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Poster presentation

Clinical, MRI and brain SPECT correlations in dementias

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Background

To differentiate between the various types of Dementias with Brain SPECT and MRI in correlation with clinical findings.

Materials and methods

Patients suffering from memory impairment/memory loss for greater than 6 months were referred for Brain SPECT. They underwent detailed clinical evaluation, Mini mental state examination (MMSE), Memory/cognitive testing and a MRI. The patients were clinically classified into various dementias. Brain SPECT was done after injecting Tc 99 m ECD (Ethylene Cysteinate Dimer) and imaging after 45 minutes. The various patterns of perfusion abnormalities seen visually in the SPECT images were studied and compared and correlated with MRI and clinical findings.

Results

Thirty seven patients seen from February 2003 to February 2005 were included. The mean age was 65.2 with a SD of ± 11.2 years. There were 23 men and 14 women. 32 had dementia and 5 had MCI clinically based on DSM IV criteria. Of the 32 patients, 19 had probable Alzheimer's Disease (AD), 9 had Vascular dementia (VaD), 1 had Frontotemporal dementia (FTD) and 3 had Parkinson's disease with dementia. Using MRI and Brain SPECT findings, without the knowledge of probable clinical diagnosis, 15 had features of probable AD, 10 had features of VaD,1 had FTD and 6 had Mixed Dementia. The sensitivity and specificity was calculated using clinical diagnosis at follow up as gold standard and was 63% and 77% in AD and 78% and 87% in VaD. The overall diagnosis using clinical, MRI and Brain SPECT was compared with initial clinical diagnosis using Chi square test and was statstically significant ($p < 0.05$).

Discussion

Brain SPECT and MRI in correlation with clinical findings helps in distinguishing between the various types of Dementias and helps in instituting early treatment. Mixed Dementia patients who are unlikely to be diagnosed clinically can be identified by a combination of the above methods.