

1

## Faculty/Presenter Disclosure

Faculty: Henry Tran, MD

- Relationships with commercial interests:
  - Grants/research support:
  - Speakers bureau/honoraria:
    - ICPDHM, speaker honoraria
    - CUA, scholarship foundation
  - Consulting fees:
  - Patents:
  - Other:
    - Pfizer, incontinence fellowship award

2

## Disclosure of Financial Support

- This program has received financial support through Pfizer in the form of an educational grant.
- This program has received in-kind support from Pfizer in the form of logistical support.
- Potential for conflict(s) of interest:
  - Henry Tran, MD has received an honorarium from the physician organization International Centre for Professional Development in Health and Medicine (ICPDHM)
  - Pfizer distributes and benefits from the sale of products that will be discussed in this program

3

## Mitigating Potential Bias

- Information/recommendations in the program are evidence- and/or guidelines-based; opinions of the Speaker will be identified as such.
- The program was developed and reviewed by a Scientific Planning Committee composed of independent third-party experts responsible for vetting the program's needs assessment and content development to ensure accuracy and fair balance.
- The program was reviewed by selected CFPC reviewers and approved for submission for accreditation.
- The Speaker completed the CFPC Mainpro® Declaration of Conflict of Interest form evidencing compliance with Mainpro® requirements, a requisite for this program to be given accredited status.

4

## Disclaimer

- This presentation is for educational purposes only. It was developed by a group of independent subject-matter experts convened for this purpose.
- The opinions expressed in this presentation are not necessarily those of the sponsor, and neither product descriptions nor opinions should be attributed to the sponsor.
- The sponsor does not recommend any use of its products that is inconsistent with the product monographs of such products.

5

## Certification

This Group Learning program has been certified by the College of Family Physicians of Canada and the British Columbia Chapter for up to 1.00 Mainpro+ credits.

6

## The Case of Millie



7

## Learning Objectives

After completing this module, participants will be more effective at:

- Identifying factors that can interfere with safe and effective pharmacological management of overactive bladder (OAB) in the frail elderly
- Safely modifying pharmacological treatment of OAB in the frail elderly to improve tolerability

8

## Common Types of Urinary Incontinence (UI) in Adults

- **Stress urinary incontinence (SUI)**: involuntary leakage associated with exertion, sneezing, or coughing
- **Urgency urinary incontinence (UUI)**: involuntary leakage immediately preceded by or associated with a sudden desire to void, e.g., overactive bladder (OAB)
- **Mixed urinary incontinence (MUI)**: combination of UUI and SUI
- UI may be associated with other **lower urinary tract symptoms (LUTS)**, e.g., the storage, voiding, and post-micturition symptoms of benign prostatic hyperplasia (BPH)

Bentzen N, et al. Geriatr Assess J 2012;6(5):354-61.

9

## Polling Question 1 - Using the Response Cards

What percentage of your older adult patients is affected by one of these common types of urinary incontinence?

- A. <50%
- B. 50-80%
- C. >80%
- D. Most if not all!

10

## Introduction to Millie

- 81-year-old female
- Treated for OAB for the past 3 weeks



OAB, overactive bladder.

11

## Presenting Complaint

- Millie comes to the clinic with her daughter
- Millie has been complaining of dry mouth since starting treatment for OAB 3 weeks ago

*"Could this be caused by the medication?"*



OAB, overactive bladder.

