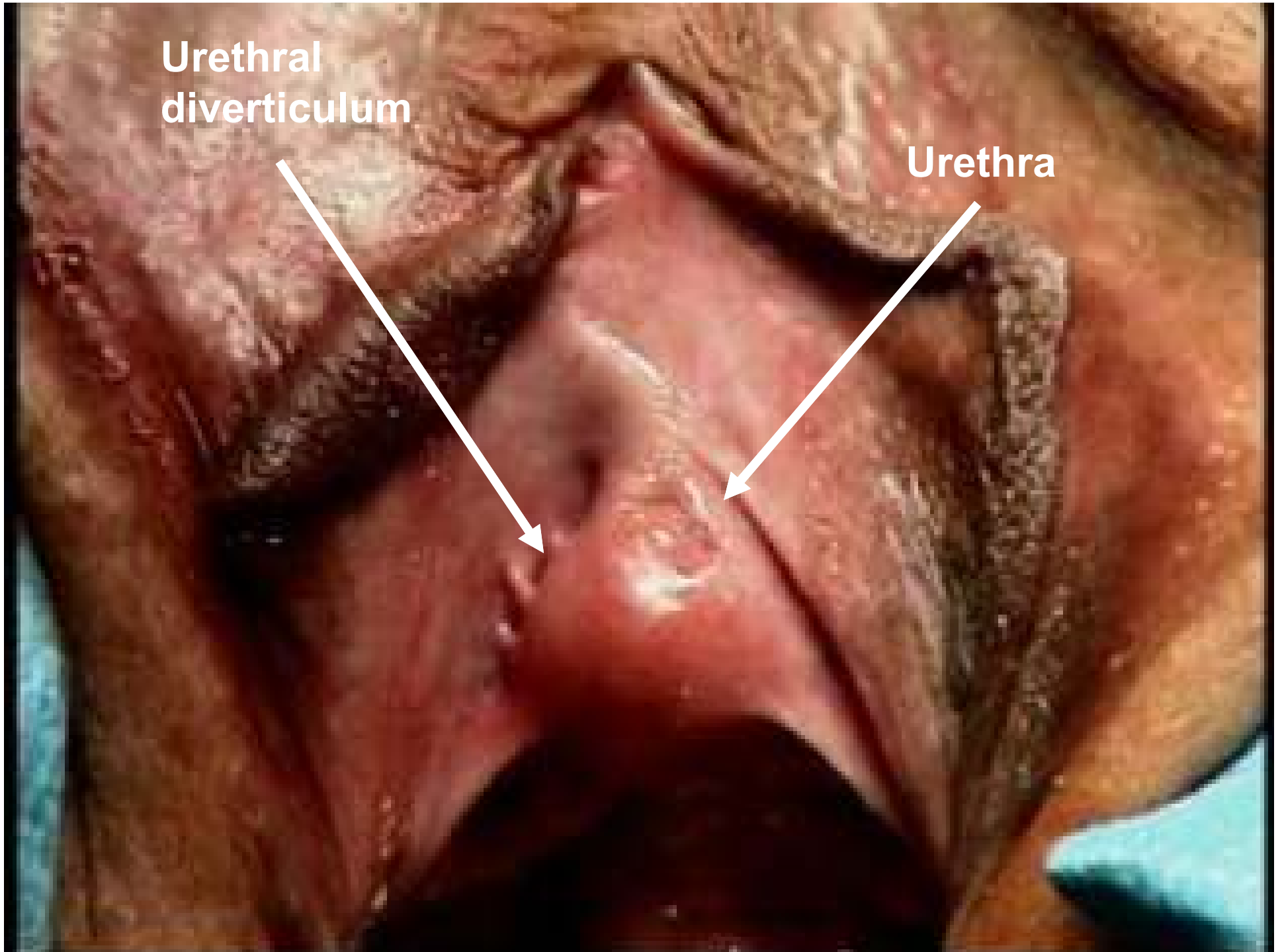


Grade 4 POP



**Urethral
diverticulum**

Urethra



Bladder Diary

- Time of urination
- Voided volume (estimated or measuring cup)
- Description of symptoms

A re-useable, folding measuring container can be purchased at Life-Tech.com

OAB BLADDER DIARY
Uro-Center of New York
Phone (212)772-3900 Fax: (212)772-1919

Name: _____

Date: _____

Time of Day Diary Started: _____ ☐ AM ☐ PM

Time you went to bed: _____ Time you got up for the day: _____

Time of Urination and/or Incontinence Episode	Why did you urinate at this time? (see question # (a) for responses)	Amount of urination (measure with a cup in cc's, ml's, or ounces)	Incontinence grade (see question # (b) below for responses)
1)			
2)			
3)			
4)			
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			

