



Frailty, Aging, and Incontinence in the Elderly: An Interactive Case-Based Discussion of Best Practices

EC8, 29 August 2011 09:00 - 12:00

Start	End	Topic	Speakers
09:00	09:05	Introduction	<ul style="list-style-type: none"> • Tomas Griebling
09:05	09:20	Comparison of Frailty and Normal Physiological Aging	<ul style="list-style-type: none"> • Tomas Griebling
09:20	09:35	The Range of Continence Issues Facing Frail Older Adults	<ul style="list-style-type: none"> • Kathleen Hunter
09:35	09:50	Barriers and Facilitators of Continence Care in Nursing Homes	<ul style="list-style-type: none"> • Joan Ostaszkievicz
09:50	10:05	The Role of Urodynamics and Treatment Options for Incontinence in the Frail Elderly	<ul style="list-style-type: none"> • Ruth Kirschner-Hermanns
10:05	10:30	Questions	All
10:30	11:00	Break	None
11:00	11:15	Interactive Case-Based Discussion #1	<ul style="list-style-type: none"> • Tomas Griebling • Kathleen Hunter • Ruth Kirschner-Hermanns • Joan Ostaszkievicz
11:15	11:30	Interactive Case Discussion From Participants	All
11:30	11:45	Interactive Case-Based Discussion #2	<ul style="list-style-type: none"> • Tomas Griebling • Kathleen Hunter • Ruth Kirschner-Hermanns • Joan Ostaszkievicz
11:45	12:00	Questions	All

Aims of course/workshop

Urinary incontinence and frailty are both highly prevalent in older adults. Workshop goals include review of available evidence on frailty and differentiation from normal physiological aging. The influence of frailty on continence in older adults will be examined. Presentations will explore associated risks such as falls, pressure ulcers, and nursing home placement, as well as barriers and facilitators of continence care in various living environments. The role of urodynamics and various treatments will be considered. A majority of the session will focus on interactive discussion of case-based examples of common but challenging clinical situations seen in frail older adults.

Educational Objectives

This workshop proposal is designed to focus on the interaction between frailty and development, evaluation, and treatment of urinary incontinence in older adults. In addition to general issues associated with urinary incontinence in geriatric patients, the addition of frailty factors greatly increases the complexity and challenges associated with care in these elderly patients. This advanced workshop is designed to move beyond the basics to explore evidence-based information on the frailty phenotype and associated risks for urinary incontinence. Evaluation and treatment options will review available best-practices based on current published literature. Ample time will be allocated for discussion of case-based examples, and participants will be encouraged to bring examples from their own clinical practices.

Frailty and Physiology of Aging

Tomas L. Griebeling, MD, MPH
John P. Wolf 33rd Masonic Distinguished Professor of Urology
Faculty Associate – The Landon Center on Aging
Assistant Dean for Student Affairs
The University of Kansas
Kansas City, Kansas, USA

Clinical imperatives of geriatrics / gerontology

Aging of the population
Worldwide phenomenon

Frailty compared to normal aging

Increased vulnerability
Decreased ability

Senescence

Cellular / subcellular
Collagen deposition (including bladder)
Alterations in tissue vasculature

Frailty as a Geriatric Syndrome

Multidimensional, multiple systems
Complex interactions
Clinical outcomes

Two Theories of Frailty

- Caused by multiple age associated physiological changes
 - Compounded by chronic disease
 - Sometimes an end-stage result of disease
 - Dose-response relationship / summary measure of disease accumulation
 - Predictive of mortality
- Frailty is a distinct physiological entity
 - Frailty is a primary defect
 - Decreased physiological function
 - Loss of homeostatic regulation
 - Biomarkers may indicate change
 - Telomere shortening
 - Free radical formation
 - Dysregulation multiple systems
 - Loss of energy (cellular)
 - Spiral of functional decline

Clinical versus Subclinical Frailty

Possible target for intervention / prevention / rehabilitation

Clinical Frailty

No single accepted diagnostic criteria

Changes occur along a spectrum of clinical conditions

‘Physiotype’ vs. ‘Phenotype’