12

## Patient History



### Prior medical history

- Osteoarthritis
- Hypertension
- Non-valvular atrial fibrillation

### Psychosocial/functional history

- Shares a home with her daughter and grandchildren
- Daughter helps with dressing and bathing, as well as all instrumental activities of daily living, including medication management
- Mobilizes with a 4-wheel walker

13

13

## Patient History (continued)



### Current medications

- Acetaminophen 650 mg four times daily as needed
- Amiodarone 400 mg once daily
- Dabigatran 110 mg twice daily
- Diltiazem 240 mg once daily
- Tolterodine extended-release 4 mg once daily (started 3 weeks ago)

14

14

## Clinical Exam



- Height: 157 cm; weight: 41 kg
- Body mass index (BMI): 16.0 kg/m<sup>2</sup>
- Pulse, prone: 78 beats per minute (BPM); seated: 82 BPM
- Blood pressure, prone: 118/76 mmHg; seated: 124/80 mmHg
- Lungs: clear to auscultation bilaterally, normal respiratory effort
- Abdominal exam: no tenderness, masses, rigidity, or distension
- Oropharynx exam: normal appearance
- Mental status: alert, oriented to person, place, time; able to state months in reverse order

15

15

## Most Recent Laboratory Results (1 Month Prior)



- Prothrombin time - INR: 2.1
- Sodium: 143 mmol/L
- Potassium 3.8 mmol/L
- Chloride: 96 mmol/L
- Creatinine: 58 μmol/L
- Estimated glomerular filtration rate (eGFR): 92 mL/min
- Fasting blood glucose: 5.6 mmol/L
- Urinalysis: negative for glucose, blood, ketone, protein, nitrite, leukocyte esterase, bacteria

16

INR, international normalized ratio.

16

## Patient/Caregiver Interview



- Millie reports that it's hard to swallow food due to dry mouth; sips water with food to help, but is afraid she will choke
- OAB symptoms of urgency, frequency, urge incontinence, and nocturia are improved
  - Millie's daughter is happy that Millie is dry and not sitting in wet incontinence underwear
  - Millie continues to wear incontinence underwear due to frequency of urination - "sometimes I can't make it to the toilet"

OAB, incontinence bladder

17

17

## Polling Question 2

Would you modify the dose of tolterodine or switch to another medication?

- Modify dose of tolterodine
- Switch to a different antimuscarinic
- Switch to a beta-receptor agonist
- None of the above

18

18

## Challenges with Older Patients: Changes in Pharmacokinetics/Pharmacodynamics

Change in older adults	Clinical significance
Changes in gastric acidity affecting absorption	Potential reduction in absorption of weakly basic drugs Potential enhanced absorption of weakly acidic drugs*
Reduced carrier-mediated permeability	Reduced absorption of certain nutrients
Reduced first-pass metabolism	May or may not be relevant depending on the extent of first-pass metabolism and therapeutic indices
Reduced hepatic blood flow by 20-50%	Reduced clearance of drugs with high extraction ratios
Reduced phase I metabolizing capacity	Reduction in metabolism of some drugs that undergo Phase I metabolism
Reduced renal function	Reduced elimination of drugs, depending on the renal function of the individual

Supplemental data slides approved by Scientific Planning Committee as back up data - not accredited

\*When increased pH is present.

Reeve C, et al. Expert Opin Drug Metab Toxicol 2015;11(5):491-505.

19

19

## Polling Question 3

Which factor do you consider most important when selecting an OAB medication for older adults?

- Frailty of patient
- Comorbidities and current medications
- Potential adverse effects of medication
- Anticholinergic burden of medication

20

## Older Age and OAB Drugs

### Dosing

- Some OAB drugs may be effective at lower than standard doses in frail elderly persons with concomitant decreased adverse effects

### Polypharmacy

- The likelihood of adverse drug reactions and drug interactions rises exponentially as the number of medications increases
- Consider changes to existing drug regimens in the management of OAB in all frail elderly people
- Drug-drug interactions for oxybutynin, solifenacin, darifenacin, and tolterodine include potent CYP3A4 inhibitors (azole antifungals, macrolide antibiotics, cyclosporin, vinblastine)

OAB, overactive bladder.  
Corcos, J. et al. *Can Urol Assoc J* / 2015;11(12):E142-53.

