

C E DuBeau, S Simon, JN Morris
Beth Israel Deaconess Medical Center and Hebrew Rehab Center For Aged, Boston MA, USA
THE IMPACT OF URINARY INCONTINENCE AND CHANGING CONTINENCE STATUS ON QUALITY OF LIFE IN NURSING HOME RESIDENTS

Aims of Study

Nursing home (NH) residents have the highest prevalence of urinary incontinence of UI of any population, yet nothing is known about the impact of UI on their quality of life (QoL). The QoL effects of UI for NH residents cannot be assumed to be similar to community-dwelling older persons because of the competing impact of the significant burden of functional and cognitive impairments and medical disease among NH residents. At the same time, this information is crucial for outcomes evaluation and cost-benefit analyses of UI treatments in the NH setting. The aims of this study were to: 1) determine whether incontinent NH residents have worse QoL than continent residents; 2) evaluate whether the relationship between UI and QoL in the NH is confounded by functional and cognitive status and medical conditions; and 3) determine whether change in continence status is associated with change in QoL for NH residents.

Methods

We analyzed prospectively-gathered Minimum Data Set (MDS) data from every NH in 5 American states during 1994-96. The MDS is a government-mandated instrument completed for all NH residents on admission, quarterly, and with any significant change in status. It includes information on demographics, functional status (including UI), cognition, medical conditions, and quality of life. For our analyses, we excluded: persons aged <65 years, nonvoiders (either because of catheterization, ostomy, or hemodialysis), and persons with unstable UI and /or QoL status (NH admission, delirium, large change in functional status, comatose/ endstage). We defined UI as *consistent* leakage $\geq 2x/$ week over 3 months, and continence as *consistent* dryness over 3 months. For QoL we used the MDS Social Engagement (SocE) scale, a validated measure of QoL in NH residents [1]. We used the validated MDS Cognitive Status (CS) and Activities of Daily Living (ADL) hierarchical scales as measures of cognitive and functional status.

The relationship between UI and QoL, and any possible confounding by comorbid conditions, was evaluated in bivariate and multiple regression models using SocE as the dependent variable. We also stratified subjects by cognition and functional status [1], and compared SocE scores by UI status in each group.

To evaluate the effect of change in continence status on QoL over two quarters (6 months), we analyzed three patterns of UI change: *decline* (new or more severe UI over both quarters, or over one quarter and stable in the other); *no change* (stable UI status over both quarters); and *improved* (new continence or less severe UI over both quarters, or over one quarter and stable in the other). Change in SocE over the entire 6 mos period was the dependent variable. The relationship between UI pattern and change in QoL was analyzed with ANOVA, bivariate and multiple regression modeling, and by stratification by cognitive and functional status.

Results:

There were 133,111 residents eligible for evaluation. Of these, 90,538 (68%) had consistent voiding status of whom 65% were incontinent. UI had significant bivariate association with worse QoL ($p < .001$), but this relationship did not remain significant when controlled for functional status and cognition in the multivariate model. However, the stratified analysis demonstrated significant association between UI and lower QoL ($p < .001-.01$) in persons with moderate ADL impairment (regardless of cognition). The differences in QoL between incontinent and dry persons were clinically important (absolute mean difference SocE score $\sim 10\%$).

89,999 residents (68%) were evaluable for change in UI status over 6 months. Of these, 83% had unchanged UI status, 12% declined, and 5% improved. ANOVA demonstrated significant associations between UI decline and worsening QoL, and UI improvement with better QoL ($F 391.6, p < .00001$). Stratified analysis showed that the largest decreases in QoL were associated with UI decline in residents with intact to moderate ADL and cognitive impairment, while the greatest increases in QoL were associated with UI improvement in residents with moderate ADL impairment. In the multivariate model UI decline remained significantly associated with worsening QoL (odds ratio 1.46 [95% CI 1.36-1.57]). UI decline was second only to the impact of cognitive decline (OR 2.06 [95% CI 1.93-2.21]) and functional decline (OR 1.78 [95% CI 1.66-1.90]) on worsening QoL.

