

Toileting needs and responsive behaviours in older persons living with dementia

Kathleen F. Hunter PhD RN NP GNC(C) NCA

Professor Faculty of Nursing, University of Alberta

Nurse Practitioner Glenrose Continence Clinic

Adjunct Professor Faculty of Medicine and Dentistry, Division of Geriatric Medicine,
University of Alberta



Are toileting needs a trigger for responsive behaviours?

- Contenance needs can be burdensome in dementia (Santani et al 2016)
- Alzheimers Canada Website – Responsive behaviours
 - Wandering – one possible cause is looking for a bathroom
 - Agitation – one possible cause is fear of bathing, having clothes changed
- Dementia Training Australia
 - Anxiety, agitation - includes constipation under pain/discomfort triggers
 - Disinhibition such as urinating in inappropriate places - raises the question of being unable to find/distinguish toilet or earlier life habits (routinely urinated outside)
 - Sleep disturbance – includes the need for help toileting at night.
 - Wandering – are basic needs being met including need to void

Toileting triggers of RB and the complexity of cognitive change and communication

Triggers

- Lower urinary tract (LUTs) and bowel symptoms

Complexity

- The challenge of changing cognition and communicating needs



LUTs as Triggers

What are LUTS?

Storage Symptoms

urgency,
incontinence,
frequency, nocturia
(combined - OAB
syndrome)