Another bladder diary is available for download at <http://kidney.niddk.nih.gov/kudiseases/pubs/diary/index.htm>

Variable	All Patients Mean (Median)	Male Mean (Median)	Female Mean /Median
Volume Day ml		1267 (1105)	1261 (1126)
Volume Night ml		446 (408)	468 (414)
Frequency Day		6.1 (6.0)	6.7 (6.5)
Frequency Night		0.4 (0.3)	0.4 (0.3)
Bladder Capacity day		250 (234)	229 (220)
Bladder capacity night		334 (309)	332 (294)
24hr Volume	1730 (1576)	1713 (1512) *	1729 (1619)*
24hr Frequency	7.1 (7.0)	6.5 (6.3) *	7.1 (6.8) *

OAB symptoms in women

History & PE

Urinalysis +/- culture

Hematuria
Severe POP
SUI
Recurrent UTI

OAB

Empiric OAB Rx

Refer to urologist
or gynecologist

Fail



Treatment

- Treatment of remediable condition
 - Behavioral therapy
 - Bladder retraining
 - Timed voiding
 - Physiotherapy
 - Pharmacotherapy
 - Estrogen
 - Anti-muscarinics (anti-cholinergics)
 - Tricyclic antidepressants
-

Remediable Conditions in Women

Uro-gynecologic

- Pelvic organ prolapse
- Stress incontinence
- Urethral diverticulum
- Bladder & ureteral stones
- Bladder cancer

Primary Care

- UTI
- Polyuria / polydipsia
- Diabetes
- Congestive heart failure
- Medications

Slide 39

RD2

Can take out (repetitive)
Roxanne Donnelly, 04/16/2010

Bladder Retraining

- Educational and behavioral processes used to re-establish control of urinary incontinence
 - Scheduled voiding regimen with gradually progressive voiding intervals
 - Urgency control strategies
 - Self-monitoring of voiding behavior (diaries)
 - Positive reinforcement by clinician
-

Bladder Retraining: General Principles

- Patient completes a 24 hour bladder diary
 - Health care provider & patient review diary
 - Recognize patterns
 - Develop Rx strategies
 - Usually accomplished in 3 – 6 weekly visits
-

Pattern Recognition

Pavlovian

- Garage door
- Door key
- Elevator
- Running water
- Sitting to standing

Non-Pavlovian

- Relationship to bladder volume
- Types of food or fluid consumed
- Preoccupation
 - Computer, Reading
 - Movie

No Pattern

Slide 42

RD3

Can take out (repetitive)
Roxanne Donnelly, 04/16/2010

Bladder Retraining: General Principles

- Patient completes a 24 hour bladder diary
 - Health care provider & patient review diary
 - Recognize patterns
 - Develop Rx strategies
 - Usually accomplished in 3 – 6 weekly visits
-

Treatment Strategies

- Adjust type & amount of fluid Intake consistent with basic fluid requirements
 - Fluid restriction may be dangerous, particularly in the elderly
 - Adjust inter-voiding interval
 - Practice control mechanisms
-

The more you drink



**The
more
You
urinate**

Lifestyle Changes

- Moderate fluid intake
 - Avoid dietary bladder irritants (ie, EtOH, caffeine, tomatoes, citrus)
 - Improve patient mobility
 - Address coexisting health issues
 - Improve bowel habits/regularity
-

