Table 1. Baseline clinical characteristics of the study population

|                      | MCI -> Dementia (n = 77) | MCI -> MCI (n = 145) | P-value |
|----------------------|--------------------------|----------------------|---------|
| Sex (male, %)        | 25.6                     | 37.5                 | 0.074   |
| Age (years)          | 76.9 ± 0.9               | 73.1 ± 0.5           | <.0001* |
| BMI (kg/m²)          | 20.8 ± 0.6               | 23.5 ± 0.2           | <.0001* |
| Current smoking (yes, %) | 2.6                     | 6.3                 | 0.226   |
| Current Alcohol (yes, %) | 14.5                     | 16.2                | 0.783   |
| Regular exercise (yes, %) | 51.3                     | 52.8                | 0.936   |
| Lowest income (%)    | 7.9                      | 8.4                 | 0.899   |
| School education (years) | 9.1 ± 0.5               | 9.7 ± 0.4           | 0.432   |
| Spouse (yes, %)      | 48.1                     | 66.7                | 0.074   |
| Hypertension (%)     | 41.1                     | 57.6                | 0.023*  |
| DM (%)               | 11.0                     | 22.3                | 0.045*  |
| Hyperlipidemia (%)   | 17.8                     | 20.1                | 0.682   |
| Heart disease (%)    | 8.2                      | 12.1                | 0.387   |
| Cerebrovascular disease (%) | 8.2                      | 10.9               | 0.541   |
| Psychiatric disease (%) | 8.2                      | 8.9                | 0.870   |
| Dementia (%)         | 26.6 ± 0.1               | 23.7 ± 0.1          | 0.686   |
| Cerebrovascular disease (%) | 29.8 ± 0.1       | 30.7 ± 0.1         | 0.068   |

BMI, body mass index.

Data are presented as the means ± standard error (SE) for continuous variables.

* P < 0.05

Table 2. Risk factors predicting dementia conversion of mild cognitive impairment

|                      | Nagelkerke R² | Odds ratio | 95% CI | P value |
|----------------------|---------------|------------|--------|---------|
| Age                  | 0.053         | 0.913–0.999 | 0.029* |
| BMI                  | 1.165         | 1.055–1.285 | 0.002* |

* P < 0.05

Results:
Among 702 MCI patients, dementia occurred in 77 people, at rate of 12.5 cases per 100 persons. The results shown that compared with people of dementia converting group, people of non converting group were more younger, having spouse, having higher BMI, and having hypertension and DM. Using logistic regression model, the lower BMI (OR: 1.165, 95% CI 1.055–1.285) was at increased risk of progression to dementia in MCI patients.

Conclusions:
Our finding suggested that being underweight in MCI patients was associated with a higher risk of progression to dementia.

Cognitive impairment in elderly taking laxatives in community population study

Jung-Woo Kim, MD
Tae Hui Kim, MD
Jung-Jae Lee, MD, PhD
Seok-Bum Lee, MD, PhD

Neural predictors of memory improvement by multi-strategic memory training based on metamemory concept in older adults with subjective memory complaints

Youngsung Cho, Jun Young Lee
SMG-SNU Boramae Medical Center, Republic of Korea

Abstract
Many older people get help from a memory training and others don’t. Understanding individual differences to get memory improvement by a memory training is important to maximize the training efficiency. The purpose of this study was to find which initial neuropsychological and brain morphological characteristics predict memory improvement by memory training based on metamemory concept. A total 39 older adults with aged over 55 years who are diagnosed as aMCI participated in metamemory training. They underwent neuropsychological tests and MRI at the entry of the training. Average age of 39 participants was 69.82(SD = 4.90) and 11 of them were male(28.20%). Average years of education was 11.41(SD = 4.31). Average SMCQ and MMSE were 14.5(SD = 3.34) and 27.13(SD = 2.67) respectively. CS difference ranged between -0.65 and 0.93 and the average value was 0.03(SD = 0.32). Stepwise multiple regression revealed
that only the years of education($\beta = -3.8$, $p = .02$) was significant to predict CS difference (adjusted $R^2 = .12$, $F(1, 37) = 6.27$, $p = .02$). In the gray matter thickness analysis, thinner precuneus, cuneus and posterior cingulate gyrus predicted memory improvement (CS difference ($p < .05$ RFT corrected); $\beta = -.37$, $t = 4.16$, number of vertex = 231, Peak MNI coordinate(x, y, z) = (-4.90, -68.97, 29.38). In DTI analysis, FA and RD of splenium corpus callosum were significantly associated with CS difference after FWE correction ($p < .005$); $t = 3.5$, $p = .03$ for FA; $t = -3.5$, $p = .03$ for RD. Initial neuropsychological traits and brain morphology could be a promising method to predict cognitive enhancement after training. Poor strategies in memory and higher integrity of hippocampal network may be closely associated with outcomes of multi-strategic training based on metamemory concept.

**PT589**

Characteristics of Cognitive function by the type of Neurocognitive disorder and Cognitive factors affecting severity classification of Neurocognitive disorder

W.S. Seo, B.H. Koo, E.J. Cheon, H.K. Kim, Y.J. Lee, S.W. Lee, S.H. Yun, J.H. Choi, K.W. Lee, W.S. Choi, M.S. Keum.

Department of Psychiatry, Yeungman University College of Medicine, Daegu, Republic of Korea.