Other

Leakage with
intercourse, Sx
associated with
POP, genital/LUT
pain

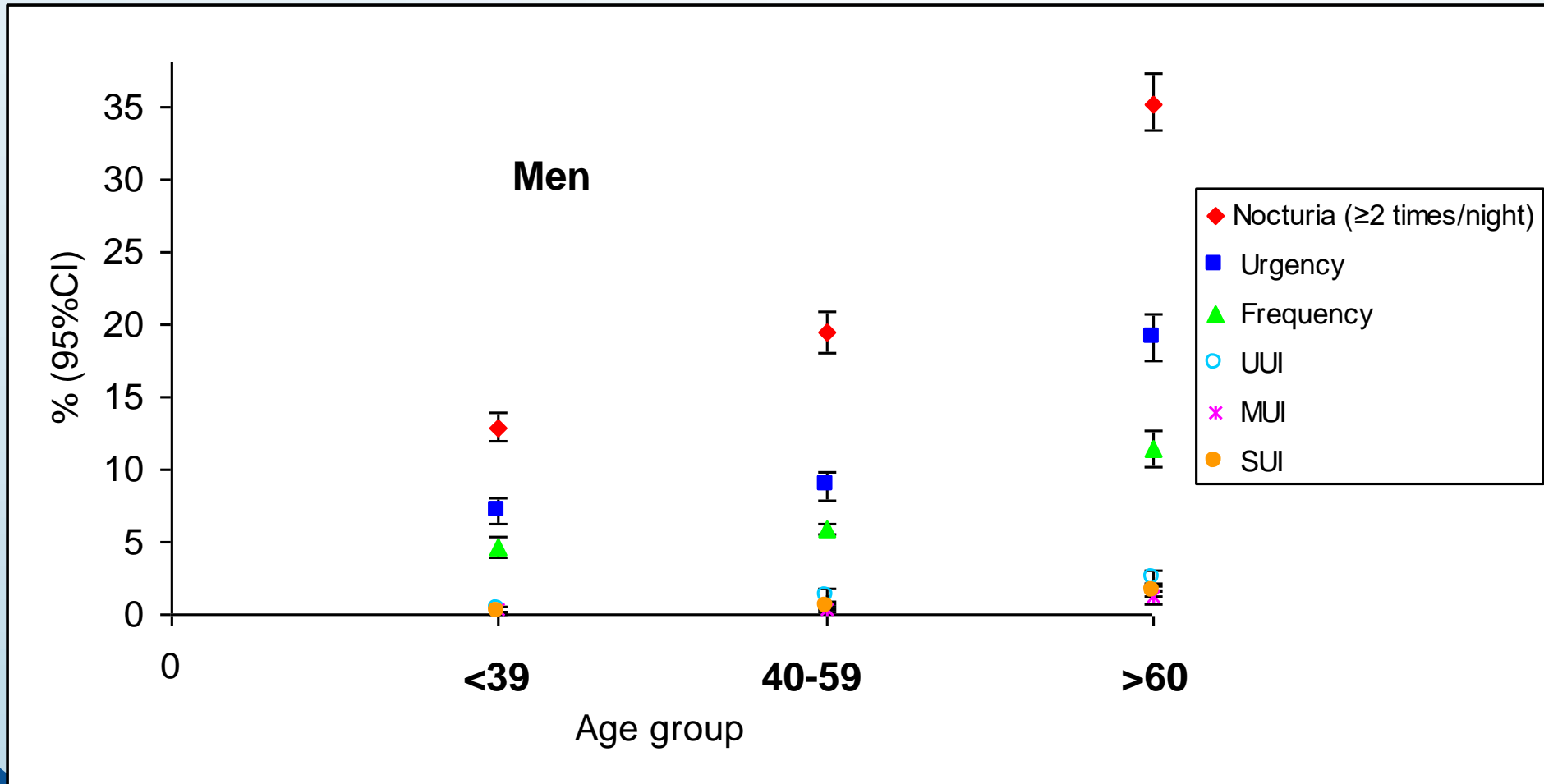
Voiding Symptoms

slow stream,
splitting/spraying,
intermittency, hesitancy,
straining, terminal
dribble