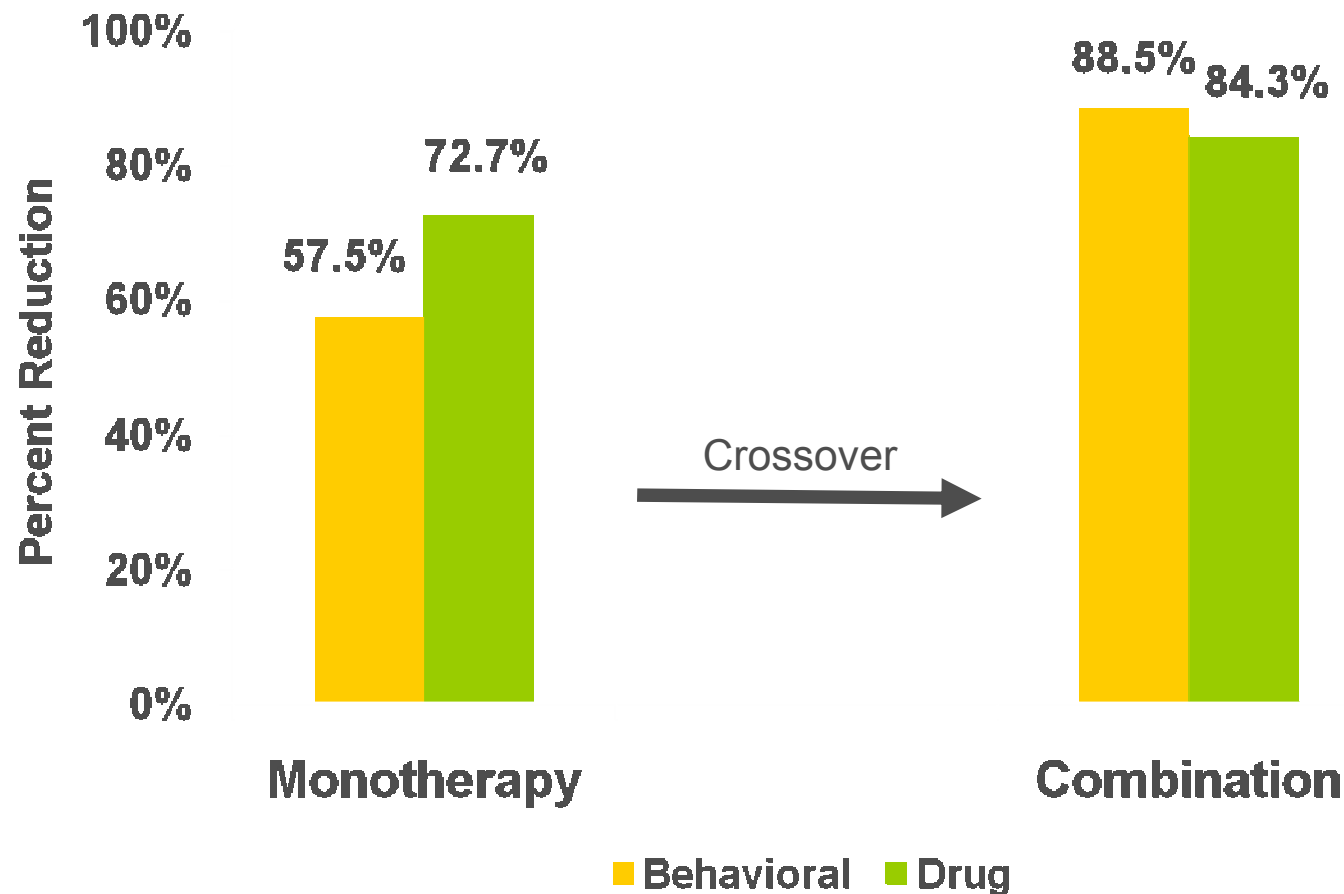
Control Mechanisms (the “Knack”)

- Anticipate those activities that bring on symptoms
 - Contract pelvic muscles quickly
 - Wait until the urge subsides do not rush — stop and stay still
 - Concentrate on suppressing the urge
 - Walk to the bathroom at a normal pace
-

What about bladder retraining?

- Incontinence reduced 50%-87%
- Biofeedback helps patient satisfaction but not incontinence response
- Bladder retraining (on protocol) can be as effective as meds for urge incontinence
- Bladder retraining + pelvic muscle rehab probably better than retraining alone
- Better chance to get DRY

Combination Therapy Reduction in Incontinence



Limitations of Behavioral Therapies

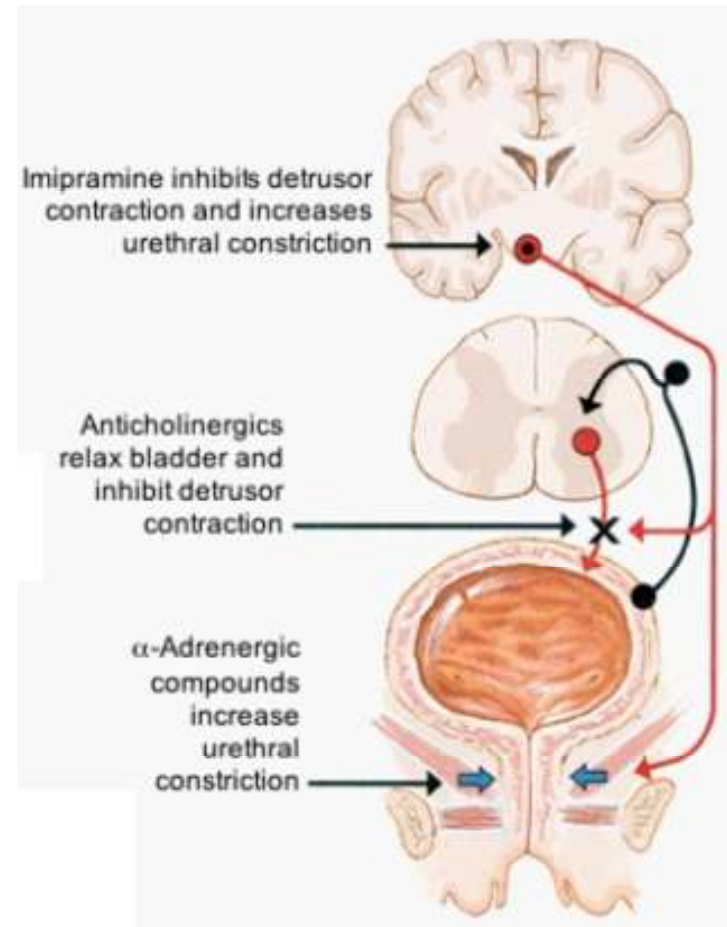
- Requires motivation and compliance
 - Require a skilled and trained therapist
 - Generally inadequate insurance coverage
-