21

21

## Older Age and OAB Drugs (continued)

### Potential adverse drug effects (ADEs)

- Higher risk of ADEs from antimuscarinics in older adults due to age, comorbidity-related changes in muscarinic receptor number and distribution, blood-brain barrier transport, and drug metabolism<sup>1</sup>
  - Fesoterodine is less likely to cross the blood-brain barrier compared to other antimuscarinics<sup>2</sup>
- Antimuscarinic ADEs in the frail elderly can result in sedation, heat intolerance, delirium, and falls<sup>1</sup>
- Xerostomia is common in older people<sup>1</sup>
- Persons with pre-existing cognitive impairment (especially from conditions known to affect central cholinergic pathways) may be at greater risk for cognitive impairment<sup>1</sup>

OAB, overactive bladder.  
1. Corcos, J. et al. *Can Urol Assoc J* / 2015;11(12):E142-53.  
2. Wang, A. et al. *Age Ageing* 2017;46(5):828-9.

22

22

## Older Age and OAB Drugs (continued)

### Antimuscarinic effects on central nervous system (CNS)

- Antimuscarinics have the potential to cause memory deficits, sleep disruption, dizziness, confusion, and hallucinations
- Extent of CNS effects is determined by:
  - Potential of drug to penetrate the brain (i.e., ability to cross the blood-brain barrier) and to activate muscarinic receptor subtypes (M1-M5)
  - Potential of a patient to experience cognitive adverse events based on cognitive reserve and integrity of the blood-brain barrier
- The anticholinergic burden of antimuscarinics on cognitive function is not precisely documented due to methodological limitations of clinical studies

OAB, overactive bladder.  
Gill, D., et al. *JAMA Intern Med* 2015;175(1):491-7.  
Kiv, T., et al. *Eur Urol* 2006;50(2):317-26.

23

23

## Polling Question 4

If Millie had dementia, which of the following drugs would you be least likely to prescribe?

- Fesoterodine
- Mirabegron
- Oxybutynin
- Tolterodine

24

24

### Age-related Changes in Pharmacology and Potential Effect on Urinary Incontinence Drugs

Parameter	Age-associated change	Urinary incontinence drugs potentially affected
Absorption	Minimal quantitative change despite decreased gastric motility; little known regarding effect on slow-release agents	Extended-release preparations (e.g., extended-release oxybutynin)
	Decreased skin thickness	Transdermal preparations
Distribution	Decrease in lean body mass leads to ↓ volume distribution and ↓ half-life for hydrophilic drugs and lipophilic agents	Lipophilic agents (e.g., oxybutynin, solifenacin)
	Decreased protein binding in frail patients with low albumin, leading to higher concentration of free drug	Tolterodine
Hepatic metabolism	↓ hepatic blood flow and ↓ hepatic mass, leading to reduced clearance for agents with first-pass metabolism	Darifenacin, oxybutynin, solifenacin, tolterodine
	Cytochrome P450	Darifenacin, fesoterodine (S-hydroxymethyl tolterodine) (clearance only), mirabegron, oxybutynin, solifenacin, tolterodine
Clearance	Decrease in renal clearance	Fesoterodine (S-hydroxymethyl tolterodine), tolterodine

Conroy AJ et al. *Can J Pharm Med*. 2007;11(1):140-71.

25

### CNS Penetration Levels of Antimuscarinics



- The further left a drug appears, the lower the level of CNS penetration, i.e.:
  - Lower lipophilicity
  - Greater hydrogen bonding and molecular flexibility
  - P-gp substrate
  - Less brain penetration/binding potential (brain:plasma, CSF:free plasma, unbound brain:unbound plasma)
  - Fewer/minimal CNS adverse events

Supplemental data slides approved by Scientific Planning Committee as back up data - not accredited

CNS, central nervous system; CSF, cerebrospinal fluid; P-gp, P-glycoprotein; Colquhoun et al. *Br J Clin Pharm* 2011;132:26-46.