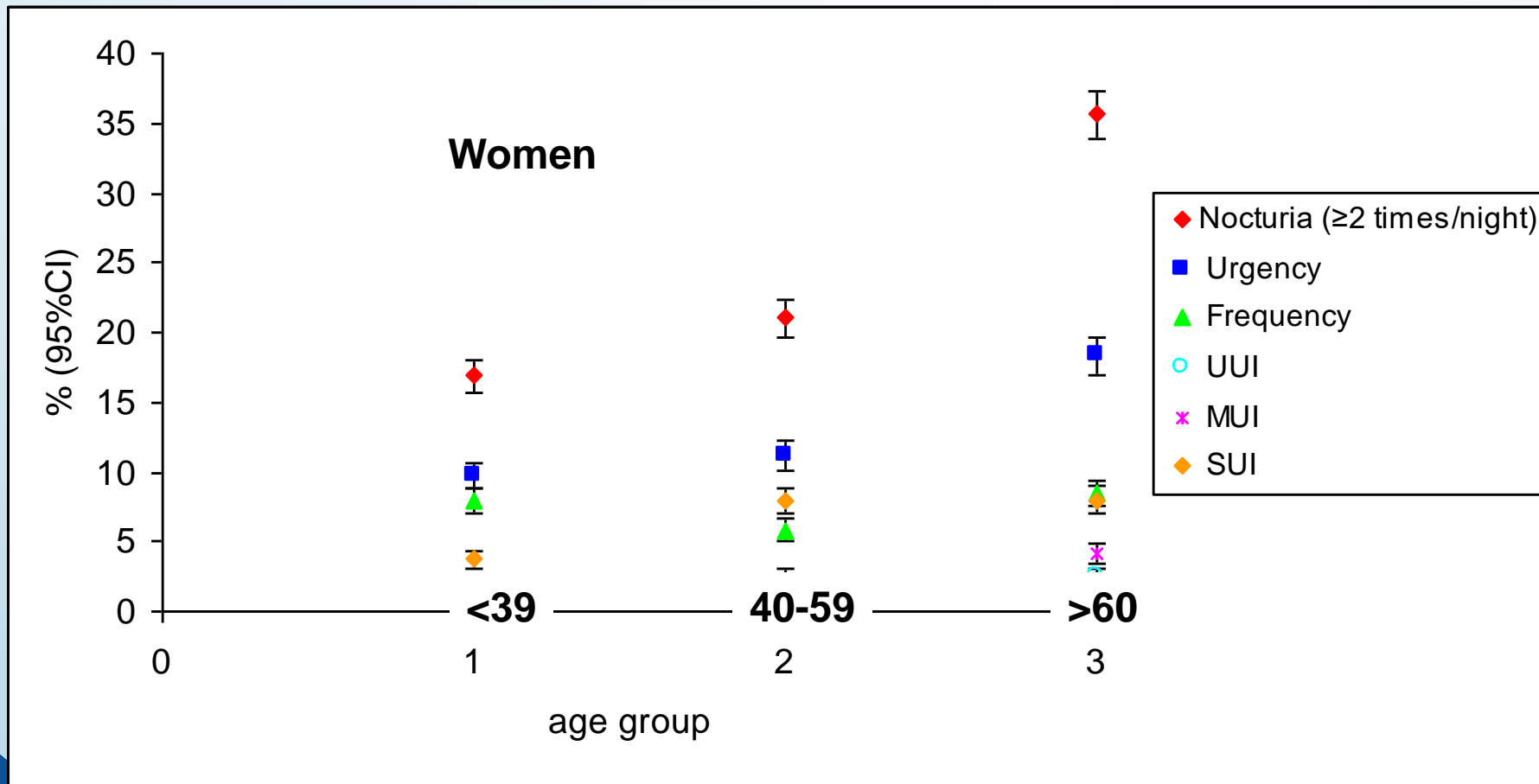
Post Micturition Symptoms

Incomplete emptying,
post micturition
dribble

Symptom prevalence and age



Symptom prevalence and age



Case 1: Mr G and the bothersome nocturia

- 86 year old male, presented at continence clinic with wife and son
- Living at home with wife
- Very bothered by nocturia, 6-7 episodes nightly, disrupts sleep. Gets up and wanders at night often looking for the bathroom
- Wife not sleeping either! Worried he will fall
- PMHx: hypertension, CAD, CHF, osteoarthritis, dementia (MOCA 20/30)
- Medications: Ramipril 5 mg daily, amlodipine 5mg, furosemide 20 mg daily, acetaminophen 650 mg hs, donepezil 5 mg daily
- Has PGS for lower limb edema, does not always wear

What is nocturia?

Is it

- a. Waking at night from sleep one or more times to void, each time preceded and followed by sleep?
- b. Waking up at night more than twice to void and not getting back to sleep afterwards?
- c. Overproduction of urine during sleeping hours (greater than 30% of 24 hour urine production at night)?
- d. Waking at night and finding yourself already wet?

What is nocturia?

Is it

- a. ✓ Waking at night from sleep one or more times to void, each time preceded and followed by sleep? *Nocturia*
- b. Waking up at night more than twice to void and not getting back to sleep afterwards? *Bothersome nocturia*
- c. Overproduction of urine during sleeping hours (greater than 33% of 24 hour urine production at night)? *Nocturnal polyuria*
- d. Waking at night and finding yourself already wet? *Nocturnal enuresis*

More about nocturia

- Increases with age – as high as 90% (one episode/night) in those over 80 (Irwin 2006)
- May begin and resolve over time – but resolution less likely with increasing age (van Doorn et al 2011)
- In older people, pathophysiology of nocturia is multifactorial (Tikka et al 2009)
 - large Finish survey - no single factor related to nocturia present in greater than 50%
 - Associated factors
 - urgency, benign prostatic hyperplasia, and snoring for men
 - overweight and obesity, urgency, and snoring for women

Nocturnal Polyuria

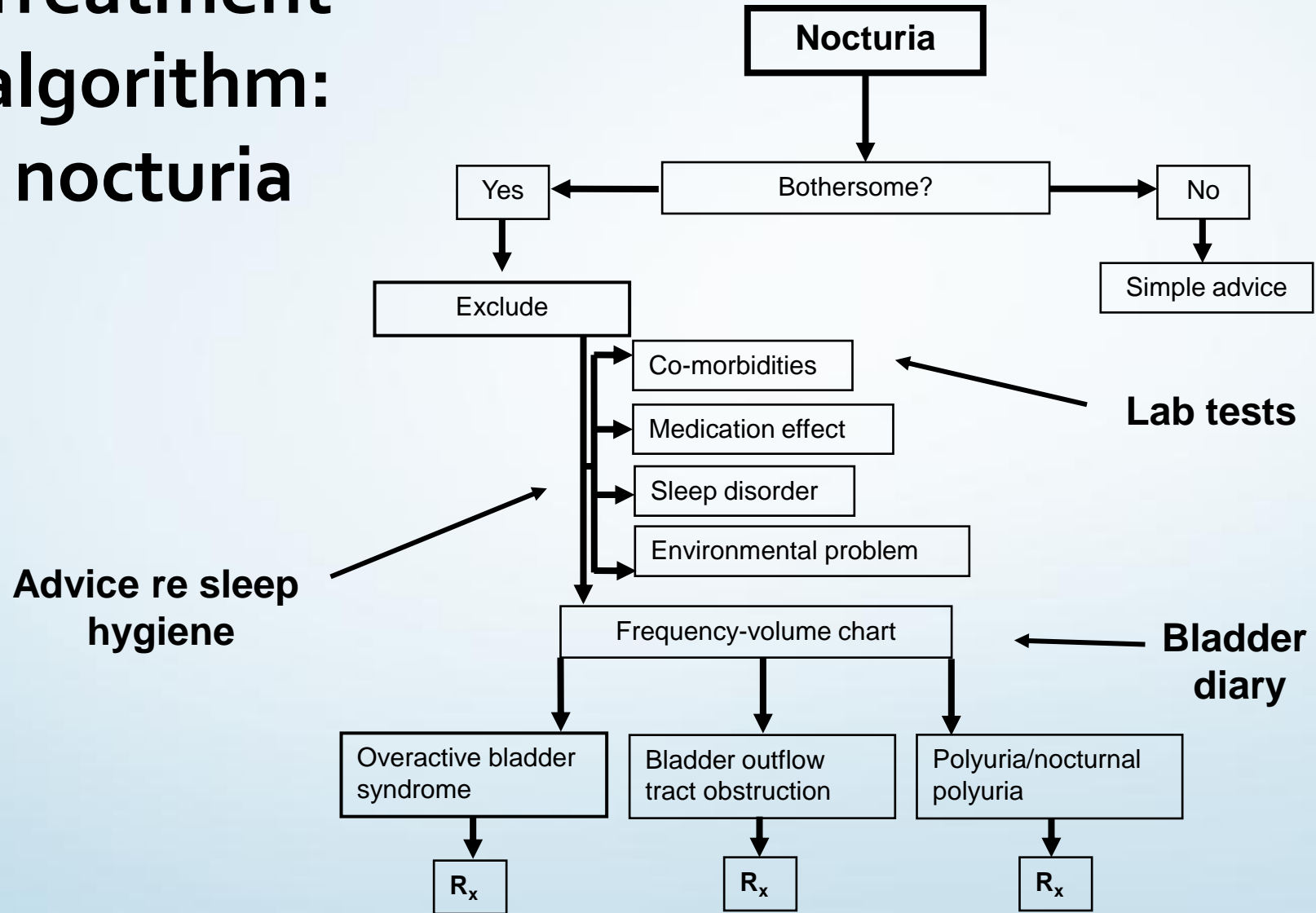
- Nocturnal overproduction of urine – most common cause of nocturnal voiding in older persons
- Driver: excess sodium and/or free water leaving the kidneys
- Age-related surge in nocturnal sodium or free water clearance - potential target for behavioural or pharmacologic interventions
- Increased free water clearance with ageing - impaired circadian rhythm of AVP or change nephron response to water clearance with ageing.

