However, DP can contribute to Flutemetamol PET signal in regions with very high DP area coverage. Thus, Flutemetamol PET may correlate better with NIA-AA 2012 AD neuropathology criteria that incorporate both CERAD (NP) and Thal phases (all types of Aβ plaques).

IC-P-012 ASSOCIATION OF RECENT MEMORY PERFORMANCE AND AMYLOID DEPOSITION IN AD CONTINUUM OF COGNITIVELY NORMAL ELDERLY SUBJECTS AND AMYLOID-POSITIVE MCI

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Background: The purpose of this study was to investigate the decline of recent memory performance with amyloid PET and a surrogate maker of cognitive reserve in cognitively normal elderly people and amyloid positive patients with amnestic mild cognitive impairment (MCI). **Methods:** Subjects selected from in-house studies were 61 cognitively normal (CN) subjects (age: 69.8±5.7 (60-82) y.o., years of school education (YSE): 12.2±2.4 (9-18) years) and amyloid positive 17 patients with MCI (age: 74.6±6.1 (60-82) y.o.; YSE: 11.4±2.6 (8-16) years). They underwent a test of logical memory-II (LM-II) of Wechsler memory scale revised. Distribution volume ratio (DVR) image was calculated from dynamic PiB PET using simplified reference tissue mode 2. The DVR images spatially normalized using DARTEL method. Statistical analyses of the DVR images were performed with SPM8 for multiple regressions to assess the relationship with memory, age, and YSE. Correlation and regression analyses among regional DVR value, age, LM-II score and YSE were performed using SPSS. **Results:** Eleven out of 61 cases of CN were visually evaluated as amyloid-positive scan. LM-II score was 16.8 ± 6 (4-35) and 4.4±4.8 (0-15) in CN and MCI, respectively. A SPM analysis of the group of CN demonstrated that LM-II score was inversely associated with DVR values in the bilateral localized medial temporal cortices ($p<0.005$, ext>50). In CN a significant correlation was observed between LM-II and YSE ($r>0.5$, $p<0.001$). Multiple regression analyses with LM-II as a dependent variable represented that statistically significant terms were YSE ($p<0.001$) and an interaction term of YSE and regional DVR in the medial temporal lobe. In contrast, the combination group of CN and amyloid positive MCI showed an inverse association between DVR value and LM-II in wider areas such as anterior and posterior cingulate area, lateral temporal lobes, and basal forebrain in a SPM analysis ($p<0.005$, ext>50). **Conclusions:** The results suggest that, recent memory declines in association with amyloid deposition in the medial temporal lobe and cognitive reserve at cognitively normal stage, while recent memory performance goes down along with amyloid deposition spreading widely at the stage of cognitively normal to MCI in AD continuum.

IC-P-013 AMYLOID ACCUMULATION WITHIN THE NEGATIVE RANGE IS LINKED TO MEMORY DECLINE IN COGNITIVELY NORMAL OLDER INDIVIDUALS

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Background: The earliest phase of amyloid accumulation, before deposition is widespread throughout cortex, is of great interest for understanding the etiology of Alzheimer's disease and for developing amyloid-modifying treatments. A critical question that has emerged is whether amyloid accumulation can be detected prior to amyloid positivity, and whether this accumulation is accompanied by any subtle changes in cognition. **Methods:** We identified 160 normal older individuals from the Alzheimer's Disease Neuroimaging Initiative who were negative on 18F-florbetapir PET based on global uptake in cortical summary regions. We contrasted the baseline florbetapir scans of subjects who subsequently increased or did not increase over 2 or 3 scans (2-4 years) of longitudinal florbetapir imaging in order to define a set of early accumulation regions at baseline. Then we determined whether amyloid accumulation within these early accumulation regions was related to concurrent memory change. **Results:** Early accumulation regions (regions elevated at baseline for subjects who subsequently increased) were located in bilateral precuneus, posterior cingulate, and superior parietal lobes. Within these regions, 103/160 (64%) of baseline-negative normals had positive florbetapir slopes. 17 subjects (4 APOE4+) converted to florbetapir positive status over 3.4+-1.0 yrs (3.1% per year). Negative normals who increased on florbetapir did not differ from nonincreasing subjects with respect to age, sex, education, ApoE4 status, baseline temporoparietal glucose metabolism, or hippocampal volume but they did have slightly higher baseline cortical florbetapir, indicating that accumulation was ongoing. Increasing florbetapir was associated with memory decline regardless of whether florbetapir change was assessed as a dichotomous ($p=0.007$) or continuous ($p=0.03$) variable. Finally, the effect was stronger for subjects with longer florbetapir followup (3 scans over 4.1+/-0.3yrs compared with 2 scans over 2.4+/-0.8yrs). **Conclusions:** Despite considerable variability in longitudinal amyloid and memory measurements in amyloid negative healthy older individuals, those with increasing