### LUTS FORTA Classification of OAB Medications

<b>FORTA-A (Absolutely)</b> Indispensable drug: clear-cut benefit in terms of efficacy/ safety ratio proven in elderly patients for a given indication	• None
<b>FORTA-B (Beneficial)</b> Drugs with proven or obvious efficacy in the elderly, but limited extent of effect or safety concerns	• Fesoterodine
<b>FORTA-C (Careful)</b> Drugs with questionable efficacy/safety profiles in the elderly; to be avoided or omitted in the presence of too many drugs, lack of benefits, or emerging side effects; review/find alternatives	• Darifenacin • Mirabegron • Extended-release oxybutynin • Solifenacin • Tolterodine • Trospium
<b>FORTA-D (Don't)</b> Avoid in the elderly, omit first, review/find alternatives	• Immediate-release oxybutynin • Propiverine

FORTA, Fx FOR The Agent; LUTS, lower urinary tract symptoms; OAB, overactive bladder; Saha N, et al. *Age Aging* 2015;44(2):143-55.

27

### Clinical Relevance of the FORTA Classification: VALFORTA Randomized Controlled Study

Adverse drug reaction (ADR)	Control group number of entries (patients)	FORTA group number of entries (patients)	Methodology and baseline:
All ADRs*	208 (207)	167 (202)	• 409 patients randomized to intervention or control group
Falls	39 (207)	41 (202)	• Physicians treating intervention group formally trained in FORTA classification
Renal failure*	47 (201)	30 (200)	• Median age: 83 years
Confusion	22 (200)	15 (200)	• Median diagnoses: 9
Nausea	20 (201)	15 (201)	
Dizziness	25 (201)	22 (201)	
Obstipation	6 (200)	9 (201)	
Diarrhea	7 (201)	8 (201)	
Dyspnea	22 (201)	14 (201)	
Cardiac decompensation	17 (201)	9 (201)	

- Key clinical endpoints:
  - ADRs are of specific geriatric relevance
  - The absolute risk reduction of 41/207 - 20% - corresponds to a number needed to treat of 5 patients to prevent 1 ADR

Supplemental data slides approved by Scientific Planning Committee as back up data - not accredited

\*n=505. FORTA, Fx FOR The Agent; VALFORTA, VALFOR The Agent; Working et al. *Age Aging* 2016;45(2):282-7.

## International Consultation on Incontinence: OAB Pharmacotherapy in the Frail Elderly

Level 1 evidence*	Fesoterodine is effective in ameliorating the symptoms of OAB in robust community-dwelling and medically complex older people Note: level 1 evidence is based on one study of cognitively intact patients; no randomized controlled trials (RCTs) of safety in frail elderly with dementia
Level 4 evidence†	Insufficient evidence to determine the efficacy, tolerability, and safety of the following agents in the frail elderly: a) intravesical oxybutynin, b) transdermal oxybutynin, c) trospium, d) tolterodine, e) darifenacin, f) solifenacin, g) mirabegron

\*Level 1 evidence: meta-analysis of RCTs or a good-quality RCT, or "all or none" studies in which no treatment is not an option.  
†Level 4 evidence: expert opinion, where opinion is based not on evidence but on first principles (e.g., physiological or anatomical) or bench research.

OAB, overactive bladder.  
Anderson KE, et al. Pharmacological treatment of urinary incontinence. In: Abrams J, et al, eds. Incontinence. 4<sup>th</sup> edition. 2017.

29

29

## Expert Commentary and Summary

- The frail elderly patient requires an individualized approach to OAB management, including treatment of urinary incontinence
  - Improving quality of life should be the focus of OAB management
  - Pharmacological therapy should be initiated only if the patient or their caregiver is sufficiently bothered by the patient's urinary incontinence and they feel medication may benefit quality of life
- Non-pharmacological interventions should be trialed prior to the initiation of pharmacological therapy
  - Prompted voiding, especially for those with cognitive impairment
  - Ensure patient consumes adequate fluid (6-8 cups of fluid/day)

OAB, overactive bladder.