Nocturia/nocturnal polyuria also associated with chronic medical conditions

- hypertension
- diabetes, poor nocturnal glycemic control
- cardiovascular disease
- advancing renal insufficiency
- obstructive sleep apnea
- restless leg syndrome
- moderate alcohol usage
- medications (gabapentin, amlodipine)

Fitzgerald, M.P. *Journal of Urology*, 2007. **177**(4): p. 1385-9.
Johnson, T.M. *J Am Geriatr Soc*, 2005. **53**(6): p. 1011-6.
Plantinga, L. *Am J Kidney Dis*, 2011. **58**(4): p. 554-64.
Hillier, P. *Quarterly Journal of Medicine*, 1980. **49**(196): p. 461-78.
Rembratt, A. *BJU Int*, 2003. **92**(7): p. 726-30.
Asplund, R. *BJU International*, 2002. **90**(6): p. 533-6.
Weiss, J.P. *BJU International*, 2011. **108**(1): p. 6-21

Treatment algorithm: nocturia



Case 2: Mr G–bladder diary

- With coaching and assistance from the wife and son was able to complete a 3 day bladder diary with moderate accuracy
- Usual bed time 2200, up at 0700
- 950 ml output between arising and going to bed
- 750 ml + over 5 nocturia episodes plus first rising void
- Does he have nocturnal polyuria? What would you do?

Time	Intake	Void	Incontinence
0700		150 ml	
0800	Coffee 1 c, water 1 c		
0900	Juice ½ cup	100 ml	
1000			
1100		150 ml	drbbles
1200	Tea 1c, soup		
1300			
1400	Coffee 1c	200 ml	
1500			
1600			
1700	coffee 1 c	150 ml	
1800		150 ml	
1900			
2000	Water ½ c	100 ml	
2100			
2200		100 ml	
2300		150 ml	
2400		200 ml	
0100		?	Did not make it to toilet
0200			
0300		150 ml	
0400			
0500		100 ml	
0600			