390 Abstracts

Conclusions

This is the first study to demonstrate that UI is significantly associated with QoL in NH residents. The impact of UI on QoL appears greatest for residents with moderate ADL impairment. Moreover, residents with a decline in continence over 6 months are 46% more likely to have a decline in QoL than residents who do not experience worsening UI, even after controlling for decline in functional and cognitive status and other covariates. These results indicate that even in this functionally and cognitively impaired and medically-ill population, UI has a major role in determining QoL. Most importantly, these results provide a powerful justification for interventions to improve or maintain continence among NH residents, and a rationale for targeting interventions at those residents most likely to have a QoL benefit.

References

1. Mor V, Branco K, Fleishman, et al. J Gerontology 1995;50B:1-8.

121

P.C. Gautam, A.D. Jamieson, S. Donald
Woodend Hospital, Aberdeen. AB15 6XS. Scotland,U.K.
DO THE VERY FRAIL, OLDEST OLD BENEFIT FROM ACTIVE MANAGEMENT OF URINARY INCONTINENCE?

Aims of study An audit of management of urinary incontinence in the geriatric wards of a large teaching hospital had shown that 33% of very frail elderly patients had been treated with a permanent indwelling catheter of whom only 10% had been given a full assessment of their urinary incontinence prior to catheterisation (1). The aim of this study was to determine if these elderly patients would benefit from active assessment and investigation of their incontinence.

Methods The study population consisted of all patients aged 90 or over, at first attendance, who were assessed at the continence clinic over a 1 year period between October 1997 and October 1998. The following information was obtained for all the patients : sex; MSQ (2); modified Barthel score(3); source of referral; diagnoses; cystometric measurements; number of coexisting pathologies; number of medications; management and outcome. All had been assessed with the standard protocol used by the clinic. All were given a full physical examination and all but one had urodynamic studies.

Results 19 patients had been referred for assessment of intractable urinary incontinence of whom 16 attended the clinic. 15 had urodynamic studies performed.

14 were female, 2 male. Mean age was 90.7 years (range 90 - 94). Mean MSQ was 7.3 (range 4 - 10). Mean modified Barthel score was 13.3 (range 4 - 20). Mean number of coexisting pathologies was 8.1 (range 2 - 17). Mean number of medications was 3.8 (range 0 - 7). Mean cystometric capacity was 236.3ml (range 68 - 576). Detrusor pressure range was 11 - 104cmH2O. Residual volume range was 0 - 1300ml. Flow rate range was 0 - 36ml/sec.

26 causes were identified for urinary incontinence in these 16 patients. These were : urinary tract infection 7; urinary obstruction 4; genuine stress incontinence 3; detrusor instability 5; voiding dysfunction 7. All these patients were subsequently actively managed for their urinary incontinence.

Outcomes were : 3 became completely dry; 4 became mostly dry with occasional incontinence; 2 improved somewhat; but 4 showed no improvement; and 1 was worse (who subsequently died of brain neoplasm). 2 had not been followed up.

Conclusions An overall improvement was seen in 9 out of 14 patients. This is despite severe frailty and multiple concurrent pathologies giving a considerable degree of physical and cognitive limitation. Although the numbers of these very elderly patients was relatively small, these results show that detailed clinical assessment including urodynamic studies can benefit a substantial proportion of these patients with continence problems.

- References**
- (1) A report on the audit of urinary continence among patients in the department of medicine for the elderly, Woodend Hospital, Aberdeen. CRAG publication (7), Scottish Office 1993.
 - (2) Brief assessment of the mental state in geriatric domiciliary practice. The usefulness of the mental status questionnaire. Age and Aging 1973; 2:92 - 101.
 - (3) The Barthel ADL index : A Reliability Study. International Disability Studies 1988; 10: 61 - 3.

No financial support was requested, or received, to carry out this study.