30

30

## Expert Commentary and Summary (continued)

- Carefully review comorbidities and current medications prior to initiating pharmacological therapy for OAB
  - Optimizing treatment of comorbidities and/or deprescribing may lead to improvement in OAB symptoms
  - If the patient has multiple comorbidities/polypharmacy, they are more likely to develop adverse events from continence-related medications
- Avoid prescribing immediate-release oxybutynin to the frail elderly patient
  - Crosses the blood-brain barrier
  - Increased incidence of adverse effects in frail elderly patients

OAB, overactive bladder.

31

31

## Module 4: The Case of Mario



32

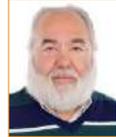
## Learning Objectives

- After completing this module, participants will be more effective at:
- Describing tools and techniques to differentiate lower urinary tract symptoms (LUTS) in older men
  - Identifying treatment options for older men with overactive bladder (OAB) and mixed OAB/benign prostate enlargement (BPE)
  - Explaining the reasons for referring men with LUTS to a urologist

33

## Introduction to Mario

- 68-year-old male
- Bothered by nighttime voiding, stating he wakes up to urinate 2-3 times per night



34

## Presenting Complaint

- Nocturia 2-3 times per night
- Frequent urination with urgency during waking hours (8+ times per day)



35

## Patient History

### Prior medical history

- Chronic obstructive pulmonary disease (COPD)
- Recurrent gastroesophageal reflux disease (GERD)

### Current medications

- Dexlansoprazole 30 mg once daily
- Tiotropium 1 inhalation once daily



36

## Patient Interview



### Symptoms

- Frequency: 8+ times per day
- Nocturia 2-3 times per night, most nights; small-volume voids
- Urgency: usually difficult to postpone urination
- Urge incontinence: leaking urine 2 or 3 times per week when rushing to get to the toilet
- Variable and hesitant urine stream
- Negative for pain on urination

37

37

## Patient Interview (continued)



### Symptom onset:

- Urgency/frequency/urge incontinence started "a couple of years ago"
- Nocturia for approximately 1 year
- Variable and hesitant urine stream more recent - approximately 6 months
- **Fluid intake:** 1-2 cups of coffee in morning; 2-3 diet colas per day; 4-5 bottles of beer per week, usually in the evening
- **Tobacco use:** 45 pack-year history; currently smokes 3-4 cigarettes per day
- Not aware of obstructive sleep apnea problem

38

38

## Patient Interview (continued)



### Quality of life

- Not sleeping well due to nocturia and feels tired all the time
- Frequent, urgent urination "gets in the way of living my life - I spend too much of my life in the bathroom"
- Hesitancy is frustrating

### International Prostate Symptom Score (IPSS)

- Scored 16 (moderate) for symptom severity (indicated higher scores for storage vs voiding symptoms)
- Scored 5 (unhappy) on quality of life question

39

39

## Clinical Exam



- Height: 178 cm; weight: 89 kg
- Body mass index (BMI): 28.1 kg/m<sup>2</sup>
- Blood pressure: 122/76 mmHg
- Abdominal exam:
  - Soft, nontender, nondistended
  - Normal bowel sounds
  - No masses on palpation
  - No tympany on percussion
- Digital rectal exam:
  - Prostate size approximately 3 fingerbreadths wide (-30-35 g)
  - No masses, nodules, tenderness
- No peripheral edema

40

40

## Polling Question 1

What is your provisional diagnosis for Mario?

- A. Overactive bladder (OAB)
- B. Benign prostate enlargement (BPE)
- C. Mixed OAB and BPE
- D. None of the above

41

## Follow-up Appointment

- Mario returns 2 weeks later to discuss lab test results and a management plan
- **Urinalysis:** negative for glucose, bilirubin, ketone, blood, protein; specific gravity 1.017, pH 6.0
- **Prostate-specific antigen (PSA):** 2.5 ng/mL
- **Voiding diary** (tracked for 2 days): sense of urgency consistently rated moderate to severe, rated leakage as 0 (none) or 1 (few drops); no pain associated with urination
- **Post-void residual (PVR) volume:** 80 mL

42

## Polling Question 2

How do you differentiate lower urinary tract symptoms in older men?