Case 1: Mr G

Options for nocturnal polyuria

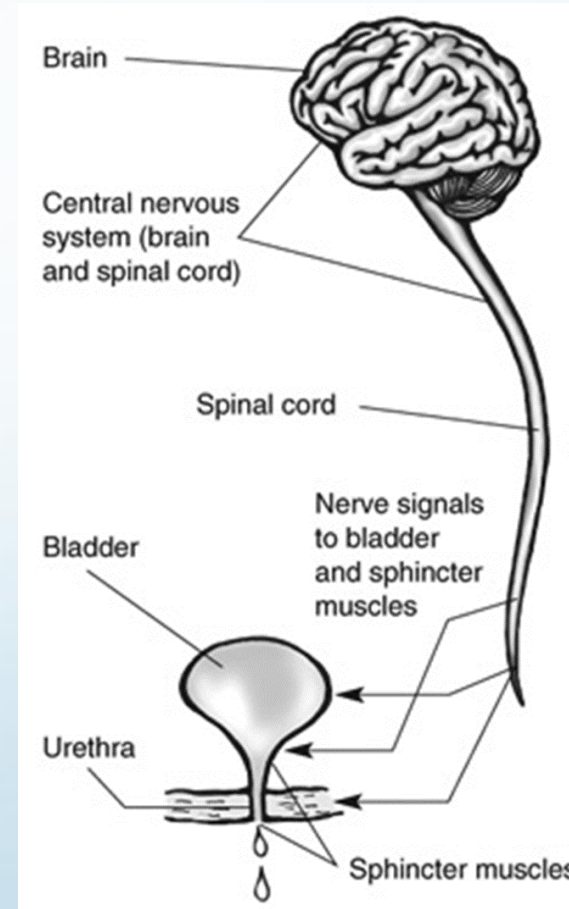
- Conservative measures first
 - Engage the caregivers
 - Maintain hydration, but restrict evening fluids
 - Pick the low hanging fruit: Address the lower limb edema – elevate legs, PGS
 - Urinal/commode at bedside
- Medication
 - Discontinue the amlodipine – adjust other medications to optimize HTN/CHF control
 - Low dose furosemide late afternoon – already on 20 mg in am, move to 1600h
 - If no improvement, would you start him on DDAVP/desmopressin? Why or why not?

Case 2: Mrs B

- Mrs B, 83 year old female referred to clinic with urgency UI, accompanied by daughter
- Hx of mixed dementia, lives in dementia supportive living, needs help with IADLS and most ADLs, uses walker
- Often wanders on unit, asks for help to find toilet
- Multiple episodes of urinary incontinence daily, takes off pads saying she does not need it- easily upset if not assisted quickly or pushed about wearing pads
- Other med hx: HTN, CHF, CAD, Afib, TIA, osteopenia, osteoarthritis
- Meds: ramipril, indapamide, metoprolol, dabigatran, acetaminophen, diclofenac gel, Vit D, calcium
- Patient able to describe urgency, daughter provides observations
- Assessment: mixed urinary incontinence, urgency dominant, nocturia 2-3 episodes

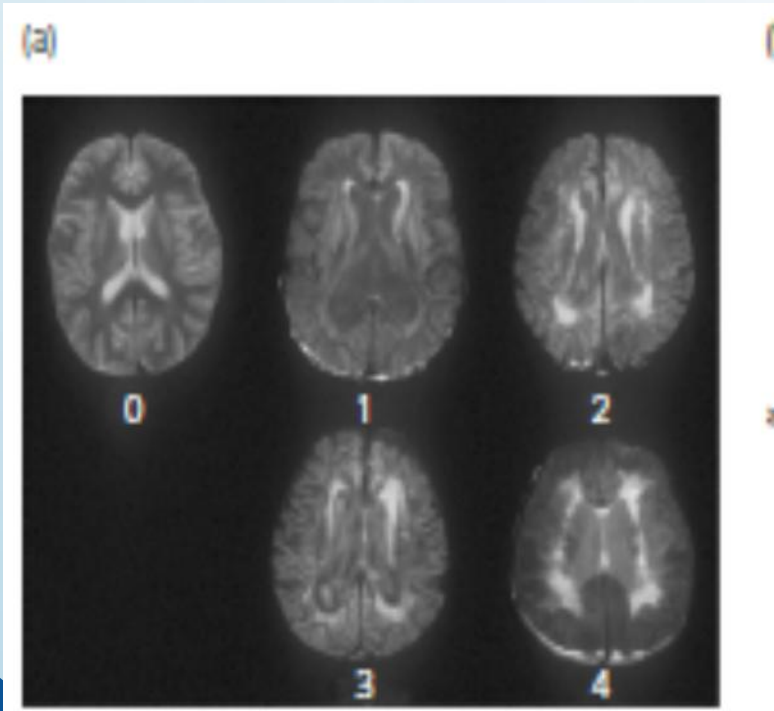
Early stages of dementia

- Urinary urgency may be an early warning sign of cognitive changes or white matter disease



