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# PREVALENCE OF URINARY INCONTINENCE IN RESIDENTS OF NURSING HOMES

Hypothesis / aims of study

The incidence of faecal and urinary incontinence increases with age. Especially in nursing homes people often do not only suffer from incontinence in addition they present co morbidities like dementia or functional limitations like loss of mobility. In this study we evaluated the prevalence of urinary incontinence in residents of nursing homes. Further we tried to identify possible risk factors correlating with incontinence.

Study design, materials and methods

After receiving informed consent, a total of 81 residents of nursing homes (18 male, 63 female, mean age 84 years) were included. The medical histories including medication were taken and we performed examinations as follows: physical examination, ultrasound imaging of upper and lower urinary tract, dip stick urine analysis and microbiological testing, 24 h pad testing, mini nutritional assessment, mini mental state examination, demtect, timed up&go test, and geriatric depression scale. Severity of urinary incontinence was measured by the amount of pads used in 24 hours. Residents who needed less then 3 pads were classified as moderately, 3 to 6 pads as severely and residents needing more than 6 pads or wearing diapers as completely incontinent.
Participants who complained about voiding symptoms and were not immobilized or suffering from severe dementia, were asked to be tested urodynamically.

Results

Urinary continence was given in 6 of 81 (7%) residents of nursing homes. 8 of 81 (10%) had an indwelling catheter and 67/81 (83%) presented with urinary incontinence at different degrees (Tab 1).

Tab. 1: Distribution of observed urinary incontinence

| | continent | moderate incontinence | severe incontinence | complete incontinence | indwelling catheter |
|---|---|---|---|---|---|
| male, n=18 | 2 | 5 | 3 | 3 | 5 |
| female, n=63 | 4 | 17 | 20 | 19 | 3 |
| **∑ n=81** | **6** | **22** | **23** | **22** | **8** |

There was no statistically significant correlation between the degree of urinary incontinence and residents taking diuretics, the prevalence of diabetes or urinary tract infections. The prevalence of urinary tract infections proofed by dip stick and microbiology was 80% among the continent residents, 81% among the incontinent residents and 100% among the catheterized residents. Microbiological testing showed E. coli being most common (43%), followed by enterococci (18%), Proteus and Kebsiella pneumoniae (11% each).
A positive correlation was observed between urinary incontinence and dementia ($p=0.0016$), immobility ($p<0.001$) and malnutrition ($p=0.01$).
Ultrasound imaging did not show any dilatation of the upper urinary tract. Post voiding residual volumes of more then 200 ml were observed in 6 female residents. With regard to residents complaints we performed urodynamic testing in 8 cases which showed detrusor overactivity in 4 cases, detrusor underactivity in 3 cases and normal detrusor function in one case.

Interpretation of results

In our study we could show, that urinary incontinence is a very common condition among residents of nursing homes. Incontinence was correlated with dementia, loss of mobility and malnutrition, which all are typical conditions that lead to admission to a nursing home. As approximately 90% of all residents presented with dementia at different degrees, questionnaires or interviews to further classify urinary incontinence by cause or to assess quality of live were not appropriate.
Ultrasound imaging and urodynamic studies did lead to a better understanding and active therapy which consisted of either anticholinergic medication or intermittent catheterization. The majority (78%) of the residents either did not whish any therapy at all, or were in condition that made further diagnostics impossible. With regard to the central nervous side effects of anticholinergic medication especially in geriatric patients, other therapies e.g. Botulinum toxin injection have to be discussed.

Concluding message

In this very special study population functional deficits seemed to be the main reasons for urinary incontinence. Therefore standard urological procedures to evaluate incontinence have to be supplemented by a geriatric assessment.

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