

Title : Diffusion fiber tractography on phonological loop with Logopenic aphasia tau pathology: Fiber-specific white matter reductions in Alzheimer's disease, “is it a causal or casual link?”

Abstract

Introduction Logopenic Aphasia (LA), a variant of primary progressive aphasia characterized with difficulty in retrieving precise words, names, or numbers and sentence repetition. Previous studies detailed that 50% of LA patients had (Alzheimer's disease) AD pathology, and characteristics of LA synchronize with language impairments in AD. Researchers believed that, the atrophy of Phonological loop (A sensorimotor circuit that includes auditory regions, the inferior parietal lobe, and Broca's area, which integrates phonological processing and executes motor output) cause LA. Methodology We focused on structural connectivity of Phonological loop using “Diffusion Imaging fiber Tractography” with 60 DTI datasets (30 Males and 30 Females) of both control and progressive stages of Alzheimer's, with the age range 55–120 years, with IRB approval and made an attempt to correlate the Logopenic aphasia, with phonological loop fiber-specific white matter reductions in early AD. Results Overall progressive diminution was observed in the phonological loop of males (Figs 1 & 2) and left hemispheric deterioration is markedly seen in terms of both fibers and tract volume (significant at $p < .05$). Current study, also reveals that contralateral adaptation are more pronounced in AD males than in females AD. Based on our analysis on phonological loop in AD, Logopenic aphasia may present as clinical marker for early Alzheimer's. These findings must be vindicated with functional MRIs analysis.

For more details :

https://www.researchgate.net/publication/338185625_Diffusion_fiber_tractography_on_phonological_loop_with_Logopenic_aphasia_tau_pathology_Fiber-specific_white_matter_reductions_in_Alzheimer's_disease_is_it_a_causal_or_casual_link