Pelvic Floor Muscle Exercises (PFME)

- Designed to strengthen PFM
 - Primarily used in patients with SUI and as part of normal exercise program to maintain “pelvic health”
 - Also used to teach the “knack”
 - Biofeedback may be useful for teaching & monitoring
-

Pharmacologic Treatments

- Estrogen
- Antimuscarinics
 - Non-selective
 - Selective
- Tricyclic antidepressants
- Botulinum toxin

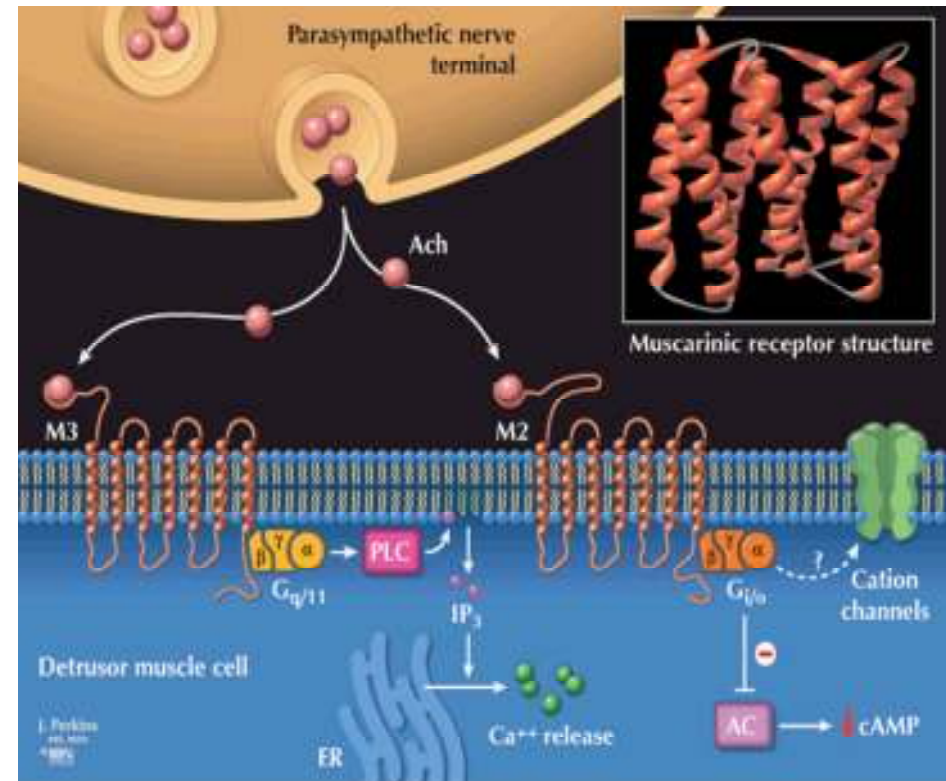


Estrogen

- Overall subjective improvement in individuals with incontinence¹
- Improvement more likely with urge incontinence
 - Combined estrogen and progesterone appears to reduce likelihood of cure or improvement
- Estrogen therapy may *worsen* stress incontinence²