Operational Definitions Frailty

3 or more signs / symptoms indicative of frailty

Decreased strength (quadriceps / hand grip)

Decreased energy (easy fatigue / exhaustion)

Slowed gait speed

Diminished physical activity

Unintentional weight loss

High risk for progression to disability

Frail / vulnerable elderly often excluded from clinical trials

Biomarkers and Frailty in Older Adults

Sarcopenia

Hypogonadism

Insulin resistance

Cortisol resistance

Oxidative stress – free radical formation

Elevated pro-inflammatory markers

IL-6

C-reactive protein

Dysregulation of intracellular communication

Undernutrition

Selenium

Vitamin E

Carotenoids

Polyunsaturated fatty acids

Prevention and Treatment

Frailty increases risk of mobility and cognitive impairments

Increases risk for urinary and fecal incontinence

Treatment of underlying physiological problems

Maintenance of strength and nutritional intake

Preservation of muscle mass and prevention of sarcopenia

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Continence Issues for Frail Community Dwelling Older Adults

Kathleen F. Hunter PhD RN NP GNC(C)
Assistant Professor, Faculty of Nursing
University of Alberta, Edmonton, Canada
Nurse Practitioner, Specialized Geriatric Services
Glenrose Hospital Edmonton, Canada

Patterns of Aging Trajectories

Community dwelling – linear decline
Institutional and clinical samples – high frailty index

Systematic epidemiological analysis

Pooled annual incidence ranges from 1.6 to 8.5 % based on age
Incontinence prevalence ranges from 4.9 to 21.7% depending on type and age
Urge incontinence ranges from 4.9 to 12.2%
Stress incontinence ranges from 12.8 to 21.8%
Mixed incontinence ranges from 7.1 to 16.8%

Prevalence of incontinence is higher in community dwelling women compared to men

Incontinence is not a normal part of aging
Incidence and prevalence increase with increasing age
Urinary incontinence itself may be a marker of frailty in older adults

Frailty influences urinary incontinence

Decreased mobility
Impaired manual dexterity
Polypharmacy
Cognitive impairment
Delirium
Dementia

Does urinary incontinence predict nursing home placement?

Studies inconclusive
Some indicate a 2.0 to 3.2 times greater rate of nursing home placement
Caregiver burden may influence this
Depending on study, urinary incontinence not always a consistent predictor of nursing home placement

Falls and urinary incontinence

LUTS associated with increased rate of falls
Type of incontinence may be important
Urge urinary incontinence

Stress urinary incontinence
Nocturia and nocturnal incontinence
Incontinence included in falls risk assessment

Research and Clinical Knowledge gaps

How does LUTS influence gait and balance?
How do these complex interactions influence fall risk?

Assessment and Interventions

Recommended by the International Consultation on Incontinence

Functional assessment
Cognitive assessment
Home environment assessment
Medication review
Bladder diaries

Interventions

Alter environment
Equipment
Time toileting / prompted voiding
Bladder training
Containment products
Fluid management
Pharmacological interventions
Physical therapy / pelvic floor exercises (limited data)

Summary

- Incontinence is an issue that is often experienced by older community dwelling
- May be more problematic in those with cognitive or physical frailty
- Incontinence and other LUTS are linked to cognitive impairment and falls
- Research is needed to identify and test interventions to prevent urinary symptom related falls
- Assessment and management of UI in frail community dwelling older adults can be improved

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Workshop EC8: Frailty, aging and incontinence in the elderly: Barriers and enablers to continence care in long-term care

Introduction

Urinary and faecal incontinence (UI & FI) affect many residents of long-term care (LTC) settings. A recent systematic review reported the following prevalence data for LTC: UI prevalence - 30-77%; FI prevalence - 46%; combined UI & FI – 40%; more than 50% of residents have UI at the time of admission; 60-70% of female residents report UI; and 83% of residents with severe cognitive impairment have FI (Shamliyan, Wyman, Bliss, Kane, & Wilt, December 2007). Risk factors include: age and female gender, deteriorating cognitive function, dementia, delirium, being confined to bed or to a wheelchair, the use of chair or trunk restraints or bedrails and drugs (anti-anxiety/hypnotic antipsychotic and antidepressant drugs) (Offermans, Du Moulin, Hamers, Dassen, & Halfens, 2009).