- A. Voiding/bladder diary
- B. International Prostatism Symptom Score (IPSS)
- C. Both A and B
- D. None of the above

43

## Tools to Aid in the Differential Diagnosis of LUTS in Men

## Voiding diaries

- **Micturition time chart:** to record the times of micturition during the day and night
- **Frequency volume chart:** to record volumes voided, as well as the time of each micturition, during the day and night
- **Bladder diary:** to record times of micturition and voided volumes, episodes of incontinence, pad use, and other information such as the degree of urgency, degree of incontinence, and fluid intake and type

LUTS, lower urinary tract symptoms.  
Abrams P, et al. J Urol 2013;190:Suppl:103-104.

44

## Tools to Aid in the Differential Diagnosis of LUTS in Men (continued)

### International Prostatism Symptom Score (IPSS)

- Assesses **frequency** of 3 storage symptoms (frequency, nocturia, urgency) and 4 voiding symptoms (feeling of incomplete emptying, intermittency, straining, weak stream)
- Bother score** assesses the degree of bother associated with the 7 symptoms: "If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?"

LUTS, lower urinary tract symptoms; Johnson P, et al. J Urol 2003;169(4):1053-101.

45

## BPE, OAB, or Mixed BPE-OAB?

	BPE	OAB
<b>Storage symptoms</b>		
Frequent urination	✓ (usually small amounts per episode)	✓ (≥8 times per 24 hours)
Urgency	✓	✓
Urge incontinence	+/-	+/-
Nocturia	✓	✓
<b>Voiding symptoms</b>		
Hesitancy	✓	-
Incomplete bladder emptying	✓	-
Straining to initiate/maintain urination	✓	-
Decreased force of stream	✓	-
Dribbling	✓	-

BPE, benign prostatic enlargement; OAB, overactive bladder; Johnson P, et al. J Urol 2013;189(4):1045-1051.

46

## Polling Question 3

What behavioural therapies and/or lifestyle changes would you prescribe to Mario to improve his lower urinary tract symptoms?

- Quitting smoking
- Decreasing his consumption of bladder irritants, such as carbonated beverages
- Relaxation techniques
- All of the above

47

## Management Recommendations for Botherful LUTS in Older Men

### OAB (storage symptoms), no evidence of BPE (voiding symptoms)

- Lifestyle changes, e.g., decrease bladder irritants (caffeine, alcohol, carbonated beverages), avoid fluids in the evening/after dinner, and encourage smoking cessation<sup>1</sup>
- Behavioural therapies, e.g., timed voiding, urgency suppression, relaxation techniques<sup>1</sup>
- Antimuscarinic or beta-3 agonist can be prescribed to augment lifestyle changes/behavioural therapies<sup>1</sup>
- If clinically indicated, investigate/treat obstructive sleep apnea<sup>2</sup>

BPE, benign prostatic enlargement; LUTS, lower urinary tract symptoms; OAB, overactive bladder.  
1. Gilling LJ, et al. Can Urol Assoc J 2017;10(10):E60-75.  
2. Semler P, et al. Sleep 2009;32(12):171-5.

48

## Polling Question 4

If Mario had mixed OAB-BPE, which of the following would you prescribe?

- A. Alpha-blocker + antimuscarinic or beta-3 agonist
- B. Alpha-blocker + 5-alpha-reductase inhibitor
- C. Antimuscarinic + beta-3 agonist
- D. Not sure

BPE, benign prostatic enlargement; OAB, overactive bladder.