Neurotransmitters

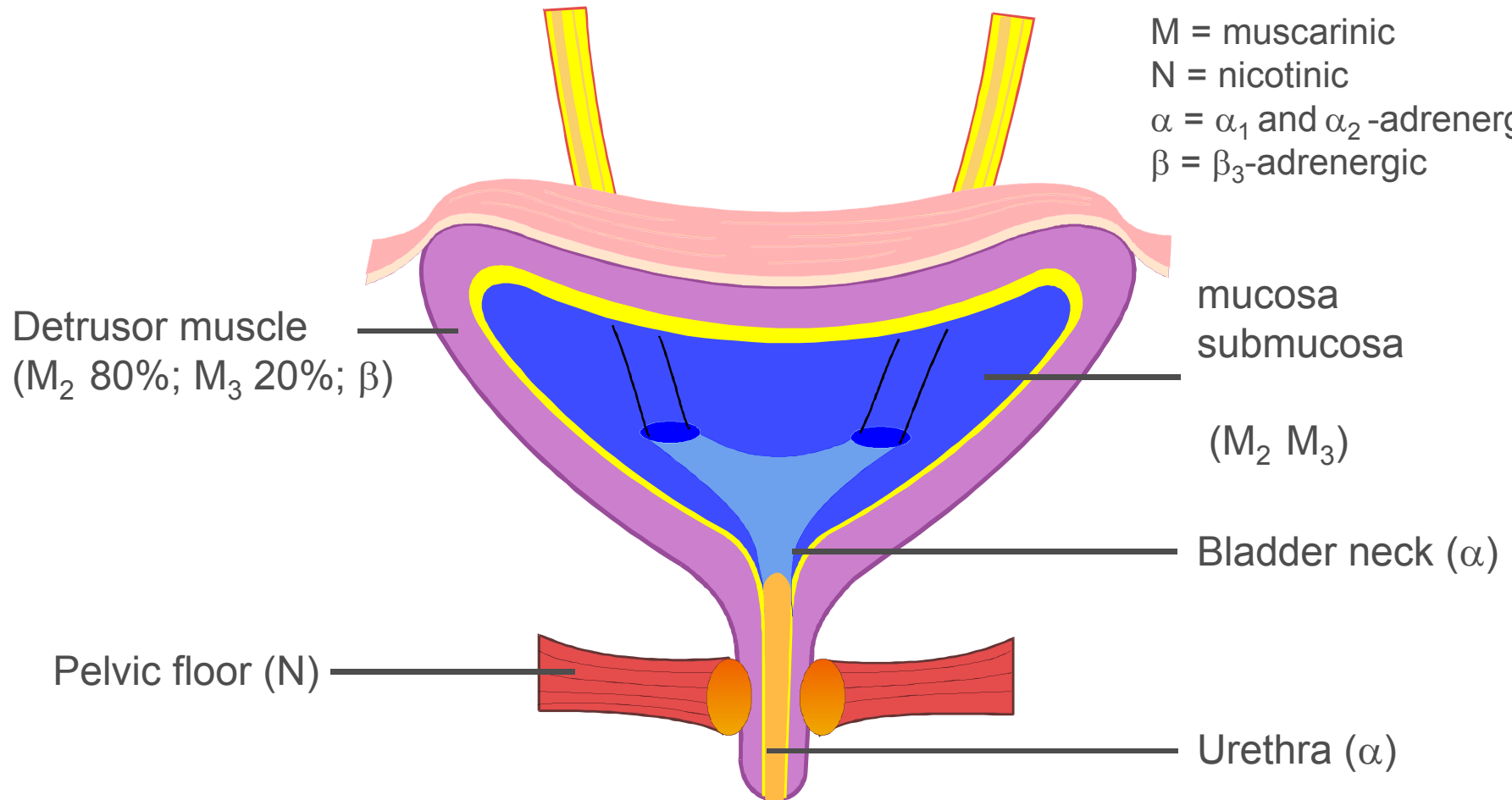
- Acetylcholine
- Main neurotransmitter at nerve endings on detrusor
- Five subtypes of muscarinic receptors
- M1-M5
- M3 receptors = responsible for detrusor contraction