White matter disease (ischemia) and OAB

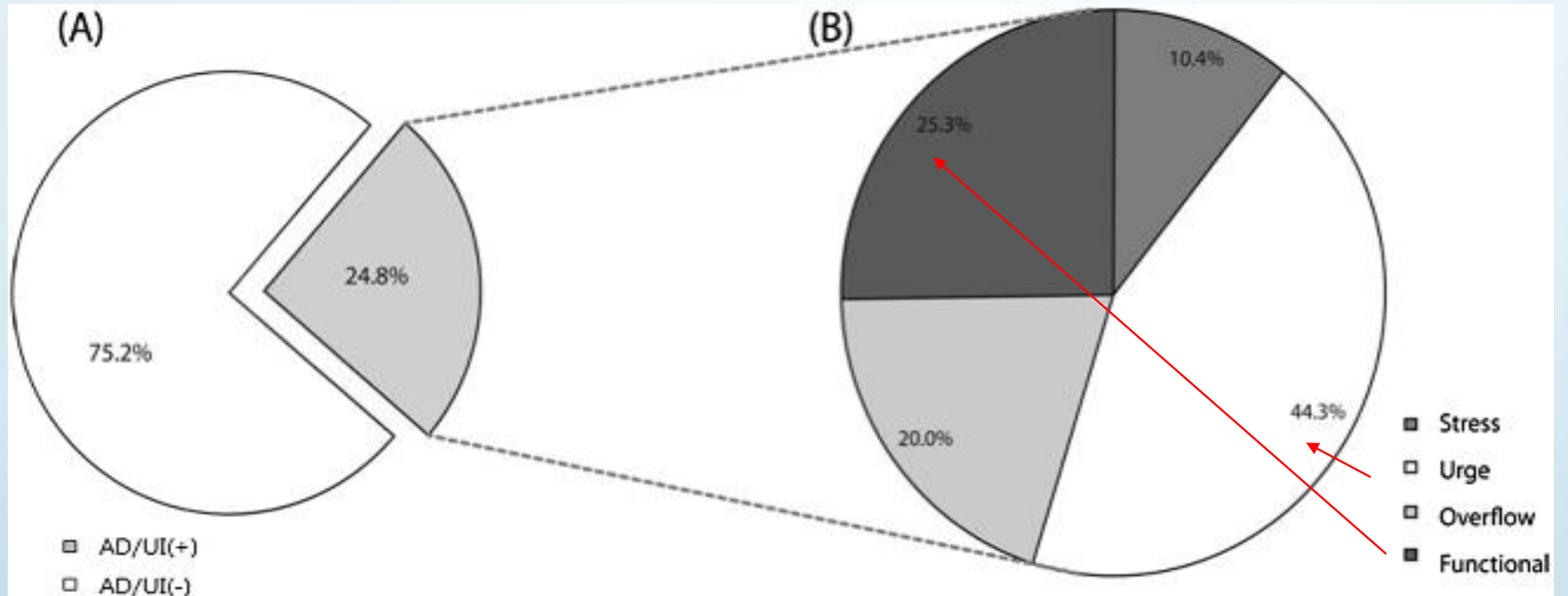
Insidious progression to vascular dementia, vascular parkinsonism and vascular incontinence (Sakakibara et al 2014)



- In WMD, brain perfusion most severely reduced in frontal lobe
- Detrusor overactivity is an **exaggerated micturition reflex** (deactivation of prefrontal cortex → **loss of reflex suppression**)

