Averaged BP for each month consisting of 8 sessions was stable until the endpoint in control group. In the YKSCH group, averaged BP increased at 6 months of age and lasted.

**Conclusion:** YKSCH increased instrumental motivation in wild-type mice. It is valuable to test YKSCH effect on the decreased motivation of Alzheimer’s disease model.

**PT584**

Peripheral inflammatory markers in Alzheimer’s disease and mild cognitive impairment

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**Abstract**

**Objective:** Neuroinflammation has been recognized to play a role in progression of Alzheimer's disease (AD). Tumor necrosis factor (TNF)-α is one of the main proinflammatory cytokines that plays a central role in initiating and regulating the cytokine cascade during an inflammatory response. Interleukin (IL)-6 is a multifunctional cytokine that plays an important role in host defense, with major regulatory effects upon the inflammatory response. We measured serum levels of TNF-α and IL-6 in patients with AD, as compared to mild cognitive impairment (MCI) subjects and cognitively preserved older adults and analyzed its correlation with cognitive performance in these subjects.

**Methods:** The study included 92 subjects with AD (n=35), MCI (n=29) and normally cognitive function (n=28). The subjects’ overall cognitive functions and disease severity were measured using Korean version of the Mini-Mental State Examination (MMSE-K), the Clinical Dementia Rating (CDR), and the Global Deterioration Scale (GDS). The blood IL-6 and TNF levels were measured for subjects in all groups. The blood samples were stored in Vacutainer tubes containing citrate, were cooled with ice, and were immediately centrifuged at 3,000 rpm for 10 minutes. ANOVA was performed to analyze the statistical information of the serum IL-6 and TNF-α levels among all groups. The correlation between serum levels and several scores of cognitive function assessment was analyzed statistically.

**Results:** Among three groups, IL-6 levels in the AD group are significantly higher than MCI group and healthy controls (p=0.045). There is no difference of serum levels of TNF-α among all groups (p=0.082). MMSE-K score was negatively was positively correlated with TNF-α (p=0.025) and IL-6 (0.006). GDS score was positively correlated with TNF-α (p=0.019) and IL-6 (0.007). TNF-α and IL-6 were positively correlated with each other (p<0.001).

**Conclusions:** The serum levels of IL-6 may be a candidate for identifying AD and its progression. AD. Our results suggested proinflammatory cytokine production seems, in part, to be implicated in neurological deleterious effects observed in the development and progression in AD.

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**PT585**

Effect of Neuropsychiatric Symptoms on Mortality in Patients with Dementia: differences between Alzheimer’s dementia, subcortical vascular dementia, and frontotemporal dementia

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**Abstract**

**Background:** Neuropsychiatric symptoms (NPS) have shown significant associations with mortality of dementia in several recent studies, although results have not been consistent. The purpose of this study was to compare the relationship of NPS and mortality between three common subtypes of dementia.

**Methods:** Database was derived from the Clinical Research for Dementia of South Korea (CREDOS), a multicenter longitudinal cohort study. Subjects aged over 65 years, diagnosed with AD, SVD, or FTD at baseline were selected. NPS were grouped into 4 clusters: the psychosis cluster (delusions and hallucinations), the hyperactivity cluster (agitation/aggression, disinhibition, and irritability/lability), the affect cluster (depression and anxiety), and the apathy cluster (apathy/indifference, sleep/night-time disturbances, and appetite/eating abnormalities). Kaplan-Meier plots, log-rank tests and time dependent Cox proportional hazard models were utilized with adjusting various covariates.

**Results:** 4,410 cases of AD, 829 cases of SVD, and 129 cases of FTD were selected, with 851, 248, and 26 individuals currently deceased from each respective group. The presence of the psychosis cluster symptom (p<0.05; mild symptom: HR = 1.23, 95% CI 0.83–1.82; clinically significant symptom: HR = 1.89, 95% CI 1.24–2.86) at baseline was a risk factor for mortality in SVD. In FTD, the presence of the affect cluster symptom (p<0.05; mild symptom: HR = 9.89, 95% CI 1.93–50.60; clinically significant symptom: HR = 4.92, 95% CI 0.62–39.27) at baseline was significantly associated with mortality. None of the clusters were associated with mortality in AD group.

**Conclusions:** These findings demonstrate that NPS may increase the risk of mortality in subjects with dementia, and that its effects may differ according to dementia subtype. This indicates that the screening and intervention of NPS may be an important preventive strategy to delay progression to death, and that symptoms should be considered differently with regard to dementia subtype.