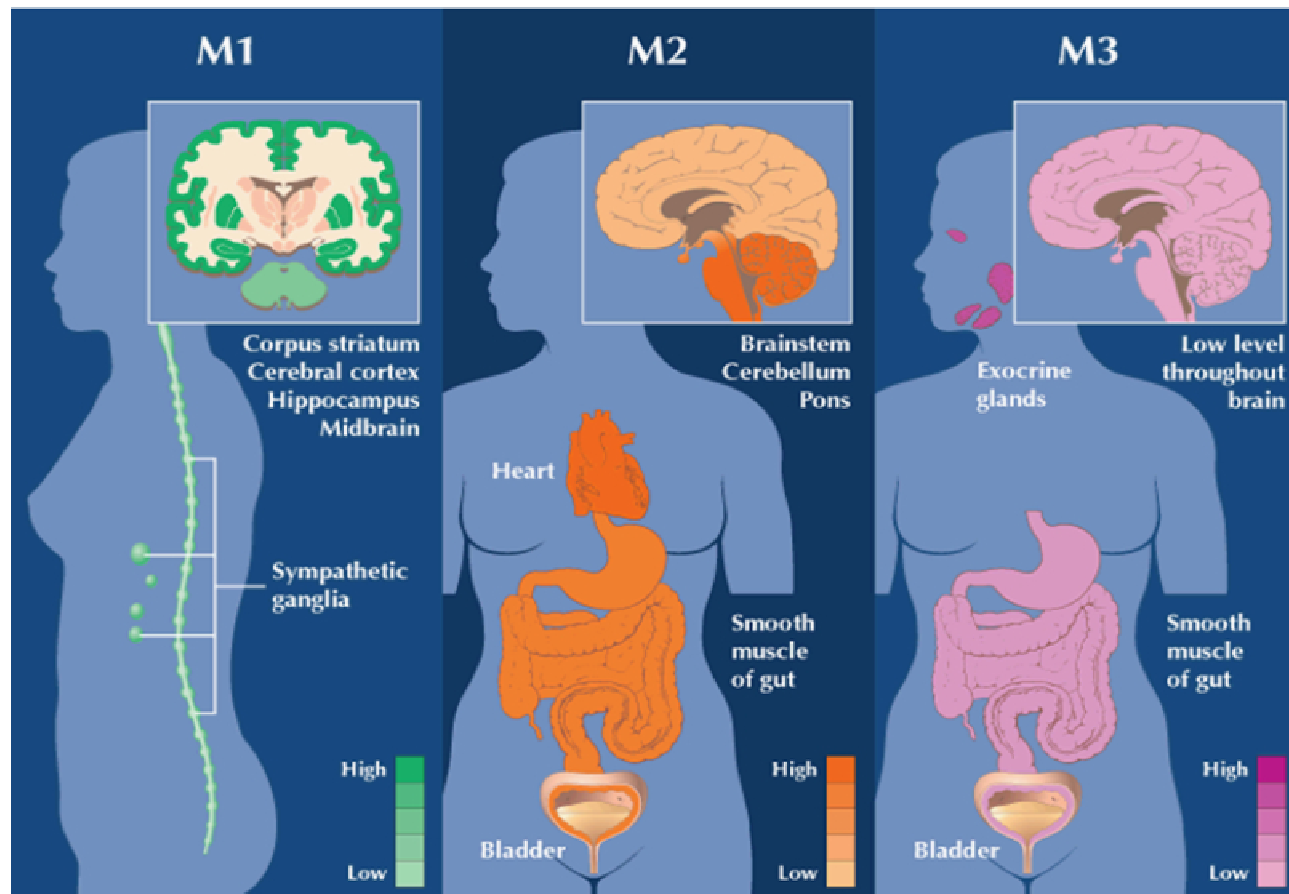
Muscarinic Receptors at a Neuromuscular Junction

