ADNI Alzheimer's Disease Neuroimaging Initiative

Flortaucipir Processing Methods

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Summary

We provide a group of the template-based summary Flortaucipir (FTP) PET tau burden measures with cerebellum crus 1 as the reference region and Mayo's tau PET metaROI that is used for positivity (Jack, Wiste, Weigand, Therneau, Knopman, et al., 2017; Jack, Wiste, Weigand, Therneau, Lowe, et al., 2017.

Methods

All images downloaded from LONI (http://adni.loni.usc.edu/methods/pet-analysis/pre-processing/) were fully preprocessed by LONI (Co-registered dynamic, Averaged, Standardized Image and Voxel Size, and Uniform Resolution). The images were coregistered to closest MRI to the tau visit and then spatially normalized to template space using SPM12 (Wellcome Trust Center for Neuroimaging, UCL, UK) in MATLAB R2013a (Mathworks, Natick, MA). An in-house developed procedure was used to calculate the SUVR values in the template space for an entorhinal region defined by the Mayo Clinic Adult Lifespan Template (MCALT) and inferior temporal region in AAL2 both with a cerebral crus 1 reference region from AAL2. A tau metaROI was computed as the median-uptake of voxels in entorhinal, amygdala, parahippocampal, fusiform, inferior temporal, and middle-temporal-ROIs normalized to cerebellar-crus (Jack, Wiste, Weigand, Therneau, Knopman, et al., 2017; Jack, Wiste, Weigand, Therneau, Lowe, et al., 2017).

Uploaded data:

We upload SUVR values for entorhinal and inferior temporal regions and tau PET metaROI included in this update and will provide frequent future updates when new images become available and analyzed.

Version Information

This is the document submitted from Banner Alzheimer Institute regarding the SUVR calculation for FTP PET image analysis.

Dataset Information

This methods document applies to the current data uploads and future updates to the BAI template based FTP PET analysis results.

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About the Authors

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Reference List

Jack, C. R., Jr., Wiste, H. J., Weigand, S. D., Therneau, T. M., Knopman, D. S., Lowe, V., . . . Petersen, R. C. (2017). Age-specific and sex-specific prevalence of cerebral β-amyloidosis, tauopathy, and neurodegeneration in cognitively unimpaired individuals aged 50–95 years: a cross-sectional study. *The Lancet Neurology, 16*(6), 435-444.