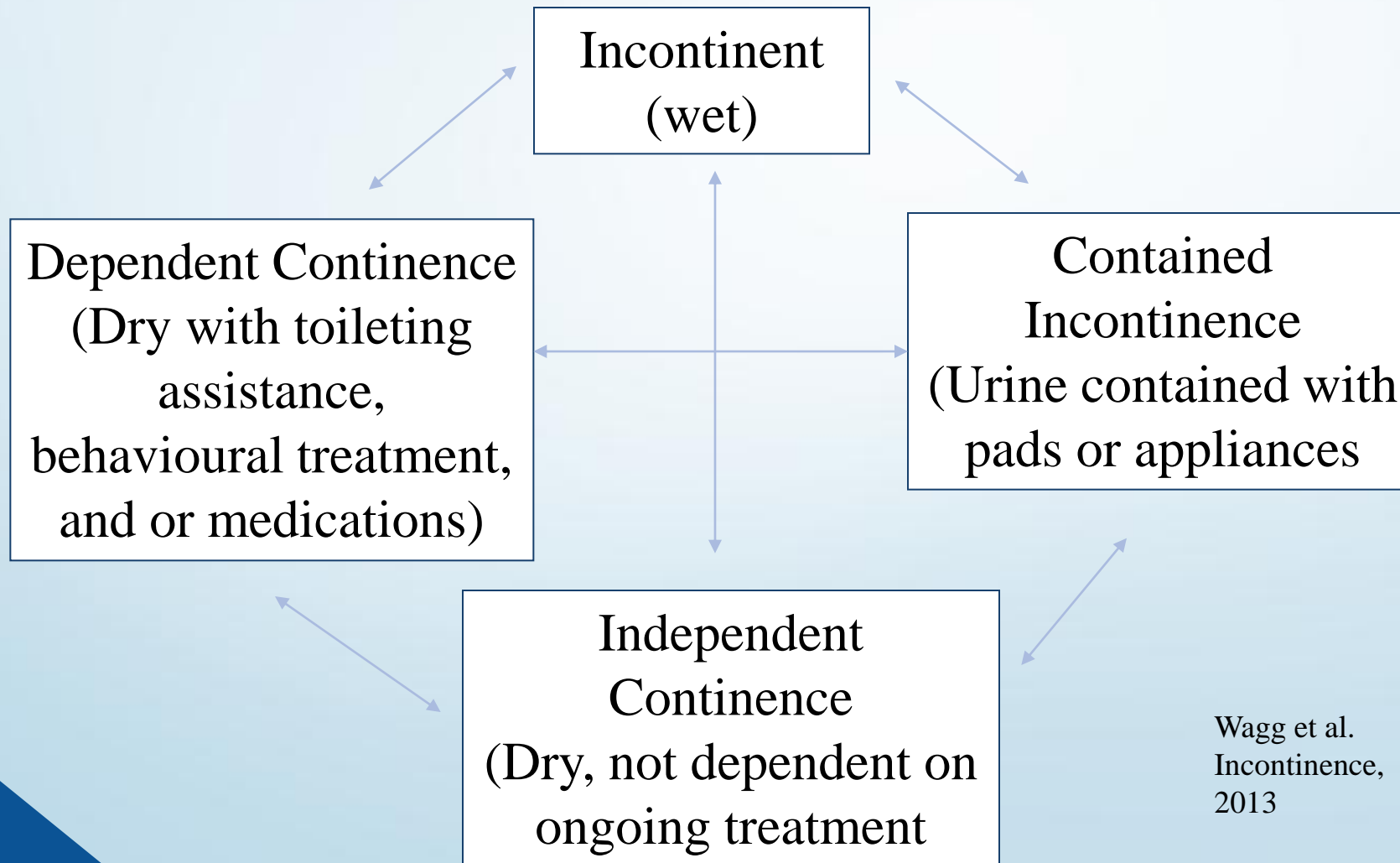
In other words, lesions in the brain (stroke, dementias, PD, MS) lead to loss of the ability to suppress urgency – the frontal social lobe cannot suppress the urge from the pontine micturition centre


Types of UI in AD



Na et al, Asia Pac Psychiatry. 2015, doi:
10.1111/appy.12007

Achieving Continence – Frail Older Persons





The challenge of changing cognition and
communicating needs

As dementia progresses the “functional” UI related to cognition sets in.....

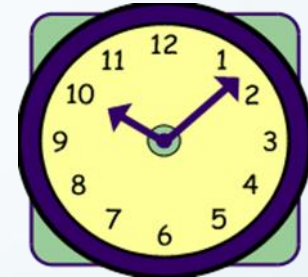
- Visual/Spatial Disorientation– can’t find the bathroom
- Apraxia - tasks such as dressing/undressing, hygiene become more difficult
- Agnosia – Difficulty recognizing objects such as the toilet
- Difficulty recognizing the need to go to the toilet
- Difficulty recognizing they have wet or soiled themselves

Conservative management strategies

- Systematic review of conservative treatment in older and frail older people (Stenzelius et al 2015)
 - Limited evidence with regards to those living with cognitive impairment
 - Community - Patient education/PFME studies – excluded those with cognitive impairment
 - In NH – toileting, physical exercise - results variable, staff availability an issue
- Dignity model for continence care in NH (Ostaszkievicz 2017, 2018)
 - Challenges the notion that continence care in NH is limited to “cleaning, containing, concealing”
 - Needs to be informed by research, and resident/family values about continence care

Conservative management strategies

- Toileting strategies
 - Regular toileting, prompting (cueing)
 - Remove barriers to the bathroom
 - Make it part of preparation for a pleasurable activity e.g. stop into to the bathroom on the way to watching a favourite TV show (Francis et al 2015)
- Bowel management



Environmental changes and lifestyle measures

- Low tech
 - Urinals, commodes
 - Cues to finding the bathroom
- Hi tech - wetness sensors
 - Can be part of a home wireless sensing system (Gong et al 2015)
 - Use of wetness sensor in NH to develop continence care plan – study just completed (Wagg, Hunter, Rajabali et al in progress)
- Fluid management
 - 6-8 cups of fluid/24 hours
 - Take most during the day, restrict in evening



Conservative Management Strategies

- Containment products
 - Variety of absorbent products available – pads/liners, all in ones, pull up style, male pouches
 - Lack of appropriate financial support for access a burden to caregivers (Santani et al 2016)
 - New study just underway on PwD, CG product style preferences (Wagg, Hunter et al underway)
 - Bed/chair protectors
 - Pads for bladder leakage are different than menstrual pads!
- Revised AADL criteria
 - Incontinence must be multiple episodes daily and unresolvable
 - Continence assessment required, must have tried lifestyle and conservative strategies for at least 3 months – Those with dementia may be exempted

Can medication for OAB in someone living with dementia be useful?