Frailty: Individuals in LTC are often termed 'frail'. A large cross sectional and cohort study found that frailty levels were high for people drawn from institutional and clinical samples and this finding held true across all age groups (Mitnitski, et al., 2005). In Australian LTC settings, most residents are over the age of 80 years of age. Thirty-nine percent spend less than one year in care. Fifty-nine percent have a recorded diagnosis of dementia and 27% have a recorded diagnosis of 'other mental illness only' (Australian Institute for Health and Welfare, 2010). Sixty-six percent of residents require at least some support with bladder management, 72% require at least some support with bowel management and 68% require some support with toileting (Pearson, et al., 2002). So, as a group, they are very elderly and are highly dependent. But does old age and dependence equate to frailty?

Research focus on frailty: Questions that dominate research about frailty centre on whether or not it is a disease, a normal part of ageing, and how to define and measure it. How are frailty, disability and dependence linked? Are all individuals in LTC frail or are there subsets of frailty? What is the trajectory of frailty? Why are some people described as frail and not others? How does disability and dependence relate to frailty? Different models of frailty capture different groups of older adults (Cigolle, Ofstedal, Tian, & Blaum, 2009). Assuming a consensus understanding of frailty, how could it be used to optimise the evaluation and management of incontinence in LTC?

UI is considered a marker or indicator of frailty (Coll-Planas, Denking, & Nickolaus, 2008; Holroyd-Leduc, Mehta, & Covinsky, 2004; Miles, Espino, Mouton, Lichtenstein, & Markides, 2001). In a review on the role of UI in the biopsychosocial model of disability, Coll-Planas and colleagues (2008) propose five pathways to describe the relationship between UI and disability.

- UI as risk factor for functional decline and reduced physical activity through the increased risk of falls and fractures.
- Functional decline and reduced physical activity as risk factors for the onset of UI.
- Shared risk factors for UI and functional decline: white matter changes, stroke and other neurological conditions.
- UI in a unifying conceptual framework: the multifactorial aetiology of geriatric syndromes.
- UI as an indicator of frailty (Coll-Planas, et al., 2008).

The ICI describes UI in frail elders as a syndrome with multiple risk factors that have a common pathway among themselves, which results in cumulative effects on multiple body systems (C. DuBeau, Kuchel, Johnson, Palmer, & Wagg, 2009): a definition which acknowledges the multidimensional aspect of incontinence in frail elders and includes patient level factors and a perspective that extends beyond the lower urinary tract and its neurological control. This is particularly the case for older adults in LTC where incontinence is also a product the interplay of physical, psychological, social and environmental factors. Frailty is also a multidimensional phenomenon that results from the interplay of physical, psychological, social and environmental factors. The interplay can be illustrated by focussing on impaired mobility and its link to organisational factors and to staff and resident beliefs and expectations.

Impaired mobility: Most residents experience some form of functional impairment. "UI may be a direct cause of or consequence of functional decline in some elders" (M.H. Palmer, 2011).

- In community-dwelling older Americans, Jenkins and Fultz (2005) found that functional impairment in the lower body mobility domain (OR ¼1.56; 95% CI ¼1.09, 2.23) and a greater number of serious chronic conditions (OR ¼1.22; 95% CI ¼1.02, 1.45) increased the odds of the onset of mild UI (vs. remaining continent) (Jenkins & Fultz, 2005).
- Within LTC, the risk for developing UI increases to 16% with impaired mobility (M.H. Palmer, German, & Ouslander, 1991)
- Residents who were confined to a wheelchair or bedridden were seven times more likely to become incontinent than subjects who could move without help (OR 7.38; 95% CI 4.8 to 11.2) (Aggazzotti, Pesce, Grassi, & al., 2000)
- Incontinence was predicted by gait ($P < 0.001$) in female residents. Of all associated factors (physical, cognitive, emotional and clinical), gait and cognitive impairment (MMSE) may have the greatest impact on the prevalence of urinary incontinence in female and male elderly population, respectively (Coppola, et al., 2002)
- Independence in walking ability was the best predictor of UI ($F = 98.16, p < .01$), followed by cognitive ability ($F = 50.07, p < .01$) and independence in rising from a chair ($F = 34.97, p < .01$), $\chi^2(3) = 58.82, p < .01$. (Jirovec & Wells, 1990)