**Abstract**

**Objectives:** The purpose of this study was to assess differences in cognitive function of patients with neurocognitive disorder by subtypes and severity, and to investigate the cognitive tests affecting severity classification of neurocognitive disorder.

**Methods:** We retrospectively examined 132 patients diagnosed with Neurocognitive disorder (NCD) due to Alzheimer’s disease (AD), vascular neurocognitive disorder (VD) and traumatic brain injury (TBI) according to the Diagnostic and Statistical Manual of Mental Disorders fifth edition. All patients were administrated the Seoul Neuropsychological Screening Battery 2nd Edition and were classified into Major NCD and Mild NCD by clinical dementia rating score.

**Results:** Major VD group exhibited greater impairment on Korean-Boston Naming Test ($p = .037$), Digit symbol coding test ($p = .002$), Korean-trail making test-Elderly’s version part A ($p = .031$) than Major AD group. Major TBI group exhibited greater impairment on immediate recall in Seoul Verbal Learning Test-Elderly’s version (SVLT-E, $p = .04$), letter fluency test in Controlled oral word association test ($p = .036$), color reading test in Korean-color word stroop test ($p = .01$), Digit symbol coding test ($p = .002$), Korean-trail making test-Elderly’s version part A than Major AD group ($p = .031$). Logistic regression analyses showed that cognitive tests affecting severity classification of neurocognitive disorder were Korean-Boston Naming Test ($p < .01$) and SVLT-E ($p < .05$).

**Conclusion:** Despite the limitations of our study, it was indicated that AD, VD, and TBI had some differences in the neurocognitive functional impairment. The data also suggested that Korean-Boston Naming Test and memory function test could be a useful tool in classifying severity of neurocognitive disorder.

**Key words:** Neurocognitive disorder, Cognitive function, Alzheimer’s disease, Vascular dementia, Traumatic brain injury

**PT590**

Behavioral and psychological symptoms of dementia and antipsychotic drug use in the elderly with dementia in Korea long-term care facilities

Kang Soo Lee, MD PhD

CHA University, Republic of Korea

**Abstract**

**Background:** Behavioral and psychological symptoms of dementia (BPSD) are known predictors of institutionalization, lower quality of life, and caregiver distress. Guidelines recommend initial management with non-pharmacological means, but antipsychotic drugs are widely used for the treatment of certain BPSD.

**Objectives:** The objective of the current study is to analyze the prevalence of behavioral and psychological symptoms of dementia (BPSD) and antipsychotic drug use in long-term care facilities in Korea.

**Methods:** Retrospective chart review and cross-sectional analysis was conducted with 529 residents diagnosed with dementia out of a total 835 residents in 20 long-term care facilities from October 2011 to April 2012. Basic characteristics of residents such as prevalence of BPSD and antipsychotic prescriptions were analyzed. BPSD was determined using the Neuropsychiatric Inventory-Questionnaire (NPI-Q) assessment tool, and associations with the use of antipsychotic drugs were investigated.

**Results:** The mean age of the 529 residents was 81.16 ± 8.73 years, 410 (77.5%) were female. The mean length of stay in long-term care facilities was 24.19 ± 23.06 months. The primary outcome was a prescription rate of antipsychotic medications. Of the 529 dementia residents, 143 (27%) were prescribed antipsychotic medications (quetiapine, risperidone, olanzapine). Agitation was the most common symptom of BPSD. Disinhibition and irritability were associated with the use of antipsychotics in a multiple logistic regression analysis (respectively $p = .007$, $0.016$ and adjusted odds ratio $= 0.51(0.31–0.83)$, $0.57(0.36–0.90)$).

**Conclusion:** BPSD are common in long-term care facilities in Korea. Antipsychotics were small but statistically significant benefits in the treatment of BPSD and have been still the pharmacological short-term treatment option for BPSD associated with disinhibition and irritability in long term care facilities in Korea.

**PT591**

Effects of group therapy based on Korean traditional play for dementia patients

Jung Jae Lee, Hye Seok Chung, Sae Bum Kim, Seok Man Kim, Seul Gi Koo, Jae Won Lee, Kyung Kyu Lee, Seok Bum Lee, Ki Chung Paik, Jaek Kuon Shin, Yeo Song Yoon

Dankook University Hospital, Republic of Korea

**Abstract**

**Objectives:** Although cognitive enhancers have demonstrated efficacy, their effect were not good enough to maintain function of dementia patients. Therefore, this study investigated the efficacy of group therapy based on Korean traditional play for dementia patients.

**Methods:** We enrolled 11 dementia patients and administered 4 sessions of group therapy based on Korean traditional play that subjects have enjoy when they were young. Comprehensive assessments were administered before and after main sessions. So, overall program was consisted of 6 sessions. Pre/post assessments were consisted of Mini-mental status examination (MMSE-DS), geriatric depression scale (GDS-K), dysexecutive questionnaire (DEX-K), Zarit burden interview, neuropsychiatric inventory (NPI-K), and instrumental activities of daily living (DCAP-IADL). 4 main sessions were consisted of making a straw rope (Sekki) and sharing related memories, making a pasteboard card (Dakgi) and playing it, making a traditional shuttlecock (Jegi) and playing it with the feet, and making a sling shot (Sechong) and playing it.

**Results:** Among subjects, 8 subjects (72.7%) were diagnosed as Alzheimer’s disease, 9 (19.1%) was vascular dementia and 2 (18.2%)