

Abstract 832

CHOROID PLEXUS ENLARGEMENT IS ASSOCIATED WITH LOWER CSF CLEARANCE FROM THE LATERAL VENTRICLES OF THE BRAIN, AS MEASURED BY 18F-MK-6240 PET

Type: Abstract Submission

Topic: Theme B: Taupathies / B04.h. Imaging, Biomarkers, Diagnostics: CSF, blood, body fluid biomarkers

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The glymphatic system is considered a key contributor to the pathophysiology of neurodegenerative diseases, including Alzheimer's disease (AD). The CSF, which is mostly produced by the choroid plexus (CP), is the fluid that carries metabolic waste for glymphatic clearance. Since the production of CSF could be related to the effectiveness of clearance, CP enlargement could potentially reflect morphological changes in its epithelial cells, calcification, and functional impairment. This study evaluates the relationship between CP volume and glymphatic clearance measured by dynamic PET.

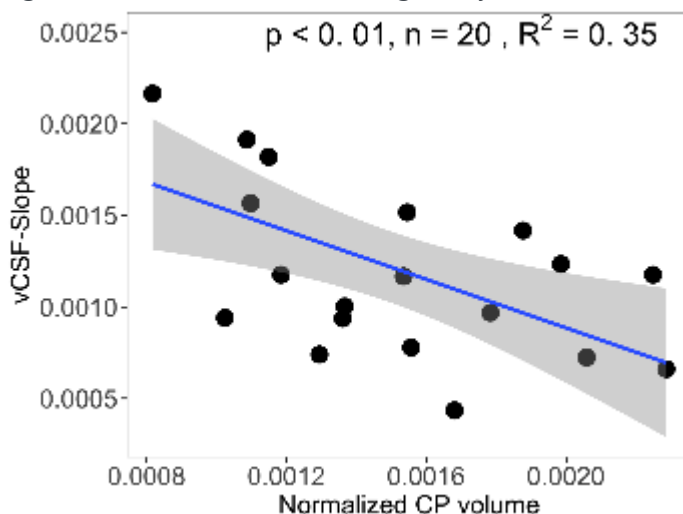
Methods

We conducted both MRI and 18F-MK-6240 PET scans on 20 amyloid-positive subjects (Age: mean=68.4, std=6.8, M=7). T1W was acquired for ROI parcellation using FreeSurfer and for intracranial volume (ICV) using SPM12. T2-FLAIR was acquired for CP segmentation using a Gaussian mixture model. CP volume was normalized by ICV for analysis. Dynamic PET with 18F-MK-6240 tracer was used to compute ventricular CSF turnover rate, vCSF-Slope (Y. Li, 2021). The linear association between vCSF and CP volume was evaluated, adjusted for age and gender.

Results

Figure-1 shows that the enlargement of CP is associated with a lower CSF clearance rate ($r=-0.57$, $p<0.01$, $R^2=0.35$), where r is from the partial correlation test by controlling for gender and age.

Figure-1. CSF turnover rate is negatively associated with choroid plexus volume.



[enlarge](#)

Conclusions

Our preliminary results show that the CP enlargement might be indicative of CP dysfunction in producing CSF, thereby further impairing the circulation of CSF in the glymphatic clearance system.

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