Organisational constraints: Research on the day-to-day problems encountered by LTC staff in providing continence care reveal organisational constraints that hinder their ability to enhance continence care. Inadequate numbers of staff to provide care is consistently cited. Other factors include:

- Excessive workloads
- High staff turnover and absenteeism
- Insufficient education
- Lack of appropriate documentation systems
- Lack of equipment such as continence aides and lifting machines
- Limited access to experts
- A lack of guidelines and/or assessment tools
- Resident characteristics (e.g. dementia)
- Staff characteristics (e.g. inadequate knowledge)

- Communication and organisational difficulties such as conflicting beliefs and goals, difficulty organising care routines, weak leadership, confusion about role boundaries, a focus on tasks, routines, and inflexibility (Funderburg Mather & Bakas, 2002; Gibb & Riggs, 1991);(Lekan-Rutledge, Palmer, & Belyea, 1998) (O'Connell, et al., 2005) (Resnick, et al., 2006) (Tannenbaum, Labrecque, & Lepage, 2005) (Wong & Chueng, 1992) (Wright, McCormack, Coffey, & McCarthy, 2007).

LTC staff struggle to provide toileting assistance at rates that match residents' physiological needs. This is particularly the case when facilities employ less staff – such as at night time. Some facilities additionally lack physical resources and are poorly designed and operate with insufficient private toilets.

Staff and residents' perspectives (beliefs, values, expectations and knowledge): Superimposed on impairments in mobility and organisational constraints is the finding that residents' have low expectations for improvements in their continence status (O'Dell, Jacelon, & Morse, 2008), tend to believe that incontinence is inevitable and untreatable (Robinson, 2000) and experience difficulties maintaining continence in an environment characterised by rituals and routines, pad rationing, limited access to assistance with pad changing, a lack of choice about the type of products available, toileting times and changing incontinent products, ageism, and devaluing of residents contribution to self-care (MacDonald & Butler, 2007). Within this context, Robinson claimed that some residents' learn to 'let go' – a phenomenon that was usually negotiated with staff (Robinson, 2000). Simmons and Schnelle also found that residents generally had low expectations for improvements in their continence status or in the care they would receive (Simmons & Schnelle, 1999). Consumer input into the evaluation and management of incontinence in LTC is a major issue to address in future health promotional programs. Watson and colleagues found in their retrospective chart review, that only 2% of residents or their families had their preferences for treatment recorded (Watson, Brink, Zimmer, & Mayer, 2003). Staff beliefs, values and expectations also play an important role in how incontinence is managed in LTC. Nurses' knowledge and beliefs about incontinence have been extensively evaluated (Cheater, 1991; Connor & Kooker, 1996; C. E. Dubeau, Ouslander, & Palmer, 2007; Freundl & Dugas, 1992; Lekan-Rutledge, et al., 1998; Mansson-Lindstrom, Dehlin, & Isacson, 1992; M. H. Palmer, 1995; Saxer, de Bie, Dassen, & Halfens, 2008; Swaffield, 1995). Collectively, such research reveals that nurse's and LTC staff's knowledge and beliefs about incontinence reflect those of the broader society which links incontinence to old age.

