and DEP- patients were defined as having baseline Geriatric Depression Scale (GDS) scores of 5 or above and 0, respectively. **Results:** DEP+ converters showed earlier ages of conversion to dementia (p = 0.009) and greater left hippocampal volume loss than both DEP- converters and DEP+ non-converters over the 2-year period (p = 0.003, p = 0.001, respectively). Changes in total brain volume, differences in their clinical symptoms of dementia, daily functioning and apolipoe4 protein genotypes could not explicate these findings. There was no difference in conversion rate to dementia or progressive hippocampal volume change between DEP+ patients and DEP-patients, suggesting that depressive symptoms themselves may not lead to progression of dementia from MCI.

**Conclusion:** We conclude that there is a synergistic effect of depressive symptoms and smaller left hippocampal volume in MCI patients that accelerates conversion to dementia.

**PT569**

**Association between cerebral amyloid deposition and cognitive function in geriatric depression: pilot study using amyloid PET**

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**Abstract**

**Objective:** Brain β-amyloid (Aβ) burden is one of the most important pathophysiological markers of Alzheimer diseases (AD). It is also important to note geriatric depression (GD) is associated with developing AD. But, there are few studies that have examined cortical Aβ levels in GD. The purpose of this study is exploring relationship between brain amyloid deposition and cognitive function in GD.

**Methods:** Participants included elderly patients over 60-year-old with major depressive disorder who had subjective cognitive complaints, not been diagnosed with dementia yet. Thirteen participants received cognitive assessments by Repeatable Battery for the Assessment of Neuropsychological Status (RBANS), and were checked 11C-labeled amyloid PET. We quantified the standard uptake value ratio (SUVR) as the degree of amyloid deposition. And correlation analysis between amyloid deposition of each brain region and cognitive function performed.

**Results:** Ten subjects were judged as β-amyloid-negative (Aβ-), and 3 subjects as β-amyloid-positive (Aβ+). In both group, mean Aβ deposition was most in frontal region, followed by occipital, temporal, parietal lobe, and when the brain further subdivided, globus pallium (GP) was the most deposition region, followed by posterior cingulum, putamen. Differences of the mean Aβ deposition between Aβ+ and Aβ- group was found in right orbital frontal region most, followed by precuneus, posterior cingulum. In result of correlation analysis, immediate memory abilities are correlated negatively with amyloid deposition in following brain regions, left caudate, anterior cingulum, left calcarine, left putamen, respectively. Delayed memory abilities are correlated negatively with amyloid deposition in left calcarine. And such correlations also are observed in between visuospatial function and right caudate, between attention and left middle frontal region, negatively.

**Conclusion:** In patients with GD, Aβ deposition was most in GP in which typically Alzheimer’s disease have a little Aβ. Memory, attention, and visuospatial function were negatively correlated with amyloid deposition in certain brain region respectively.

**PT570**

**Apathy and Intrinsic Connectivity Networks in the Amnestic Mild Cognitive Impairment**

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**Abstract**

**Background:** Although there has been several studies reporting that apathy is associated with faster cognitive impairment and earlier conversions to Alzheimer’s disease in the amnestic mild cognitive impairment, effects of apathy in the functional large-scale intrinsic connectivity networks (ICN) are not yet clear. The aim of this study is to investigate the distinctive association pattern of apathy on the 3 large-scale ICNs (the DMN, the salience network (SN) and the central executive network (CEN)) in amnestic mild cognitive impairment (aMCI).

**Methods:** Fifty subjects with amnestic mild cognitive impairments and fifty control subjects underwent resting state functional magnetic resonance imaging. We investigated the association pattern between apathy and intra-functional connectivity (FC) and inter-FC of the DMN, SN and CEN in the aMCI group.

**Results:** We found that the FCs of the DMN, the SN and the CEN were lower in the aMCI group, compared with the control group. Apathy was positively correlated with posterior cingulate FC and negatively correlated with mid frontal FC in the aMCI group. In addition, anterior cingulate FC in the SN were positively correlated with apathy in the aMCI group. The anti-correlation strength between the DMN and the CEN was negatively correlated with apathy in the aMCI group.

**Conclusions:** Our results of aberrant DMN and SN FC and distinctive correlation patterns between the apathy and FCs in the several ICNs in the amnestic MCI group might reflect very detrimental effect of apathy on functional changes in the course of AD progression.

**PT571**

**Quantification of perivascular drainage in mouse cerebral cortex for the study of its role in Alzheimer’s disease**

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**Abstract**

Recently lymphatic vessels in the central nervous system have revealed. The newly-found lymph system begins at subarachnoid space, however, the removal mechanism from the brain parenchyma is still unknown. Perivascular drainage (PVD) is the phenomenon that interstitial fluid and solutes in parenchyma are drained along vessel walls into subarachnoid space. PVD is one of the plausible clearance processes within cortex. Small molecules such as amyloid beta are cleared through this pathway while the contribution of PVD on Alzheimer disease (AD) is not well investigated. This is mainly because there is no standard way to quantify the PVD. Here we propose a novel method and two parameters, uniformity index and delta area above curve (ΔAAC), to quantify the PVD and investigate the role of PVD in AD.

We hypothesized that small molecules movement is mainly dependent both on PVD and diffusion. The PVD would give additional force to move them further toward the draining path. This force can be quantified by observing the amount of movement...