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INVESTIGATION OF LOWER TRACT DYSFUNCTION FOR RESIDENTS IN A GERIATRIC HEALTH SERVICES FACILITY

Hypothesis / aims of study

More than half of the residents in geriatric health services facilities for the elderly, aged 65 years or older, suffer from lower urinary tract dysfunction. It is necessary to accurately understand lower urinary tract symptoms (LUTS) to determine the appropriate treatment strategy. To obtain a clearer picture of LUTS, we investigated lower urinary tract function of residents using a monitoring machine. We confirmed whether the method was suitable for the accurate determination of LUTS.

Study design, materials and methods

Lower urinary tract symptoms were evaluated in 28 female residents in a geriatric health services facility. The mean age was 82.6±7.9 years old (range 68 to 100 years). Residents continued to perform their activities and voiding routines. We monitored incontinence using a thin-layer membrane sensor in the diaper or lingerie. We measured the volume of leakage by weighing the pad and/or diaper after each sensor response. Moreover, the urinary output volume was measured during urination by a urine meter installed in the toilet in the rest room. Each subject was monitored for 48 hours with a sensor in the diaper or lingerie, and the voiding time, incontinence time, volume of urination and leakage, urinary urgency, 24-hour total fluid intake and action observation at incontinence were recorded in a bladder diary.

Results

All data were recorded accurately using this method. The mean 24-hour frequency was 12.8±6.1 times (range 3 to 33) per day; daytime frequency was 9.1±4.2 times and the nighttime frequency was 3.8±2.7 times. A total of 26 (92.9%) experienced urination more than 8 times. The mean number of leakages was 3.6±4.9 times (range 0 to 17.5) per day. The mean number of incidents of urinary urgency was 2.2±2.3 times (range 0 to 9.5) per day.

Twenty one of the residents (75.0%) experienced one or more situations of urinary urgency and they were diagnosed with overactive bladder (OAB). Moreover, lower tract dysfunction types were classified according to symptom observation; 15 cases of OAB with urgent urinary incontinence (of 14 OAB with mixed urinary incontinence), 6 cases of dry type OAB, 2 case of urinary frequency and 5 cases of stress urinary incontinence. Moreover, the mean nocturnal urine volume was 50.0±15.5% (range 17 to 83.2%), and 26 of them exhibited nocturnal polyuria. Therefore, 21 residents (75.0%) exhibited OAB, 19 (67.9%) exhibited stress urinary incontinence, and 26 (92.9%) had nocturnal polyuria.

Interpretation of results

We were able to accurately record the bladder diary using this method. A large proportion of female residents in the geriatric health services facility exhibited OAB, stress urinary incontinence and nocturnal polyuria. Maintenance of an accurate voiding diary is important to evaluate the effectiveness of intervention.

Concluding message

While it is very difficult to accurately record a voiding diary in a geriatric health services facility, we were able to produce an accurate voiding diary by this method.

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the Ethics Committee Tohoku University School of Medicine and followed the Declaration of Helsinki Informed consent was obtained from the patients.