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Logopenic aphasia tau pathology: An observation on phonological loop fibre-specific white matter reductions in Alzheimer's disease - Is it a causal or casual link?

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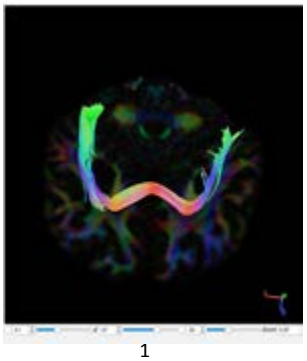
Primary progressive fascia is a neurodegenerative disorder that was recently classified into three types: fluent (meaningful), non-fluent, and logophenic. Logopenic aphasia, is characterized with difficulty in retrieving correct words, names, or numbers and sentence repetition. In previous studies, it has been said that 50% of the LogicGenic versions are closely related to Alzheimer's disease compared to two other types, which are closely related to frontotemporal dementia. Previous workers identified that the atrophy of Inferior parietal lobe, cause logopenic aphasia. But, the exact structural connectivity correlations are still unproven. We Team NeurON focused to identify the structural connectivity correlations, using “Diffusion Imaging fiber Tractography” and identified the detoriation of fibers in phonological loop, possibly cause aphasia in Alzheimer’s Patients”. The study involves both the sex DTI datasets from 25 control and 25 Alzheimer patients, age group from 50 to 75 years.

Results: Alteration in numbers and volume of the tracts in the phonological loop of both the hemispheres, insignificantly vary between the control and Alzheimer’s groups. But, we observe that the fibers connecting the bilateral phonological loops are markedly reduced in Alzheimer’s disease.

Conclusion: The current observations, propose an insight knowledge to understand the probable cause of aphasia in Alzheimer’s patients. The phonological loops are nearly normal in both the cases but, variation in the communicating fibers from right to left connections are severely detoriated, which may lead to the cause of aphasia, but, the findings need to be confirmed with functional MRIs analysis in future understandings.



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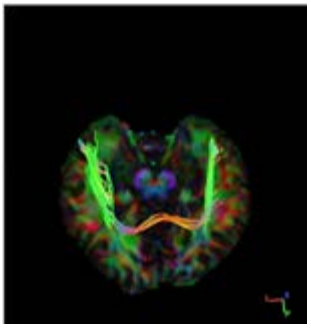

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Figure 1: communicating fibers from right to left , In control patients in Alzheimer’s patients

Biography

Venkata Hari Krishna Yadav kurra is a medical student at the Texila American University in the Caribbean region – Guyana. He is an outstanding Junior Young Researcher in “Team NeurON” group from the same University. He is basically from India, migrated to Guyana for his Medicine study and Research activities. His area of interest is Neuroscience and Imaging tractography. He is also involved in more than 15 research actives in Team NeurON group in Texila America University.

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