Toileting needs and responsive behaviours in older persons living with dementia

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Are toileting needs a trigger for responsive behaviours?

- Continence 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)

**Voiding Symptoms**
- slow stream,
- splitting/spraying,
- intermittency, hesitancy,
- straining, terminal dribble

**Post Micturition Symptoms**
- Incomplete emptying,
  post micturition dribble

**Other**
- Leakage with intercourse, Sx associated with POP, genital/LUT pain
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 (Tikkinen 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.

Monaghan et al Age and Ageing 2020  https://doi.org/10.1093/ageing/afz200
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)

Treatment algorithm: nocturia

Nocturia

Bothersome?

Yes

Exclude

Co-morbidities

Medication effect

Sleep disorder

Environmental problem

No

Simple advice

Lab tests

Bladder diary

Frequency-volume chart

Overactive bladder syndrome

Rx

Bladder outflow tract obstruction

Rx

Polyuria/nocturnal polyuria

Rx

Advice re sleep hygiene

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?

<table>
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<th>Time</th>
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<th>Void</th>
<th>Incontinence</th>
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<td></td>
<td>150 ml</td>
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<tr>
<td>0800</td>
<td>Coffee 1 c, water 1 c</td>
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<tr>
<td>0900</td>
<td>Juice ½ cup</td>
<td>100 ml</td>
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<td>1100</td>
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<td>150 ml</td>
<td>dribbles</td>
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<td>1200</td>
<td>Tea 1 c, soup</td>
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<td>1300</td>
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<td>2000</td>
<td>Water ½ c</td>
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<td>Did not make it to toilet</td>
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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

Incontinent (wet)

Dependent Continence (Dry with toileting assistance, behavioural treatment, and or medications)

Contained Incontinence (Urine contained with pads or appliances)

Independent Continence (Dry, not dependent on ongoing treatment)

Wagg et al. Incontinence, 2013
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 (Ostaszkiewicz 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)
<table>
<thead>
<tr>
<th>FORTA A (Absolutely)</th>
<th>Indispensable drug, clear-cut benefit in terms of efficacy/safety ratio proven in elderly patients for a given indication</th>
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</thead>
<tbody>
<tr>
<td>FORTA B (Beneficial)</td>
<td>Drugs with proven or obvious efficacy in the elderly, but limited extent of effect or safety concerns</td>
</tr>
<tr>
<td>FORTA C (Caution)</td>
<td>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</td>
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<td>FORTA D (Don’t)</td>
<td>Avoid in the elderly, omit first, review/find alternatives</td>
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<table>
<thead>
<tr>
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<td>Propiverine</td>
<td>tamsulosin silodosin</td>
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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
• 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](http://www.canadiancontinence.ca)
- Continence Products Advisor [www.continenceproductadvisor.org](http://www.continenceproductadvisor.org)