Radiology: A new hope to help differentiate between types of dementia

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Madam, Lewy Body Dementia (LBD) is one of the disabling conditions commonly seen in elderly population, characterized by parkinsonian-like features, visual hallucinations, fluctuating levels of cognition, and Rapid Eye Movement (REM) sleep behaviour disorder. As per recent statistics, low-middle income countries account for 58% of the world's population aging with dementia. By 2050, the population aging with dementia is expected to rise to 68%. Worldwide, developing countries bear 60% of the burden of patients with dementia. Approximately, Pakistan has 150,000-200,000 dementia patients.[1] True prevalence of LBD remains unknown owing to less diagnosed cases, however one meta-analysis has quoted the prevalence of around 7.5% in clinical population.[2] Another study has quoted around 4.2%.[3] The variation in the studied prevalence could be explained by the face that despite presence of clinical biomarkers,[4] and a validated diagnostic tool,[5] DLB remains undiagnosed in majority of the cases.

For several years, it was hypothesized that combining single-photon emission computed tomography with an intravenous radioactive compound, [123I] FP-CIT, could assist in differentiating Lewy body dementia from Alzheimer's disease (AD) dementia. Several dopamine-producing neurons are found in abundance in striatum and [123I] FP-CIT binds to dopamine transporters located on their membrane. Since these neurons are reduced in quantity in dementia with Lewy bodies (just as they are in Parkinson's disease), but not in Alzheimer's disease, this pattern of distribution would then aid in quantitatively distinguishing DLB from AD in an accurate way.

Neuroimaging techniques such as FP-CIT-SPECT and [123I] MIBG can be useful in adding diagnostic accuracy. However these techniques are not very accurate in diagnosing dementias on spectrum[6] LBD poses unique challenges due to being complex multi-symptom disorder that affects quality of life and increased caregiver burden. The difficulties arise not only due to this disabling disease but lack of knowledge, awareness and subsequently proper management[7] When diagnosis is made in due time, it enables planning for the future and improves quality of care. In the context of such limitations to treatment, we propose that the use of such investigations and more research to be done in this area as that could help bridge the gap between our currently available diagnostic options and the increasing burden of dementia in Pakistan.

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