49

## Management Recommendations for Bothersome LUTS in Older Men (continued)

## Mixed BPE-OAB

- Lifestyle changes and behavioural therapies for OAB symptoms ± pharmacotherapy:
  - An alpha-blocker in combination with an antimuscarinic or beta-3 agonist may benefit some men with both voiding and storage symptoms
  - An antimuscarinic in combination with a beta-3 agonist may be beneficial in some men with significant storage symptoms
  - Use antimuscarinics and beta-3 agonists with caution in elderly men and those with significant bladder outlet obstruction (BOO) and/or PVR volume

BPE, benign prostatic enlargement; LUTS, lower urinary tract symptoms; OAB, overactive bladder; PVR, post-void residual.

50

## Combination Therapy for Mixed BPE-OAB

Drug combination	Rationale for recommendation
Alpha-blocker + 5-ARI	<ul style="list-style-type: none"> <li>• Improves symptoms and prevents progression of BPE<sup>1,2</sup></li> <li>• Superior to monotherapy in reducing symptoms and improving Q<sub>max</sub><sup>1,2</sup></li> <li>• Useful in men with moderate to severe lower urinary tract symptoms (LUTS) at risk of BPE progression<sup>3</sup></li> </ul>
Alpha-blocker + antimuscarinic	<ul style="list-style-type: none"> <li>• Antagonizes alpha-1 adrenoceptors and M2 and M3 muscarinic receptors<sup>3</sup></li> <li>• More efficacious in reducing voiding frequency, nocturia, or IPSS than alpha-blockers or placebo<sup>3</sup></li> <li>• Reduces urge urinary incontinence (UII) episodes and urgency<sup>3</sup></li> <li>• Significantly increases quality of life<sup>3</sup></li> </ul>
Alpha-blocker + PDE <sub>5</sub> inhibitor	<ul style="list-style-type: none"> <li>• Superior to use of alpha-blocker alone<sup>4</sup></li> <li>• Safe<sup>4</sup></li> <li>• Additional studies needed to develop recommendations<sup>4</sup></li> </ul>

Supplemental data slides approved by Scientific Planning Committee as back up data - not accredited.

1. Afsar, S. et al. J Urol 2010;183(2):210-21. 2. Roehrs, C. et al. Eur Urol 2010;57(1):123-31.  
 3. Gnanapavan, S. et al. Eur Urol 2010;57(1):123-31. 4. Gnanapavan, S. et al. Eur Urol 2010;57(1):123-31.  
 5. Gnanapavan, S. et al. Eur Urol 2010;57(1):123-31.

51

## Recommendations for First-line OAB Pharmacotherapy in Adults Aged ≥65 Years

- Use caution when prescribing ≥1 antimuscarinic to older adults, and frequently re-evaluate the benefit-to-risk profile<sup>1</sup>
- Oxybutynin and trospium are contraindicated in patients at risk of urinary retention<sup>2</sup>

OAB, overactive bladder.

1. Averbach, M. et al. Neurourol Urodyn 2017;36(2):245-52.

2. Gnanapavan, S. et al. Eur Urol 2010;57(1):123-31.

52

## When to Refer the Male Patient With LUTS

- One or more findings suspicious of prostate cancer on digital rectal exam
- Hematuria without infection
- Abnormal PSA
- Pain
- Recurrent urinary tract infection (assess and treat before referral)
- Palpable bladder
- Neurological disease
- Treatment failure

LUTS, lower urinary tract symptoms; PSA, prostate-specific antigen.  
Abrams P, et al. *J Urol* 2012;188(1):Suppl:303-101.

53

53

## Expert Commentary and Summary

- Nocturia is the most bothersome lower urinary tract symptom
- Nocturia can be caused by reduced functional capacity, nocturnal polyuria, or mixed reduced functional capacity with nocturnal polyuria
  - A 2- to 3-day frequency/volume diary is the best tool to uncover the etiology of nocturia
- BPE and OAB symptoms often occur simultaneously, but may develop independently of one another
  - In the absence of voiding difficulties (variable/hesitant stream, feeling of incomplete voiding), OAB management should be considered first

BPE, benign prostatic enlargement; OAB, overactive bladder.

54

54

## QUESTIONS?

## Thank you!

55

55

56

56