Quantitative EEG applying the statistical recognition pattern method: a useful tool in the dementia diagnostic work-up.

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Title:

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Background/aims:

The aim of the study was to examine the discriminatory power of the quantitative EEG (qEEG) applying the statistical pattern recognition (SPR) method to separate Alzheimer's Disease (AD) patients from elderly persons without dementia and from other dementia patients.

Methods or Materials or Case Report:

Participants were recruited from six Nordic memory clinics, 372 unselected patients, mean age 71.7 (s.d. 8.6), 54% women and 146 healthy old people, mean age 66.5 (s.d. 7.7), 60% women. After a standardized and comprehensive assessment clinical diagnoses were made according to international accepted criteria by at least two clinicians. EEG was recorded in a standardized way and analyzed independently of the clinical diagnoses using the SPR method.
Results:

In receiver operating characteristic (ROC) analyses the qEEG separated AD from healthy old person with an area under the curve (AUC) of 0.90, representing sensitivity (SS) of 84 % and specificity (SP) of 81%. The qEEG further separated patients with Lewy body dementia or Parkinson’s disease dementia from AD with AUC of 0.9, SS 85 % and SP 87 %.

Conclusion:

The qEEG using the SPR method could be a useful tool in the dementia diagnostic work-up.