The utility of assessment methods for UI in older adults in LTC: There is mounting evidence that residents with incontinence are rarely evaluated for their condition. Watson and colleagues assessed the use of the AHRQ Guideline for UI (Fantl, et al., 1996) in 52 LTC facilities and reported: aspects of UI assessment that were rarely done were; rectal examination (15%); digital examination of prostate (15%); pelvic examination (2%) and PVR (6%). Eighty-one percent had a reversible cause of UI at the time of onset, but only 34% had all addressed (Watson, et al., 2003). The researchers stated that "the lack of recommended evaluation/treatment indicates less than optimal care" (p. 1785). In their audit of structures and processes of care across 138 primary care sites and 27 care homes in the UK, Wagg and colleagues reported a similar lack of physical assessment. "Specialist assessments were performed by staff trained to carry out abdominal, vaginal and rectal examinations in only 54% of cases" (Wagg, et al., 2008)(p. 40). This finding of inadequate

assessment was also noted by Schnelle who found that no LTC that they studied had information of an assessment to determine a residents' suitability for prompted voiding (Schnelle, Cadogan, Grbic, et al., 2003).

Based on findings from a national scoping study in Australia, LTC staff may be poorly equipped to conduct a comprehensive continence assessment. In 2005 as part of the Australian Government's National Continence Management Strategy for the Australian Government Department of Health and Ageing, our team conducted a national review of these tools to evaluate the extent to which they met ICI recommendations for the assessment of incontinence in frail older adults. We appraised 76 resources and found that none referred to all 43 criteria recommended by the ICS. Only 27 resources contained prompts for assessing either or quality of life and less than half contained cues that would assist with diagnosis, management and evaluation of resident care (O'Connell, et al., 2005).

Some LTC staff in USA have responded with concern to regulatory changes that promote an assessment of residents' continence status (Du Beau, Ouslander, & Palmer, 2007). In particular, staff expressed concern that assessment procedures such as pelvic examinations, catheterisations and PVRs were invasive and would violate residents' rights and dignity. The researchers reported that "misunderstandings would hinder successful implementation. Attempts to introduce such changes may represent a bigger problem of innovation in LTC. For example, research protocols such as prompted voiding can reduce incontinence rates in LTC for 25-40% of residents (Schnelle, Ouslander, & Cruise, 1997), however rates typically return to pre protocol levels after the withdrawal of the research team (Schnelle, et al., 1993; Schnelle, Newman, & Fogarty, 1990). While staff comply with requirements to complete documents, discrepancies between documented practice and actual practice persist (Schnelle, Bates-Jensen, Chu, & Simmons, 2004; Schnelle, Cadogan, Yoshii, et al., 2003). Similarly, educational approaches that improve staff knowledge do not necessarily lead to changes in practice (Campbell, Knight, Bensen, & Colling, 1991; Collette, Leclerc, & Tu, 2003; del Rio Sevilla, Gotor Perez, Alarcon Alarcon, & Gonzalez Montalvo, 2003; Karlowicz & Palmer, 2006; Lekan-Rutledge, 2000; Stevens, et al., 1998; Vinsnes, Harkless, & Nyronning, 2007; Williams, Crichton, & Roe, 1997). Some educational approaches appear to be more effective than others. These include:

- Educational programs that are combined with staff support and clinical coaching or 'on-the-job training' (Lekan-Rutledge, 2000; Stevens, et al., 1998; Vinsnes, et al., 2007)
- Educational programs that incorporate competency-based and problem solving approaches to learning (Collette, Bravo, & Tu, 2009; Collette, et al., 2003)
- Educational programs that emphasise the affective domain (experiential component) in education programs (Henderson & Kashka, 2000; Karlowicz, 2009; Karlowicz & Palmer, 2006)

To facilitate improvements to the evaluation of incontinence in LTC and, more particularly, to promote a physical examination, key implementation questions include: who is best placed to perform this assessment, how would and should the findings of such examinations alter management and what ethical factors should be considered? One option for LTC would be to engage Gerontological Nurse Practitioners or Continence Nurse Advisors who have the skills and knowledge to perform a comprehensive continence assessment. Other key stakeholders that need to be

considered are General Practitioners (GPs). To date, there is little research data about the medical assessment and management of incontinence in LTC.