Distribution of Cholinergic and Adrenergic Receptors

M = muscarinic
N = nicotinic
 α = α_1 and α_2 -adrenergic
 β = β_3 -adrenergic

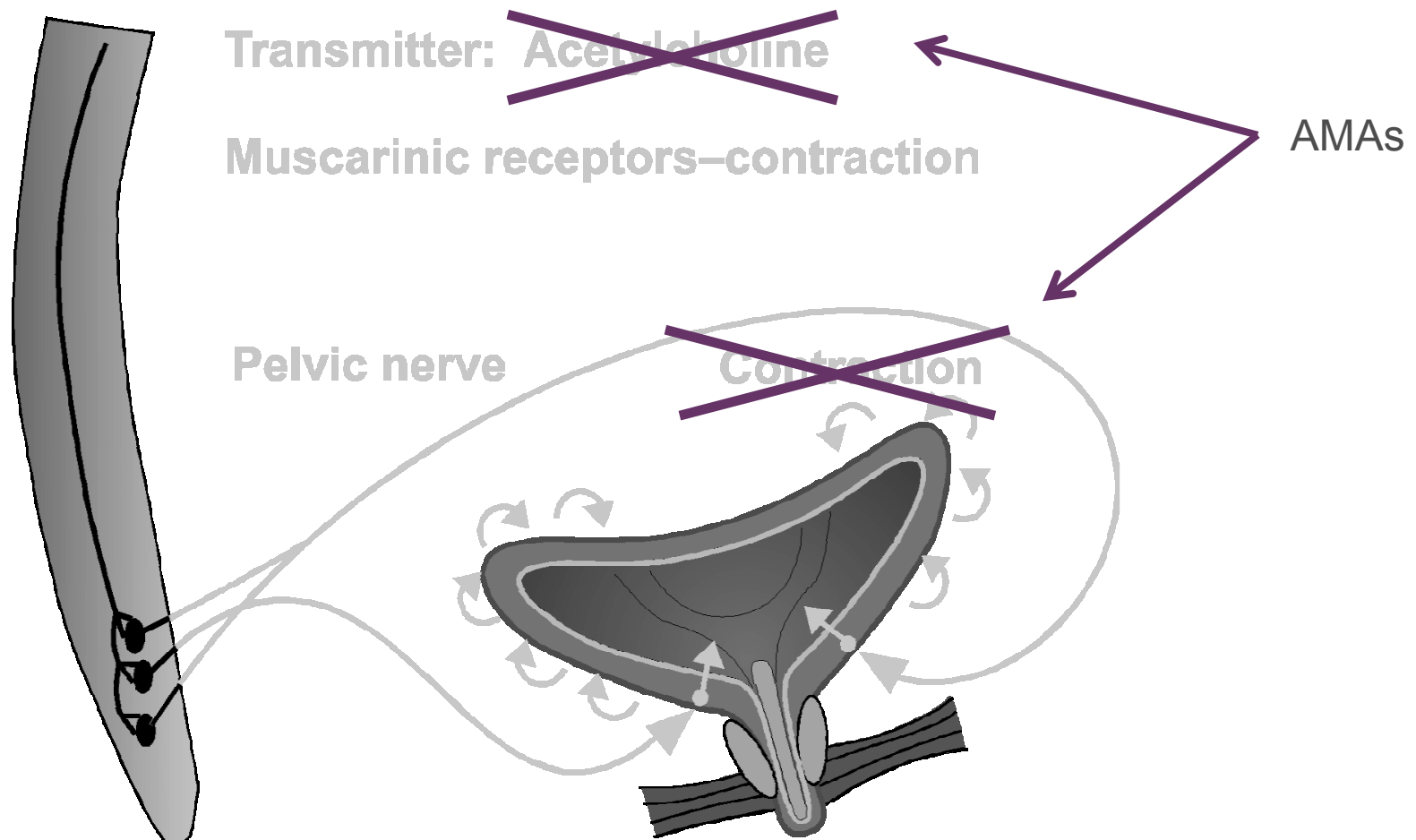


Acetylcholine is neurotransmitter in many other organs



Distribution of muscarinic receptors throughout the body

Parasympathetic Innervation



Acetylcholine (Ach) stimulates muscarinic receptors that cause detrusor contraction

Anticholinergics (Antimuscarinics)

- Oxybutynin (Ditropan[®], Oxytrol[®])
 - Immediate
 - Extended
 - Patch/gel
 - Tolterodine (Detrol[®])
 - Immediate
 - Extended
 - Trospium chloride (Sanctura[®])
 - Darifenacin (Enablex[®])
 - Solifenacin succinate (VESIcare[®])
 - Fesoterodine fumarate (Toviaz[™])
- } M3 specific?
-

Are There Differences Between Antimuscarinics?

- Efficacy – all about the same
 - Safety – all about the same
 - Side effects & tolerability – individual variation based on:
 - Receptor selectivity
 - Serum concentration of the active drug
-

Efficacy of Anti-muscarinic agents (AMAs)

	% reduction
Urgency	44 – 63%
Urge incontinence	57 – 77%
Frequency	17 – 28%

Sand PK. *Eur Urol* 2007;S6:438–43; Hegde SS. *Br J Pharmacol* 2006;147:S80–S87; Hashimoto K *et al. Urol Internationalis* 1999;62:12–164.; Freeman R *et al. Obstet Gynecol* 2003;102:605–11; Chapple CR *et al. Eur Urol* 2005;48:464–70

Anti-cholinergic trials

OBJECT

- Oxybutynin ER 10mg QD vs tolterodine IR 2 mg BID
 - Double-blind RCT at 37 US sites
 - 332 men and women with OAB for 12 wks
- Findings:
 - Oxybutynin ER more effective in reduction of UUI episodes, total incontinence, and frequency
 - Adverse effects and tolerability similar
- Limitations:
 - Different formulations and dosages (extended vs immediate release)
 - No QOL data

