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URINARY INCONTINENCE IN PATIENTS WITH ALZHEIMER DISEASE

Hypothesis / aims of study
Urinary incontinence (UI) is very common in Alzheimer's disease(AD), and can result in medical morbidity, impaired self-esteem of the patents, caregiver's stress, early institutionalization of the patients, and considerable financial cost. The objective of this study was to evaluate the characteristics of the Alzheimer`s disease patients with urinary incontinence in and to find the factors to influence on the development of it.

Study design, materials and methods
From March of 2008 to October of 2009, the probable AD patients according to the National Institute of Neurological and Communicative Diseases and Stroke/Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA) criteria with the UI which was developed in a year were included. For all the patients, the UI questionnaires, urodynamic study and neuropsychologic tests such as the Korean version of the minimental status examination (K-MMSE), Clinical Dementia Rating (CDR), Clinical Dementia Rating-Sum of Boxes (CDR-SB), Global Deterioration Scale (GDS), Barthel Activities of Daily Living (B-ADL) and Seoul-Instrumental Activities of Daily Living (S-IADL) were performed and their types of UI were diagnosed by the urologist. Also, their medical history and the factors to influence on the development of UI were checked.

Results
The total number of subjects was 117 (50 men, 67 women), and the mean age was 77.8 ± 8.9 years (men: 75.7±9.4, women: 79.3±8.4). The type of UI showed 40.1 % for urge incontinence, 23.9% for functional incontinence, 15.4% for overflow incontinence and 11.1% for stress incontinence. The 9.4% of all patients have more than 2 type of UI. Mean duration from the onset of dementia symptoms is 44.7 months.

Interpretation of results
The most common type of UI in patients with AD was urge incontinence, followed by functional incontinence. Mean onset of UI from the onset of dementia symptoms is 44.7 months.

Concluding message
UI is an inevitable symptom in the progression of AD. Clinicians who treat patient with AD should keep in mind the development of UI in the clinical course of AD and consultation for treatment might be needed.

References
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What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Ethics Committee of Hallym University Kangnam Sacred Heart Hospital**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**