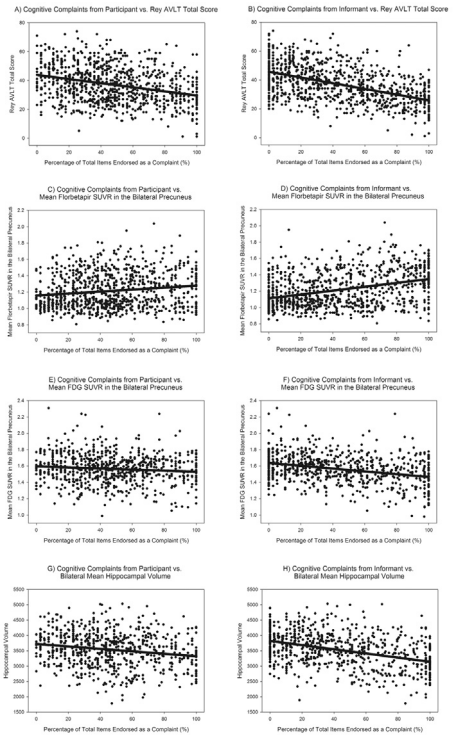
segmentation. The current study hence aimed to determine whether choice of ADNI MPRAGE acquisition and RF coil impacts on the compatibility of common brain segmentation software packages. **Methods:** 3D T1-weighted images of 9 subjects were acquired on a 3T GE MR750 scanner using 8, 12 and 32-channel coils (ADNI-1 MPRAGE, ADNI-GO/2 MPRAGE, ADNI-GO/2 accelerated MPRAGE, together with a FSPGR volume for comparison). Images were processed using SPM-8, FSL and FreeSurfer in order to determine grey matter (GM), white matter (WM) and cerebrospinal fluid (CSF) volumes. Volumes were analysed in SPSS using the Intra-class correlation co-efficient (ICC) as a reliability measure to examine how strongly volumes between each coil and sequence were related. **Results:** On average, brain segmentation results using the ADNI-1 MPRAGE were the most comparable for GM using the 8(GM=0.93), 12(GM=0.88) and 32-channel(GM=0.87) coil, whereas the ADNI-GO-ACC sequence was most comparable for WM: 8(0.99), 12(0.99) and 32-channel(0.97) coil. No ADNI sequence was better than the others for segmenting CSF. Overall, the 8-channel coil produced the most consistent GM and WM segmentation: 8(GM=0.91,WM=0.97), 12(GM=0.88,WM=0.92) and 32-channel (GM=0.76,WM=0.91) coil. CSF segmentation using SPM-8(0.89) and FSL(0.89) was best using the 8-channel coil, but overall FreeSurfer segmentation using the 32-channel coil was the most comparable. Segmentation reproducibility on average across all sequences was consistently higher using FreeSurfer(GM=0.87,WM=0.95), compared to SPM-8(GM=0.84,WM=0.92) and FSL(GM=0.83,WM=0.93). **Conclusions:** Segmentation comparability was dependent on tissue type and was most comparable in SPM-8, FSL and FreeSurfer in the following order: WM>GM>CSF. Comparability for FreeSurfer and the ADNI-1 sequence was best in both GM and WM. We have shown the extent to which the choice of coil, sequence and brain segmentation software impacts the volumetric analysis of MRI data. This has implications for future study design and for initiatives aiming to combining multiple retrospective MRI studies.



P2-200 SELF- VERSUS INFORMANT-BASED COGNITIVE COMPLAINTS: RELATION OF E-COG SCORES TO IMAGING, BIOMARKERS AND CLINICAL STATUS IN ADNI-2

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Background: Cognitive complaints are common in older adults including controls with generally intact psychometric performance (HC) as well as those with early or late mild cognitive impairment (EMCI, LMCI). We analyzed the relationships between imaging biomarkers, clinical performance, and cognitive complaints on the Measurement of Everyday Cognition (E-Cog) from both the participant and his or her informant in the ADNI-2 cohort. **Methods:** Data from 895 participants were analyzed (256 HC, 287 EMCI, 210 LMCI, 142 AD). Measures of amyloid deposition, glucose metabolism, and brain atrophy from target regions of interest (ROIs) were extracted from Florbetapir PET, fluorodeoxyglucose (FDG) PET, and structural MRI, respectively. PET scans were processed using standard techniques to generate SUVR measures intensity normalized to the whole cerebellum (Florbetapir) and pons (FDG). MRI scans were analyzed using Freesurfer (R0Is) and SPM8 (voxel based morphometry). Clinical, diagnostic, CSF, and cognitive performance data was also obtained for all available participants at the first ADNI-GO/2 visit. Associations between amyloid deposition, glucose metabolism, brain atrophy, CSF A β and tau levels, cognitive performance, and the extent of cognitive complaints on the E-Cog from the participant and informant were assessed. **Results:** Diagnostic groups differed in E-Cog scores for both participants and informants as expected (Table 1), with greater complaints in the MCI and AD groups. Significant associations between E-Cog self and informant measures and cognitive performance, amyloid deposition, glucose metabolism, CSF A β and tau, and brain atrophy were also observed across the full sample and within diagnostic groups (Figure 1). Generally, informant E-Cog scores in the memory domain and across all cognitive domains showed more significant associations with biomarkers and clinical performance than self-ratings by the participant. A notable exception was depressive symptoms which were more significantly associated with self E-Cog scores than informant scores. **Conclusions:** Informant ratings of cognitive decline in mildly impaired and cognitively healthy participants are better predictors of cognitive performance and AD biomarker status than self-reported cognitive complaints. For very early detection of incipient cognitive decline in secondary prevention trials it may be advisable to ascertain informant ratings of apparently healthy older adults and not only in those suspected of MCI or dementia.