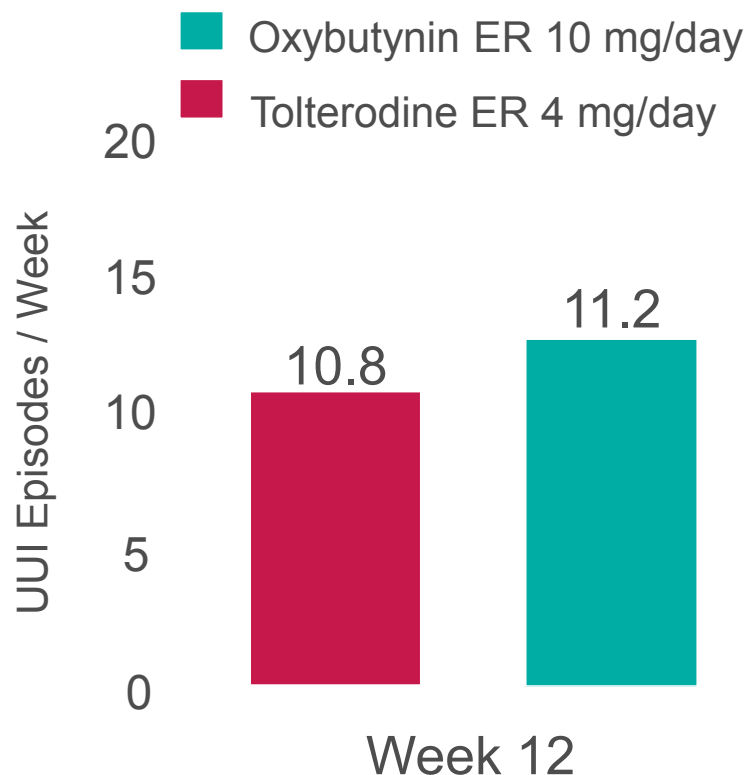
Anti-cholinergic trials

OPERA

- Oxybutynin ER 10 mg/d (n=391) vs Tolterodine ER 4 mg/d (n=399)
- Randomized, 12-week, double-blind, active-control, multicenter trial
- Adult females with severe OAB
- Avg 37 incontinent episodes/wk
- Avg 10 voids/24 hrs

OPERA Results

Mean UUI Episodes at Week 12 (End of Study)



- No difference in mean weekly UUI episodes at wk 12
 - 10.8 vs 11.2 ($P=0.28$)

OPERA Results

- Oxybutynin more effective at reducing frequency
 - More completely dry with oxybutynin
 - 23% oxybutynin vs 16.8% tolterodine
 - More dry mouth with oxybutynin
-

Oxybutynin vs Tolterodine - Summary

- Equally effective at reducing urgency and urge incontinence
 - Oxybutynin may be superior at decreasing frequency but more dry mouth
 - Discontinuation rates similar
 - Both have compliance issues due to side effects
 - Both improve QOL
 - No head-to-head trials comparing QOL
-

Safety

- CNS
 - Cognitive dysfunction (particularly in elderly)
 - Memory impairment
 - Cardiac
 - Heart Rate
 - QTc interval
-

Cognitive Side Effects

- Depend on
 - Whether drug crosses blood brain barrier (BBB)
 - Premorbid cognitive status
 - Receptor subtype (M1, ?M4, ?M5)
 - Factors that promote diffusion across BBB:
 - cerebrovascular disease (stroke, aneurysm)
 - multiple sclerosis & spinal cord injury,
 - diabetes mellitus,
 - fever
 - aging
-

Cognitive Side Effects

- Oxybutynin adversely affects cognition
 - Darifenacin, solifenacin & tolterodine do not
 - Fesoterodine & trospium probably do not
-

Side effects

- Dry eyes
- Dry mouth
- Constipation
- Urinary retention

Narrow (closed) angle glaucoma =
contraindication to use

Vast majority of pts discontinue
anticholinergics by 1 year!!!

Tricyclic Antidepressants

- Imipramine & amitryptiline
 - Inhibit uptake of norepinephrine & serotonin
 - Anticholinergic & sympathomimetic effects
 - Suppress detrusor contractions
 - Increase outlet resistance by urethral contraction
 - Not FDA approved for OAB
 - Not used as primary treatment
 - Effects are additive to anticholinergics
 - Usually used in combination with AMA's
-

What do I do?

- Start with either tolterodine or oxybutynin
 - If pt with cognitive issues, use darifenicin (caution in pts with constipation), tolterodine, or solifenacin
 - 2nd line: non-generics
 - Consider adding tricyclics if OAB sx refractory and pt tolerating anticholinergic side effects
-

Specialty Treatments for Refractory OAB

- Botulinum toxin injections into bladder (50 – 80% success, but requires repeated injections)
 - Neuromodulation (56 – 90% success)
 - Enterocystoplasty (> 90% success)
 - Urinary diversion (>90% success)
-

Conclusion

- OAB is a symptom complex with a wide differential diagnosis
 - It is common, prevalence about 17%
 - Initial Dx & Rx are appropriate for the PCHP
 - Behavior modification and AMAs are effective in the majority of patients, but the latter is limited by side effects
-

When to Refer to a Specialist

- Hematuria
 - Diagnosis unclear
 - Voiding symptoms
 - Pelvic organ prolapse
 - No Rx response
 - Elevated PVR
 - Prior pelvic surgery
 - Bladder pain
 - Neurologic disease
-