Multiple factors influence the extent to which the findings of a physical examination affect the management of incontinence in frail older adults (refer to chapter on urinary incontinence in Frail Elders – 4th edition of the ICI). Ethical considerations are paramount. One study found that LTC staff operated from an ethical framework in which focuses on palliation, protection, personhood and preserving health (Mathes, Reifsnnyder, & Gibney, 2004). This emphasis on protection, palliative and preservation may conflict with the justice principle of equitable access to diagnosis and treatment for incontinence.

Conclusion / key points

- Despite advances in knowledge, incontinence continues to be a major problem for individuals living in LTC, for their families and for the staff who care for them.
- Most residents of LTC are considered frail: they are often very elderly, have multiple health problems; are often highly dependent on staff to meet their basic human needs and most live out their remaining lives in care.
- Incontinence in LTC is a multifaceted issue (a function of physical, psychological, social and environmental factors).
- Impaired mobility, organisational constraints and staff and resident beliefs and expectations operate jointly to predispose residents to incontinence.
- Individuals in LTC are rarely evaluated to determine reversible causes of incontinence and lack a physical assessment.
- High rates of incontinence persist despite research efforts to improve continence care through a) assessment tools/procedures, b) toileting assistance programs and c) staff education.
- Implementation issues to consider to promote a physical examination include who would be best placed to perform this assessment, how would and should the findings of such examinations alter management and what ethical factors should be considered.
- LTC staff operate from an ethical framework which focuses on palliation, protection, personhood and preserving health.

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Urodynamic Investigation in Elderly Surgical Options in Elderly

Ruch Kirschner-Hermanns, MD

Univeritätsklinikum Aachen
Kotinenzzentrum
Aachen, Germany

Urodyanmics

Goal is an objective view of symptoms

Urodynamics are not needed in all older patients

85% of elderly patients – basic diagnostics are sufficient to begin treatment

Basic evaluation

History

Medication review

Micturition diary

Evaluation residual urine volume

Urine status

Stress test

Observed micturition

Urogynecological examination in women

Rectal examination in men

Indications for Urodynamics

Emperical therapy was not successful

Surgical therapy has failed and alternative options are considered

Complex medical history or neurological disease

Potential risks to patient with therapy

Before any surgical intervention

Technical aspects

Same in elderly and younger patients

May be more difficult to interpret

Patient must be able to cooperate and communicate

May be able to perform only needed components of study

May include other studies (cystogram or cystoscopy)

Bladder symptoms increase with advancing age

Overactive bladder

Outlet obstruction

- Detrusor overactivity
 - Terminal
 - Phasic
- Loss of compliance

- Detrusor sphincter dyssynergia
- Detrusor hypotonia
- Detrusor dysfunction

Influence of neurologic disease

- Parkinsons disease
- Stroke
- Diabetes and diabetic cystopathy
- Multiple sclerosis

Surgical Therapies

- Important to consider the wishes of the individual and caregivers
- Must consider comorbidities

Age alone should not hinder the patient to get an appropriate surgical therapy!

Prior to Surgery

- Evaluate and treat comorbidity
- Medications
- Functional and cognitive assessment

Adequate trial of conservative therapy prior to surgery

Discuss with patient and caregiver anticipated outcomes and goals of care

Preoperative assessment to minimize postoperative complications

- Delirium
- Infection
- Dehydration
- Falls

Postoperative issues

- Pain management
- Fall prevention
- Nutrition
- Specialized care units

No studies regarding gynaecological surgery in institutionalized elderly women

Injection of bulking agents appears effective

Risks similar to most other major non-cardiac surgical procedures

Minimally invasive treatments may be useful in older adults but may have little to do with whether surgical treatments are appropriate in the frail elderly

Urodynamics are helpful to rule out bladder outlet obstruction or significant bladder dysfunction

Slings in men and women

Artificial urinary sphincter is the gold standard for men with severe post-prostatectomy incontinence

Botulinum-A Toxin
Still under investigation

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