Medications

- Bladder specific antimuscarinics
 - oxybutynin (Ditropan)
 - tolterodine (Detrol)
 - solfenacin (Vesicare)
 - fesoterodine (Toviaz)
 - darifenacin (Enablex)
 - trospium (Trosec)
- Beta-3 adrenergic agonist
 - mirabegron (Myrbetriq)



Which one would should be used for Mrs B?

1. oxybutynin immediate release (Ditropan)
2. solfenacin (Vesicare)
3. fesoterodine (Toviaz)
4. mirabegron (Myrbetriq)

SYSTEMATIC REVIEW

Appropriateness of oral drugs for long-term treatment of lower urinary tract symptoms in older persons: results of a systematic literature review and international consensus validation process (LUTS-FORTA 2014)MATTHIAS OELKE¹, KLAUS BECHER², DAVID CASTRO-DIAZ³, EMMANUEL CHARTIER-KASTLER⁴, MIKE KIRBY^{5,6},
ADRIAN WAGG⁷, MARTIN WEHLING⁸

FORTA A (Absolutely) Indispensable drug, clear-cut benefit in terms of efficacy/ safety ratio proven in elderly patients for a given indication		
FORTA B (Beneficial) Drugs with proven or obvious efficacy in the elderly, but limited extent of effect or safety concerns	Fesoterodine Dutasteride, Finasteride	
FORTA C (Caution) 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 Oxybutynin ER tadalafil	Solifenacin Tolterodine Trospium tamsulosin silodosin
FORTA D (Don't) Avoid in the elderly, omit first, review/find alternatives	Oxybutynin IR, Propiverine, Alfuzosin, Doxazosin Terazosin	



Bowel symptoms as triggers

Case 3: Mr M

- Mild – moderate stage of living with dementia
- Resides at home with wife as care partner
- Couple likes to walk the in the morning to keep active BUT.....
-*Mr M often experiences fecal urgency when walking and is now having fecal incontinence episodes before getting back to the house which is distressing him greatly – anxiety, hiding soiled clothes, agitated when wife tries to help clean up!*

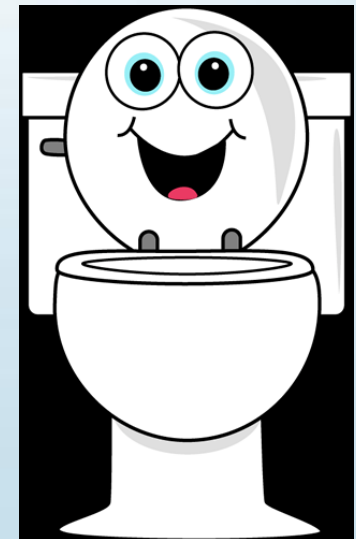
What is happening?

- Assessment needed – relevant medical conditions, medications, bowel hx, bowel pattern (frequency and type of bowel movements), diet pattern
- Ever heard of the gastrocolic reflex?

Gastrocolic reflex

- Physiological reflex controlling GI tract motility of the lower gastrointestinal tract after ingesting a meal.
- Colonic motility increases as a response to stretch of the stomach – peristalsis, movement of gut contents towards sigmoid colon and rectum, defecation
- Large intestine has a spike in activity within minutes of eating and the gastrocolic reflex results in the urge to defecate after a meal.

Malone & Thavamani 2019 Stat Pearls



Lifestyle – Good bowel habits

- Maintain hydration – 6-8 cups of fluid daily – everything liquid counts!
- Eat a diet with adequate fiber
 - Adults - 21-38 grams of total dietary fiber each day
 - Dietitians of Canada website <http://www.dietitians.ca/Your-Health/Nutrition-A-Z/Fibre/Food-Sources-of-Fibre.aspx>
- Take advantage of the gastrocolic reflex – eating stimulates movement of the gut and emptying of the bowels
- Get in the right position to poo
- Exercise – walking is excellent but time it for after the morning BM!

The right position to poop



<https://esnoticia.co/noticia-25344-the-right-form-to-do-poop-squatty-potty-position>

Contact us – we are here to help

- Kathleen.Hunter@ualberta.ca
- Glenrose Continence Clinic – 780-735-8880
 - Assessment and management strategies
 - We do not authorize AADL supplies (this is most often through Home Care or CAIL after appropriate assessment and management)
- Alberta Continence Research Network
- Canadian Continence Foundation www.canadiancontinence.ca
- Continence Products Advisor www.continenceproductadvisor.org



ALBERTA CONTINENCE
RESEARCH NETWORK