**PT586**

Body Mass Index and Progression to Dementia in Patients with Mild Cognitive Impairment

Soo Hyun Joo, Chang Uk Lee

**Abstract**

**Introduction:** Obesity has been proposed to lead to dementia. However, recent research found that being overweight also could increase the risk of dementia. We investigated the influence of body mass index (BMI) status at baseline on the development of dementia in mild cognitive impairment (MCI) patients.

**Methods:** For this study, we used a data derived from the Seoucoughi Support center for Dementia of which included people aged 60 years or older in whom diagnosed with MCI using consortium to establish a registry for Alzheimer’s disease (CERAD) between 2012 and 2015. The longitudinal date of 702 MCI patients was used to investigate the relationships among...
Table 1. Baseline clinical characteristics of the study population

|                     | MCI - > Dementia | MCI - > MCI | P-value |
|---------------------|------------------|-------------|---------|
| (n = 77)            | (n = 145)        |             |         |
| 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     | 2.6              | 6.3         | 0.226   |
| (yes, %)            | 14.5             | 16.2        | 0.783   |
| Current Alcohol     | 51.3             | 52.8        | 0.836   |
| consumption (yes, %)| 7.9              | 8.4         | 0.899   |
| Regular exercise    | 9.1 ± 0.5        | 9.7 ± 0.4   | 0.432   |
| (yes, %)            | 48.1             | 66.7        | 0.007*  |
| Lowest income (%)   | 7.9              | 8.4         | 0.899   |
| Highest income (%)  | 51.3             | 52.8        | 0.836   |
| School education (years) | 9.1 ± 0.5     | 9.7 ± 0.4   | 0.432   |
| Spouse (yes, %)     | 48.1             | 66.7        | 0.007*  |
| Medical problems (yes, %) | 41.1     | 57.6        | 0.023*  |
| Hypertension        | 11.0             | 22.3        | 0.045*  |
| DM                  | 17.8             | 20.1        | 0.682   |
| Hyperlipidemia      | 8.2              | 12.1        | 0.387   |
| Heart disease       | 8.2              | 10.9        | 0.541   |
| Cerebrovascular disease | 8.2            | 8.9         | 0.870   |
| Psychiatric disease | 51.3             | 52.8        | 0.836   |
| Family history      | 26.6 ± 0.1       | 23.7 ± 0.1  | 0.686   |
| Dementia            | 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            | 0.223         | 0.953      | 0.913–0.995  | 0.029*  |
| BMI            | 1.165         | 1.055–1.285| 0.002*       |

* P < 0.05

baseline BMI status, and risk of progression to dementia. Subjects were classified into two groups: Dementia converting group and non converting group.

Results: Among 702 MCI patients, dementia occurred in 77 people, at rate of 12.5 cases per 100 persons. The results showed 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.

PT587
Cognitive impairment in elderly taking laxatives in community population study

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Objective: Many studies have shown that non-motor symptoms can precede the decline of cognitive and motor function in neurocognitive disorders, and constipation is known to be one of them. Our aim is to evaluate cognitive functions in Korean elderly taking laxatives due to constipation.

Method: We used data from the Korean Longitudinal Study on Health and Aging (KLoSHA), which is a community-based cohort of aged ≥65 year. Among the cohort participants, 692 individuals (300 men and 392 women) taking prescription medication were enrolled. Eight tests of the Consortium to Establish a Registry for Alzheimer Disease neuropsychological battery (CERAD-NP) and Frontal Assessment Battery (FAB), and digit span test were applied to all study subjects. We compared the cognitive functions between the group is not taking laxatives and the group is taking it. The regression analysis was performed to assess the risk of cognitive impairment of the group taking laxatives.

Results: Of the Korean elderly studied, 35(5.1%, mean age: 76.27±8.45) were on laxatives, and 657(94.9%, mean age: 76.77±8.15) were not. There were no differences in age, sex, education, illness burden, sleep quality and score of depression scale between two groups. Scores of CERAD-NP tests and digit span test were not also observed differences. Only the score of FAB was lower in the group taking laxatives (OR=–1.53, 95% Confidence Interval (CI), -2.83 to -0.29).

Conclusion: The Korean elderly taking laxative showed a decrease in the frontal lobe function. Psychiatrist needs to be of interest to the constipation in the elderly with regard to cognitive impairment not just as the simple physical symptom.

PT588
Neural predictors of memory improvement by multi-strategic memory training based on metamemory concept in older adults with subjective memory complaints

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Objective: 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 4.95(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...